

**Library of Congress  
BIBFRAME Pilot Training for Catalogers**

**Module 3:  
The BIBFRAME Editor  
and the LC Pilot**

**Unit 2: The BIBFRAME Editor**



**This version intended for persons external to the  
Library of Congress BIBFRAME Pilot**

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## **Library of Congress BIBFRAME Pilot Training for Catalogers**

**Version intended for persons external to the LC BIBFRAME Pilot**

### **Module 3: The BIBFRAME Editor and the LC Pilot**

#### **Unit 2: The BIBFRAME Editor**

#### **Course Summary**

This module is one module of a 3-module training curriculum, “**Library of Congress BIBFRAME Pilot Training for Catalogers.**”

In this Unit of Module 3, participants will learn, hands-on, the interface of the BIBFRAME Editor, how to navigate, how to record bibliographic data, and how to work in the context of the LC Pilot. A key component of the instruction is learning how to utilize the “profiles” in the Editor. An important additional objective is to prepare you to serve as a tester of the Editor and to provide valuable feedback through the instructors to the developers.

#### **Learning Objectives**

At the end of this module, participants will be able to:

- access the BIBFRAME Editor
- define the basic terminology used in the Editor
- navigate in the Editor interface
- select the appropriate Resource Type and Profile to process the resource in hand
- record both descriptive and subject data
- record data using various methods: dialogs, direct-entry, and menus
- utilize “AutoComplete” search functions
- enter data as ‘literals’ when a search does not find appropriate existing records
- confirm and edit the recorded data
- add multiples of the same field or element
- preview the created ‘record’
- test the features of the Editor and contribute suggestions for refinement
- discuss the feasibility and practicality of Editor features and processes
- apply an understanding of the purpose, focus, and limited objectives of the Pilot
- provide feedback and suggestions to help developers improve the Editor

#### **Training Methods**

Guided exploration and hands-on exercises

#### **Duration**

12 hours



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## Unit 1: Getting Started

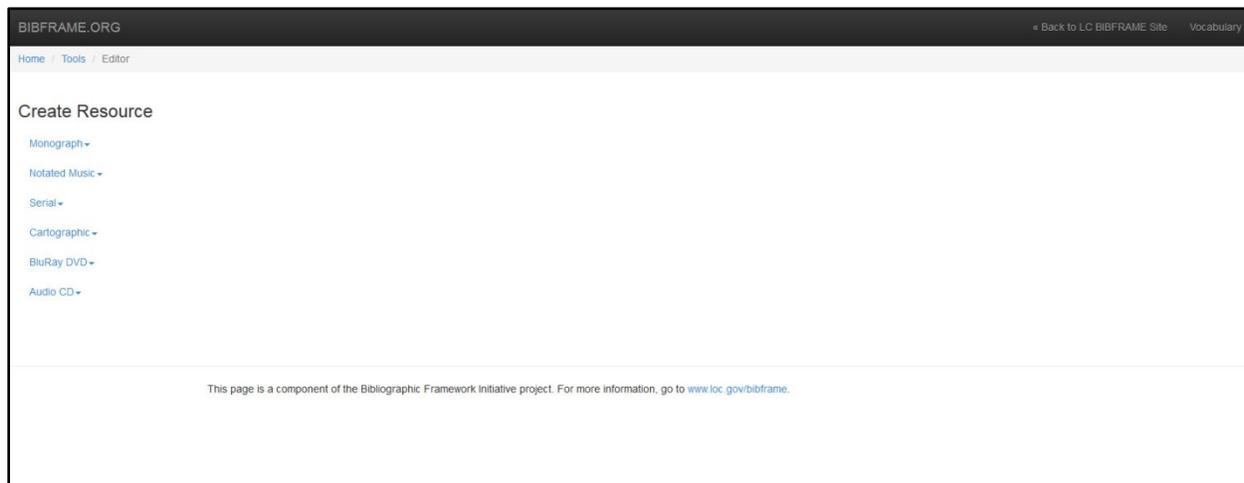
### What is the BIBFRAME Editor?

The BIBFRAME Editor (BFE) is a tool that enables input of BIBFRAME vocabulary elements. The BFE will be frequently improved as users comment and as features are added, refined, and enhanced.

### How Do I Access the BIBFRAME Editor?

- ✓ Open Firefox<sup>1</sup> and go to the **BIBFRAME Editor** at:  
<http://bibframe.org/tools/editor/>
- ✓ Bookmark this site

You should now see the BIBFRAME Editor welcome screen:



The link at the bottom leads to useful information.

- ✓ Click on the **link** to **[www.loc.gov/bibframe](http://www.loc.gov/bibframe)**

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<sup>1</sup> Do NOT use Internet Explorer.

## For More Information

Note briefly the description of BFI at the top of the page (highlighted in the image below). Most of the links on this page lead to information that is fairly technical. Among the links you might want to explore is the link to “Tools and downloads” (highlighted at the bottom left).

The screenshot shows the BIBFRAME website homepage. At the top, there are links for Print, Subscribe, Share/Save, and Give Feedback. The main heading is "Bibliographic Framework Initiative". Below this, there is a large text block describing the initiative, initiated by the Library of Congress. To the left is a navigation menu with links to Home, Frequently asked questions, Webcasts & presentations, and Contact us. Below the navigation menu are sections for "Model & Vocabulary" and "Implementation & Testing". The "Implementation & Testing" section has a link for "Tools and downloads" which is highlighted with a blue border. On the right side, there is a "What's New" section with links to "BIBFRAME Tools and Downloads" and "BIBFRAME Update Forum at ALA".

## Login and Authentication

For the BIBFRAME Pilot, there is no login procedure. Use of the Editor is strictly limited to those working in the Pilot. You *may not* disclose the Editor URL to anyone outside the Pilot.

Once BIBFRAME is implemented, there will be access and login requirements, and other features intended to ensure the integrity and security of Library data.

## Remember -- This is a Pilot

We know you will have questions as you use the Editor -- and suggestions. You may find it frustrating at times, but do not give up. We need your input and expertise to improve the tools. We, the instructors, have learned through working with NetDev staff members that creating tools for BIBFRAME is a lot more complex than it may appear. To get through this successfully, we all have to be flexible and patient. In the end our flexibility and patience will pay off.

Creating this 'brave new world' is a work-in-progress. Some features had to be simply tried -- to see how they work, and ultimately to enable refinement and fine-tuning. A significant part of your role is to test the Editor -- to tell us what works (or doesn't), what is user-friendly (or isn't), what could be less confusing or more clear. Your help is needed to design the best tool possible.

- ✓ BIBFRAME is an entirely new way of doing what you have been doing for a *long* time -- for some of you, for decades. Your mastery of MARC -- like Rome, as the saying goes -- was not built in a day. *We'll start slow, and build -- and do a lot of repetition.*

## Unit 2: Overview of the Interface

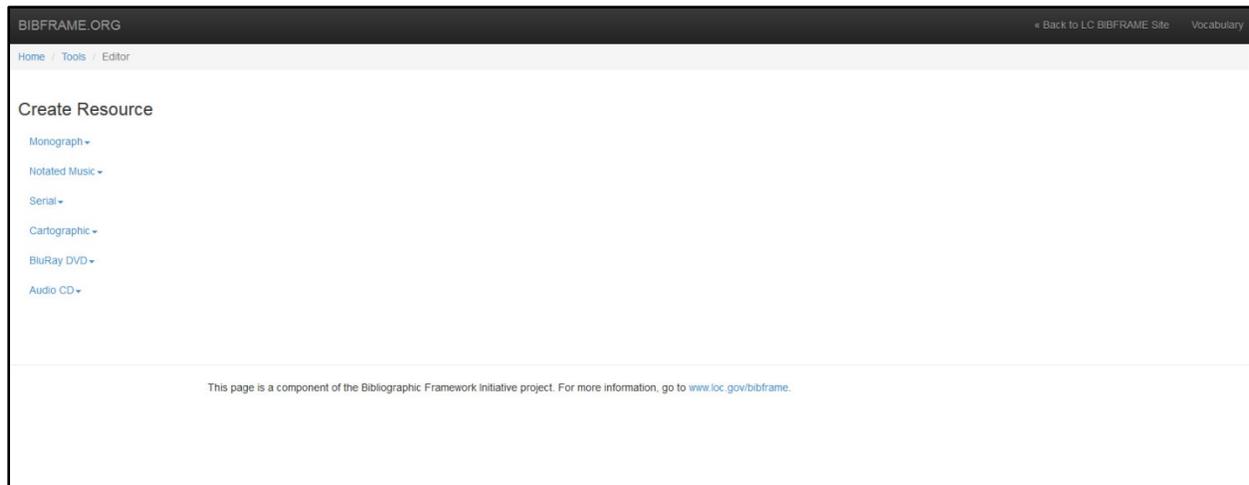
### The Objective of This Unit

In this overview, our objective is limited: to become familiar with the terminology, look, and feel of the Editor, and gain some experience using the fields, buttons, boxes, on-screen features, and functions. We won't worry too much about the logic of some of the elements we play with. In the next unit, we will focus more closely on creating catalog records.

### Terminology

Record:	the most accurate term to describe the result created using BIBFRAME is <i>graph</i> ; but because you may remember that 'graph' concepts can be hard to visualize, we will continue to call the resulting product a <i>record</i>
Resource Type:	a category of resources for which you are creating a record; the <i>Resource Types</i> in scope for the Pilot are: monograph, notated music, serial, cartographic resource, sound recording, and BluRay/DVD
Profile:	an online template for creating a record; a combination of Resource Type and BIBFRAME Class (e.g., a monograph instance, a serial work, etc.)
Workspace:	the area of the Editor in which you utilize dialogs, free-text fields, menus, buttons, and look-up functions to create the BIBFRAME record
Fields:	separate spaces on the template in which you enter cataloging data
Dialog Field:	a field represented by a button; clicking on the button displays a dialog in which you record data in text boxes; these dialogs sometimes involve separate elements (e.g., publication data) and can utilize either "Lookup" or the recording of "literals"
Direct-Entry Field:	a field represented by a text box in which you enter data directly, e.g., for transcribed fields
Field Edit Buttons:	buttons which appear after you 'set' data; clicking on the 'pen' allows you to revise the data; clicking on the 'trash can' allows you to delete the data
Lookup:	(also known as "AutoComplete") a function which searches the database as you type and displays a menu of matching terms, from which you select the term to be used in authorized access points or other 'controlled' fields (e.g., "Language of the Expression," "Relator Role," etc.)
Data Boxes:	a box that displays the specific data you have entered in a field; in some cases, this boxes contains default data which you can change as needed

## The BIBFRAME Welcome Screen



### Parts of the Screen – The Navigation Bar

The Navigation Bar at the top of the interface includes links to (left to right):

- [Bibframe.org](#) (the homepage for the Bibliographic Framework Initiative)
- the Library of Congress BIBFRAME site
- the BIBFRAME Vocabulary page

✓ Click on the **BIBFRAME.ORG** link at the left end of the Navigation Bar

We won't view this page in detail, but you should become familiar with these resources.

✓ Click on the browser **Back** button

✓ Click on the **Back to LC BIBFRAME Site** link

✓ Click on the browser **Back** button

✓ Click on the **Vocabulary** link

✓ Click on **Select Model View**

Note that there are several links on this page, which you could follow to learn more.

✓ Click on the browser **Back** button, or the **Vocabulary** link on the Navigation Bar

✓ Click on **Select Category View**

Note the *extensive* list of Properties -- each linkable to even more information. This is probably more information than you need, and mainly of interest to those with a 'programmer' mentality.

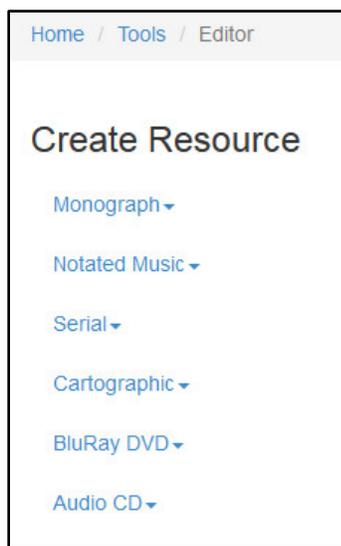
✓ Follow a few links, and then click on **Vocabulary** to get back to 'square one.'

✓ Click on **Select List View**

This page presents the entire vocabulary on one page with an ordered list of classes and properties. As you follow these links, use the browser back button to reverse your navigation.

✓ Click on **Back** as many times as necessary to return to the main Workspace (*it could be a LOT of clicks!*)

## Parts of the Screen – The Resource Type List



The “Create Resource” list at the left is the starting point for cataloging using the BIBFRAME Editor. The drop-down menus under each Resource Type – Monograph, Notated Music, Serial, Cartographic, BluRay DVD, Audio CD – allow you to access a profile for each BIBFRAME core class (Instance; Work; or a combination Work, Instance).

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*For now, we are just looking at the Interface to observe how the Editor behaves. We will type some ‘test’ data but not create an actual ‘record’ until the next unit.*

*To simplify your first experience with the Editor, we will choose the simplest profile – which is not always the most appropriate for the resource you have in hand.*

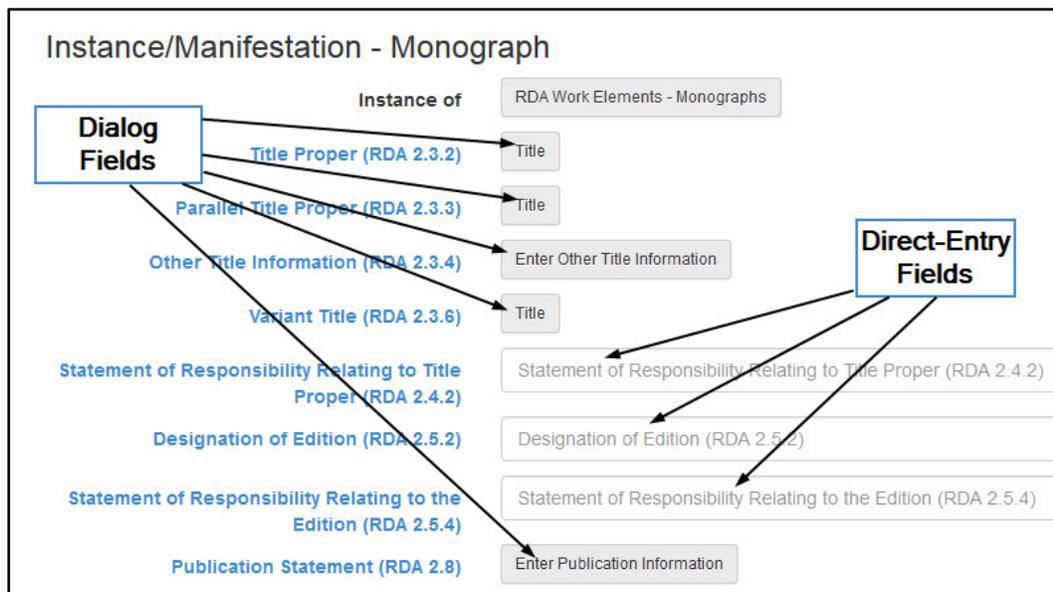
---

- ✓ From the “Create Resource” list, click on **Monograph**
- ✓ Click on **Instance**

## Parts of the Screen – The Workspace

- Note the legend at the top: A BIBFRAME “Instance” is roughly equivalent to an RDA “Manifestation.” This profile would be used, for example, if you *do* find a BIBFRAME Work description for the resource you have in hand – for an already-cataloged different manifestation, say.

*For the moment, we will skip discussion of the “Instance of” area at the very top.*



## RDA Captions

The blue captions to the left of each field are active links to that element in the RDA Toolkit. The first time you click on a caption, you will need to log into the Toolkit (i.e., the LC account); the Toolkit will then open directly to that specific instruction. Subsequent clicks will open the Toolkit in another browser tab, again to the specific instruction. *This is a really useful feature!*

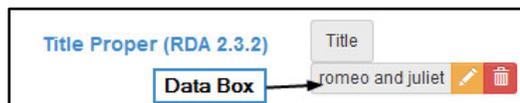
## Types of Fields -- Dialog Fields

The first ‘type’ of field used in the Editor consists of a shaded button, labeled with an instruction (e.g., “Enter Other Title Information”) or a ‘shorthand’ for the element. When you point to one of these buttons, it becomes shaded more darkly and the pointer becomes a ‘hand.’ If you click on one of these “Dialog Fields,” you see a dialog in which you record the appropriate data.

- ✓ Click on the **Title** button next to the caption “Title Proper (RDA 2.3.2)”  
The cursor is already in the dialog’s text box
- ✓ Type **romeo and juliet** *(yes, for now please type it just like this)*
- ✓ Click on **Set**
- ✓ Click on **Save changes**

## Field Edit Buttons

Beneath the button, a Data Box displays the content, and two buttons can be used to edit or delete the field.



*Oops -- the title proper is actually Shakespeare’s Romeo and Juliet.*

- ✓ Click on the yellow **pen** to get to an editable dialog
- ✓ Click again on the yellow **pen** -- i.e., on the next screen -- to actually edit the data
- ✓ Click in the text box and add **Shakespeare’s** in front of the existing title, and correct the capitalization *(remember: this is a transcribed field!)*
- ✓ Click on **Set**
- ✓ Click on **Save changes**

The edited field now looks like this:



You can repeat as necessary to edit the data.

- For now, we won’t click on the red trash can to delete the data.

**Note:** Instead of clicking on the **Set** and **Save changes** buttons in the steps above, you can press the <Enter> key on the keyboard for each step. Because your hands are already on the keyboard, you might find this alternative method slightly easier, ergonomically.

*Let’s take a quick look at our very sketchy record so far:*

- ✓ Scroll to the bottom of the screen and click on **Preview**
- ✓ After a brief discussion of what you see, click on **Back** to continue creating the record

### ***Types of Fields -- Direct-Entry Fields***

The second ‘type’ of field consists of a text box, labelled faintly with the RDA name of the element. If you click in these “Direct-Entry Fields,” the border ‘glows’ blue and you simply type the ‘literal’ data directly into the text box, and then click on the “Set” button.

We will see in the next exercise that some of these “Direct-Entry” fields offer menus of controlled terms, from which you simply select the appropriate option.

- ✓ Click in the **Designation of Edition** direct-entry text box
- ✓ Type **Rev. ed.** (yes, record it like this, for the purpose of this exercise)
- ✓ Click on **Set** or press the <Enter> key



**Oops!** You realize that you recorded the edition as AACR2 instructed – using abbreviations. *RDA* asks to record it as it appears on the source.

**Hint:** If the Data Box does not display the full content of the field, ‘hover’ the cursor over the Data Box; in a few seconds, the full data will display in a ‘tooltip.’

To *edit* the data:

- ✓ Click on the **yellow pen** under the edition statement
- ✓ Change the text to **Revised edition**
- ✓ Click on **Set** or press <Enter>
- ✓ ‘Hover’ the cursor over the Data Box to see the revised content in the tooltip

### ***The Value of Data Boxes and Tooltips***

In some cases, the Data Box displays an identifier for the element, rather than the literal data string. This is less useful for reviewing and confirming the data you have entered. And when the record is finally saved, the result is not like the series of data strings you have become comfortable seeing for years in MARC records.

**Recommendation!** When you see a Data Box, review the Data Box and tooltip carefully. If you need to edit the data, do so *at that point*. It will be more difficult if you wait until the tooltip consists of a URL intended for machine parsing.

### ***Multiples of a Field***

If you need multiples of a field, simply type one field, click on “Set,” and then repeat the procedure. You should see a ‘double set’ of Data Box and Field Edit Buttons for each field. If you need to edit one of them, just make sure to click on the proper ‘edit pen.’

### ***Black-Label Fields***

What do you notice about the fields that are labelled in black?

**Correct!** These are not specific RDA elements. They are either aggregates of elements or fields containing locally-defined elements.

### Adding Work Attributes -- The “Instance of” Button

Remember that we originally selected the “Instance” profile. We *could have* instead selected the “Work, Instance” profile to record all the data on one screen (we will see in the next unit how that works). But because we knew that a Work record already exists for Shakespeare’s *Romeo and Juliet* – and we could search for that Work record using ‘AutoComplete’ and incorporate it into our Instance, we chose the “Instance” profile, which includes on this immediate screen only those fields related to the recording of instance/manifestation data.

You can use the “Instance of” button to help with one of two scenarios:

- Lookup.* If you know there is a related instance already in the database – e.g., for an earlier edition – you can ‘lookup’ the Work elements for that instance;  
*OR*
- Typing the Work Elements.* If you want or need to explicitly add the Work elements at this time, you can type the data. This scenario applies when YOU have to create the authorized access point because it does not already exist for another instance (remember that the a.a.p. is a combination of creator and preferred title).

- ✓ Click on the **RDA Work Elements – Monographs** button

Note the two parts of this dialog, separated by “OR,” related to the scenarios described above:

- Above the OR is the ‘Lookup’ function, used to find and ‘import’ existing Work data
- Below the OR is the alternate way to use this dialog – Typing the Work Elements directly.
  - You should recognize these elements as the FRBR/RDA elements of a Work – Creator, Preferred Title, Form of Work, Date of Work ... etc. *Right?*
  - You should also recognize that some of these are Dialog Fields and some are Direct-Entry Fields.

### The Lookup Function (Scenario a)

- ✓ In the **Lookup** field, type **romeo and juliet** and wait to see database options
- ✓ Select the choice for **Shakespeare, William, 1564-1616. Romeo and Juliet**
- ✓ Click on **Save changes**
- ✓ ‘Hover’ the cursor over the Data Box to see the full human-readable data string

- The ‘Lookup’ function (our scenario a) allows you to find the Authorized Access Point (i.e., the Creator/Preferred Title combination) and ‘import’ it into the BIBFRAME record in one step; but this only applies if the Work IS in the database.
- The next function (our scenario b) applies to those cases when the Work does NOT already exist; *you* record each individual part of the Authorized Access Point (this is a variation of the scenario we will work with in our next Unit)

### Typing the Work and Expression Elements (Scenario b)

- ✓ Click on the **red trash can** to delete the “Instance of” element (you would not normally do this; we are doing it in training to allow you to practice the full functionality)
- ✓ Click again on the **RDA Work Elements - Monographs** button

*In this scenario, we’ll use the fields below the “OR” ...*

#### *Creator*

- ✓ Click on the **Principal Creator** button next to the caption “Creator of Work”
- ✓ Click on the **Person** button
- ✓ In the “Search...” text box, type **shakespeare, wil** and wait to see a menu of matches
- ✓ Select the menu choice **Shakespeare, William, 1564-1616**
- ✓ ‘Hover’ the cursor over the Data Box  
*What does that string represent?*  
*Right! – the “Authorized” form for the Creator*

*Note that the searching for and selecting a creator ‘populates’ the “Record” box.*

- ✓ Click on **Save changes**
- ✓ In the “Search Relationship Designator” text box, type **aut**
- ✓ Select **Author**
- ✓ Click on **Save changes**

#### *A Note About Searching Techniques:*

- the comma and space after the surname are critical -- or you will get very different results
- you can truncate the search -- but be sure to type enough to yield a *manageable* set of results; unless the surname is extremely unique, you will probably want to type some of the forename

*We have now completed the “Creator” portion of the Authorized Access Point. We will stay on this same dialog to complete the “Preferred Title” portion of the AAP. And for this well-known resource, we know what the Preferred Title would be.*

### *Preferred Title*

- ✓ Click on the **Title** button next to the “Preferred Title” label  
Note: This is *not* a ‘Lookup’; you are **recording data**, so *you* must record the *exact* Preferred Title, spelled and capitalized *precisely* according to RDA
- ✓ In the text box, type **Romeo and Juliet**
- ✓ Press <Enter>
- ✓ If necessary, ‘hover’ the cursor over the Data Box for the Preferred Title
- ✓ Click on **Save changes**

### *Some Other Work Attributes*

*In this brief exercise we will not add any other attributes of the Work.*

- ✓ Scroll down to the bottom of the dialog and click on **Save changes**

### *Reviewing and Editing RDA Work Elements*

- ✓ Click on the yellow **pen** under the “Instance of” button.  
Note that the tooltips display the *identifiers*, not the human-readable data strings.

If you *do* need to edit one or more of these elements:

- You may need to click on several ‘pens’ to drill down to the specific value you need to edit.
- If you review a field but decide not to edit it, click on “Cancel”

You can now continue where you left off and add more Instance elements.

### *Publication Information*

- ✓ Scroll down and click on the **Enter Publication Information** button

This dialog allows you to enter the sub-elements of the Publication Statement.

Of course, none of the fields are ‘Lookup’ – and this makes sense. You must transcribe these elements exactly as on the source. You are not looking for an ‘authorized form.’

- ✓ Type **Cambridge, England**
- ✓ Press <Enter>
- ✓ Type **Cambridge University Press**
- ✓ Press <Enter>
- ✓ Type **2012**
- ✓ Press <Enter>

This dialog should now look like this:

- Note each Data Box, displaying the data string for that element (you can ‘hover’ the tooltip to see more)
- If you need to edit or delete an element, click on its **yellow pen** or **red trash can**

- ✓ Click on **Save changes**

### ***A Temporary Problem with Editing Multi-Element Fields***

When you edit fields like the Publication Information (which contain multiple elements), the order of elements will get jumbled if you edit the field after clicking on “Save changes”. Try to ensure that the data is correct before you “Save” the entire field. The instructor will demo how to work around this temporary anomaly.

### ***Adding Additional Instance/Manifestation Elements***

- Further down, default values already appear for “Media Type” and “Carrier Type.” Since we are cataloging a “book,” we will accept the defaults of **unmediated** and **volume** (we did not add the “Content Type” in this brief exercise)
- Note the field at the very bottom: “Your Cataloger Code and Comments.” This will serve a purpose *similar* to the MARC 955 field; we won’t bother with that for this test record.

### ***Previewing the Record***

- ✓ Click on **Preview**
- Next, you can either “Save” the record (if the data is correct) or go “Back” to edit it.

*The “Save” functionality is not fully operational, and thus not covered in this course. But we will look briefly at the resulting record. You should start learning how to interpret the RDF data you see on the next page ...*

---

*This method of creating a record is a little bit clunky, and requires you to take a few ‘detours’ to secondary screens and dialogs – for example, when we added the Work attributes.*

*But remember that we purposely chose the “Instance” profile. We could have chosen the “Work, Instance” profile, and added the same elements (more or less) in a perhaps-slightly-easier method. We will use that profile for our next exercise.*

---

## A Brief Look at the BIBFRAME Record

We now see two views of the BIBFRAME data: an *RDF view* and a *JSONLD-Expanded view*. We will look briefly at parts of the *RDF view*. Remember that we entered only a few elements.

**Preview**

```

ID: http://bibframe.org/JXP1440785693
  Type(s)
    http://bibframe.org/vocab/Monograph
  bf:mediaCategory
    http://id.loc.gov/vocabulary/mediaTypes/n
  bf:carrierCategory
    http://id.loc.gov/vocabulary/carriers/nc
  bf:instanceTitle
    http://bibframe.org/TXJ1440785693
  bf:edition
    Revised edition
  bf:instanceOf
    http://bibframe.org/JSQ1440785693
  bf:publication
    http://bibframe.org/rjN1440785693

ID: http://bibframe.org/TXJ1440785693
  Type(s)
    http://bibframe.org/vocab/Title
  bf:titleValue
    Shakespeare's Romeo and Juliet
  
```

In this top portion of the record, we see (highlighted)

- The “Resource Type” -- **Monograph**
- `mediaCategory = n` (‘unmediated’) \*
- `carrierCategory = nc` (‘volume’) \*
- Title (in this case, the Title Proper) = **Shakespeare’s Romeo and Juliet**

\* The terms for these codes can be found in “Term and Code List for RDA Media Types” and “Term and Code List for RDA Carrier Types,” available at <http://www.loc.gov/standards/valuelist/>

In this middle portion, we see: →

- `relatorRole = aut` (‘author’)
- `authorizedAccessPoint = Shakespeare, William, 1564-1616`
- `hasAuthority = n78095332` (the LCCN for Shakespeare’s NAR)

```

ID: http://bibframe.org/flP1440790085
  Type(s)
    http://bibframe.org/vocab/Relator
  bf:relatorRole
    http://id.loc.gov/vocabulary/relators/aut
  bf:relatedTo
    http://bibframe.org/uRt1440790145

ID: http://bibframe.org/uRt1440790145
  Type(s)
    http://bibframe.org/vocab/Person
  bf:hasAuthority
    http://id.loc.gov/authorities/names/n78095332
  bf:authorizedAccessPoint
    Shakespeare, William, 1564-1616
  bf:authoritySource
    undefined

ID: http://id.loc.gov/authorities/names/n78095332
  bf:label
    Shakespeare, William, 1564-1616
  
```

```

ID: http://bibframe.org/JSQ1440785693
  Type(s)
    http://bibframe.org/vocab/Text
  bf:relator
    http://bibframe.org/flP1440790085
  bf:workTitle
    http://bibframe.org/gFl1440790085

ID: http://bibframe.org/gFl1440790085
  Type(s)
    http://bibframe.org/vocab/Title
  bf:titleValue
    Romeo and Juliet

ID: http://bibframe.org/rjN1440785693
  Type(s)
    http://bibframe.org/vocab/Provider
  bf:providerPlace
    Cambridge, England
  bf:providerName
    Cambridge University Press
  bf:providerDate
    2012
  
```

And in this lower portion, we see:

- `titleValue` (in this case, the Preferred Title) = **Romeo and Juliet**
- `providerPlace/Name/Date` = the Publication Statement literals we entered

*In the next Unit, when we create a more complete record, we will examine the Preview in more detail.*

*This is enough for now ...*

## Unit 3: Creating a Resource Description

We will all create resource descriptions for the same example, distributed to you in class. This *made-up* example has a good variety of fields, and touches on a lot of things you will need to do in the Editor, but none of them present difficult ‘cataloging issues.’ We want you to focus on using the BIBFRAME Editor, *not on cataloging peculiarities*. This approach is consistent with the ‘*start slow, and build*’ principle we stated earlier.

### Pre-Cataloging Searching

#### *Searching Outside the Editor*

During the Pilot, you will need to first perform all related searching in Voyager (and also do the necessary Authority Work). You will need to search both for the instance/manifestation (to find duplicates), and for the authorized forms of any access points you decide to assign. You will also need to search in [id.loc.gov](http://id.loc.gov), LC’s Linked Data Service; this will be covered in a later Unit.

#### *Searching in the Editor*

Within the Editor, you will often need to search for Persons, Corporate Bodies, Works, Expressions, etc. You generally do this using the ‘AutoComplete’ (or ‘Lookup’) function.

#### *Searching for BIBFRAME Records*

During the Pilot, there is no capability to retrieve a record you created earlier. We are well aware that this is not your normal cataloging practice; you often need to call up a record to edit it, sometimes days later. This condition makes it especially important that you must carefully “Preview” and analyze the record – as on the previous page – before you click on “Save.” Errors will happen; learning how to address them is one part of what the Pilot is designed to investigate.

### What About ISBD Punctuation?

MARC is being replaced; that is one reason for the intended transition to BIBFRAME. However, ISBD punctuation is not going away – at least not entirely. What do you do about punctuation in the BIBFRAME context?

Generally:

- The ISBD punctuation that comes before a MARC field or subfield and has a direct one-to-one correspondence with an entry box in the BIBFRAME Editor is not necessary. So, for example, you **do not** need to record the slash (/) that precedes the Statement of Responsibility (a system that chooses to display BIBFRAME data with ISBD punctuation could supply that punctuation on display, if so desired).
- The ISBD punctuation that has no direct correspondence to MARC subfield coding will continue to have significance in conveying meaning to humans. So, for example, you **do** need to record the semicolon ([space];[space]) that separates multiple statements of responsibility entered in the *same* entry box in the BIBFRAME Editor.
- The BIBFRAME Editor will help you here, as you would not need to add punctuation that would appear between input boxes on the form. You would only need to supply punctuation *within* an entry box on the profile.

For example, the colon (:) used in the Publication Statement in ISBD to separate the Place of publication from Publisher's name does not need to be input. Therefore, you should record (using our earlier example):

**Cambridge, England** in the "Place of Publication" field *and* **Cambridge University Press** in the "Publisher's Name" field

*NOT*

**Cambridge, England** and **: Cambridge University Press**

*AND NOT*

**Cambridge, England :** and **Cambridge University Press,**

In the previous unit, we did not record ISBD punctuation because we were simply looking at an overview of the BIBFRAME interface to gain comfort with the various fields, dialogs, and menus. Starting with this unit, we will sometimes need to record the appropriate punctuation.

## More About the Profiles

It should be noted that the Profiles in the menu under the "Create Resource" list on the left are named with *BIBFRAME* names – after all, this is the *BIBFRAME* Editor. Therefore, there are no profiles with "Expression" or "Manifestation" in their names – those are *RDA* entities.

But when you open and begin to work in a Profile, you are recording what you know as *RDA* data elements. So the profile workspace is divided into areas that reflect the *RDA* elements.

For this next example, we will choose a different profile -- one that you might find easier to work with. We want you to see various ways of working in the Editor.

- ✓ From the "Create Resource" list, click on **Monograph**
- ✓ Select the **Work, Instance** profile



### *The Work, Instance Profile*

This profile – as the name suggests – allows you to record all data elements on one screen. You don't need to take a 'detour' to record Work and Expression elements, as we did in the previous unit. You would use this profile if you do *not* find a Work description for the resource in hand.

- ✓ Scroll down and notice how the screen is divided into areas reflecting RDA distinctions:
  - At the top are the RDA Work elements
  - A little further down are the RDA Expression elements
  - At the bottom are the RDA Instance/Manifestation elements

You can:

- enter the data in any order you wish
- 'retrieve' the "Expression of" elements
- 'retrieve' the "Instance of" elements

- We will enter the elements in the order they appear on the template – first the Work elements, then Expression, then Manifestation. This may not be how you traditionally have thought of the different ‘chunks’ of data in a record – although having already learned FRBR and RDA, you should be getting comfortable to think of them this way.

## Entering RDA Work Elements

### *Authorized Access Point -- Creator of Work*

- ✓ Click on the **Principal Creator** button
- ✓ Click on the **Person** button

There are two options, depending on whether a NAR for the creator already exists:

- If the creator *is* already in the database, “Search” the Authorized Access Point.
- If the creator *is not* already in the database, “Record” the Authorized Access Point as a free-text ‘literal’ string.

### Scenario a): Searching for an established Authorized Access Point

Since most of you are not in the database, follow along with the instructor as far as you can.

- ✓ In the “Search ...” box, type [**your name**] (last name, comma, space, a few letters)
  - ✓ Select **your heading** (if you do not find your heading, just observe the next few steps)
- You are now ‘recorded’ as the Creator (Searching + Selecting populates the “Record” box).
- ✓ Click on **Save changes**

Now we will assign the appropriate Relationship Designator

- ✓ Click in the **Search Relationship Designator** box
- ✓ Type **aut**
- ✓ Select **Author**

Both the Creator and the Relationship Designator are now ready to be “Saved.”

- ✓ Click on **Save changes**

In the template, you can see the Creator, but not the Relationship Designator. You can confirm the designator by clicking on the yellow pen.



### Scenario b): Recording an unestablished Authorized Access Point

More likely, a NAR for you does not already exist – and to practice with the full functionality of the Editor, we will now follow this scenario. We will “Record” the Creator field as a literal.

- ✓ Click on the **red trash can** for the Creator, so we can ‘start over’
- ✓ Click on the **Principal Creator** button
- ✓ Click on the **Person** button
- ✓ In the “Record ...” box, type your heading as it would be established according to RDA (for our purpose, don’t worry about conflicts, but include a year of birth)
- ✓ Click on **Set**
- ✓ Click on **Save changes**

*Now we will assign the appropriate Relationship Designator*

- ✓ Click in the **Search Relationship Designator** box
- ✓ Type **aut**
- ✓ Select **Author**
- ✓ Click on **Save changes**

Again, in the template you will see the Creator. You can click on the yellow pen to confirm the Relationship Designator, which has now populated the “Record Relationship Designator” box.

**Important!** Remember that during the Pilot it is not possible to retrieve and edit a record after you have “Saved” it. It will be easier to review each element as you record it, and make any necessary revisions before you “Save” the full record.

### ***Authorized Access Point -- Preferred Title***

Remember that the Preferred Title is an element that you always have to determine -- for every resource you catalog. This does not necessarily mean that you always have to record that data in a dedicated MARC field – i.e., usually a 240 or 130. But that is because of practices for efficient use of MARC by most Anglo-American libraries, not because of adherence to the ‘letter’ of FRBR and RDA. It has long been LC policy *not* to record a uniform title (often *roughly* equivalent to “Preferred Title” in ‘RDA-Speak’) if it *exactly* matches the title proper (“Title Proper of the Manifestation,” in ‘RDA-speak’). For example, when you catalog a brand new work that has never been issued in any other instance (such as a translation or earlier edition), you would determine that the Preferred Title is exactly the same as the Title Proper, unless there are conflicts with other works, or special rules for some compilations, musical works, laws, etc. And so you record the 245 as it appears on the source, and there is no need for a 240 or 130.

But that is in the MARC world. In BIBFRAME, there are no MARC-coded fields. Thus, there is no ‘escape clause’ that says, ‘but you don’t have to duplicate the *exact* same data in two MARC fields’. In BIBFRAME there is a need to record information relevant to the BIBFRAME Work and the BIBFRAME Instance, so the MARC shortcut does not apply.

***You need to determine the Preferred Title for every resource.***

Our *Romeo and Juliet* example was a well-known work with an established Preferred Title (in the form of a NAR) that differs from our Manifestation Title. So we knew that we would need to record that different data in a field other than the Title Proper. But it was easy – we could simply ‘Lookup’ the Creator/Preferred Title combination.

In this next classroom exercise, the resource is brand new. But the point is the same: we have to determine and record the Preferred Title. There is no earlier work to ‘Lookup.’ So we simply record what we have determined to be the Preferred Title.

After considering the relevant RDA instructions and LC-PCC PS, we determine that the Preferred Title is -- as is often the case -- our Title of Manifestation, i.e., the Title Proper.

- ✓ Click on the **Title** button next to the “Preferred Title for the Work” label
- ✓ Type **Memories of the Library of Congress**
- ✓ Press <Enter>

If you need to edit the data:

- ✓ Click on the **pen**

OR

If the data is correct:

- ✓ Click on **Save changes**

The screenshot shows a web-based form for editing a resource description. At the top, the word 'Title' is displayed. Below it, there is a text input field containing the text 'Memories of the Library of Congress'. To the right of the input field is a 'Set' button. Below the input field, there are two small icons: a yellow pencil icon and a red trash can icon. At the bottom of the form, there are two buttons: 'Cancel' and 'Save changes'.

### ***Other Work Elements***

There is no conflict between our Authorized Access Point and another already in the database, so we don’t need to record **Form, Date, Place, or Other Distinguishing Characteristic**. But we might *consider* a few more Work elements.

## Other Person, Family, or Corporate Body Associated with a Work

Remember that RDA confines the scope of this element to the situations spelled-out in RDA 19.3. None of the situations is relevant for our resource.

- This element is *not* used for other creators beyond the principal creator, nor for contributors (for our resource, John Cole or Ansel Adams). We will deal with those types of access-point relationships a little later.

## Subject of the Work

*Following the usual practice for most catalogers, we will enter Subject elements a little later, after completing all the descriptive elements.*

## LC Control Number

- ✓ Normally, you would type the LCCN of the bibliographic record you created for the same resource in the LC ILS. Since this is a test record, we can skip this element now.

## Your Cataloger Code and Comments

- ✓ Type your cataloger code and today's date, in the format (YYYY-MM-DD)

## Entering RDA Expression Elements

### Content Type

This is a core element, currently recorded in the MARC 336 field

- ✓ Scroll down to the **Content Type** field

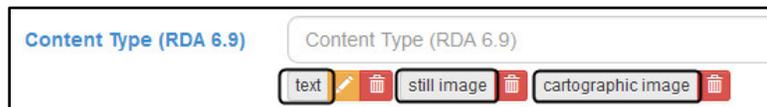
Note that the Content Type "text" has been supplied by default.



*We will accept this default, but will also record additional Types, for the photograph and maps*

- ✓ In the text box, type **sti**
- ✓ Select **still image**
- ✓ In the text box, type **car**
- ✓ Select **cartographic image**

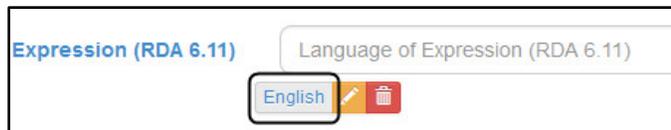
The profile shows that all three Content Types have been recorded



### *Language of Expression*

This is an RDA core element, currently recorded as a code in the MARC **008** field

- ✓ Click in the **Language of Expression** field
- ✓ Type **eng**
- ✓ Select **English** from the menu
- ✓ Note the Data Box



### *Other Distinguishing Characteristic of the Expression*

There is no need for us to distinguish this expression from another, since there is no conflict.

### *Language of the Content*

This is a core element for LC and PCC – but is it applicable in our case?

- ✓ Click on the **blue RDA link** and review instruction 7.12.1.3 in the RDA Toolkit

RDA says “Record details...”; this wording in RDA often means a “Note” (i.e., a 5XX field). “Language of the Content” relates to a *note* clarifying something that is not otherwise obvious about the language of the resource -- for example, in MARC, a 546 note indicating that multiple languages of content are present. The examples in RDA are very illustrative of the kinds of situations for which this element is used. “Language of the Content” is *not* applicable in our case and we will *not* record it.

The “Language of Expression” which we recorded a moment ago – in MARC, recorded as a code in the 008 field – often satisfies the core requirement to record the Language of Expression.

### *Illustrative Content*

Illustrative content is not a core element, since our resource is not intended for children; but we can record it if we think it useful; this is currently recorded in the MARC **300/008/500** fields.

In RDA, “Illustrative Content” is one element (7.15, using a value vocabulary), and “Colour Content” is a separate element (7.17, with a very limited value vocabulary) – even though catalogers are used to seeing these elements together in the MARC 300 \$b.

There are two other elements, “Details of Illustrative Content” (7.15.1.4) and “Details of Colour Content” (7.17.1.4), which can be used in addition to, or instead of, the first two, and are essentially notes so you can say whatever you need to, even if combining information from other elements. So we will omit both Illustrative Content (7.15) and Colour Content (7.17), in favor of following the examples at 7.17.1.4 to record a single note explicitly describing both the illustrative and the color content.

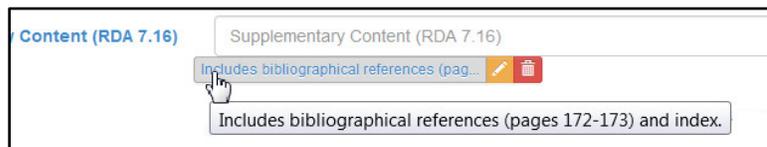
### **About the Illustrations**

According to LC-PCC PS 7.15.1.3, we *generally* do not record the *type* of illustrations (maps, photographs, etc.) -- but we are not absolutely prohibited from doing so.

### Supplementary Content

Per LC-PCC PS 7.16, “Supplementary content is a core element for LC for indexes and bibliographies in monographs”; this is currently recorded in the MARC **504/500** fields.

- ✓ Click in the **Supplementary Content** field
- ✓ Type **Includes bibliographical references (pages 172-173) and index.**
- ✓ Press **<Enter>**
- ✓ ‘Hover’ the cursor to display the tooltip and review the full data



As with other fields, if you need to revise the data:

- Click on the pen, type the correction and click again on **Set** or press the **<Enter>** key

### Colour Content

This element is currently recorded in the MARC **300/500** fields.

See the discussion above under “Illustrative Content.”

### Details of Colour Content

As stated above, we want to provide more detailed information about the illustrations ...

- ✓ Click in the “Details of Colour Content” box
- ✓ Type **Contains illustrations (some color), maps (some color), and color photographs.**
- ✓ Press **<Enter>**
- ✓ ‘Hover’ the cursor to display the tooltip and review the full data



### Contributor

Our resource has two contributors for whom we might want to record access points (remember that access points for contributors are optional in RDA).

To practice in the BIBFRAME Editor, we will include access points for both persons:

- the writer of the introduction and other contributions about architecture
  - the photographer
- Just as we did for the Creator:
- If the creator *is* already in the database, you “**Search**” the Authorized Access Point.
  - If the creator *is not* already in the database, you “**Record**” the Authorized Access Point.

For our resource, both contributors are already established in the database.

## The Writer of the Introduction and Other Contributions

- ✓ Click on the **Contributor** button
- ✓ Click on the **Person** button
- ✓ In the “Search ...” box, type **cole, john y**
- ✓ Select the heading for **Cole, John Young, 1940-**
- ✓ Click on **Save changes**

*Now we will assign the appropriate Relationship Designator*

- ✓ Click in the **Search Relationship Designator** box
- ✓ Type **wri**
- ✓ Select **writer of supplementary textual content**

**Contributor**

Search Contributor: Cole, John Young, 1940-

Search Relationship Designator: Writer of supplementary textual content

Record Relationship Designator: Record Relationship Designator

Buttons: Cancel, Save changes

---

Remember that you should not record a relationship designator if you are not certain which to record.

---

- ✓ Click on **Save changes**

## The Photographer

- ✓ Click again on the **Contributor** button
- ✓ Click on the **Person** button
- ✓ Type **adams, ansel**
- ✓ Select **Adams, Ansel, 1902-1984**
- ✓ Click on **Save changes**

*Now we will assign the appropriate Relationship Designator*

- ✓ Click in the **Search Relationship Designator** box
- ✓ Type **ill**
- ✓ Select **illustrator**

**Contributor**

Search Contributor: Adams, Ansel, 1902-1984

Search Relationship Designator: Illustrator

Record Relationship Designator: Record Relationship Designator

Buttons: Cancel, Save changes

- ✓ Click on **Save changes**

In the template, you see that both contributors have been recorded. ↓

**Contributor (RDA 20.2)**

Contributor: Cole, John Young, 1940- Adams, Ansel, 1902-1984

## Entering RDA Manifestation Elements

Scroll down to the Instance/Manifestation area ...

### Title Proper

- ✓ Click on the **Title** button next to “Title Proper”
- ✓ Type **Memories of the Library of Congress**
- ✓ Press <Enter>
- ✓ Click on **Save changes**

- Sometimes, the Editor jumps to the top of the template. Simply scroll down to the field you need to work in.

The screenshot shows a form titled 'Title'. It has a text input field with 'Title' as a placeholder and 'Memories of the Library of Congress' as the current value. To the right of the input field is a 'Set' button. Below the input field are two small icons: a pencil and a trash can. At the bottom of the form are 'Cancel' and 'Save changes' buttons.

### Other Title Information

- ✓ Click on the **Enter Other Title Information** button
- ✓ Type **anecdotes and favorite places**
- ✓ Press <Enter>
- ✓ Click on **Save changes**

The screenshot shows a form titled 'Enter Other Title Information'. It has a text input field with 'Subtitle' as a placeholder and 'anecdotes and favorite places' as the current value. To the right of the input field is a 'Set' button. Below the input field are two small icons: a pencil and a trash can. At the bottom of the form are 'Cancel' and 'Save changes' buttons.

### Statement of Responsibility Relating to Title Proper

- ✓ Click in the “Statement of Responsibility ...” box
- This is a literal data string, transcribed from the source, just as the previous fields. But in this case, the string is composed of several sub-elements, separated by ISBD punctuation. Because the sub-elements all appear in one BIBFRAME/RDF ‘field’, you will need to record (or supply) the punctuation which helps make the data intelligible to humans
- ✓ Type by [your name] ; with an introduction and other contributions by John Y. Cole ; color photographs by Ansel Adams

The screenshot shows a form with a label 'Statement of Responsibility Relating to Title Proper (RDA 2.4.2)'. The text input field contains the string: 'by Tim Carlton ; with an introduction and other contributions by John Y. Cole ; color photographs by Ansel Adams'.

- ✓ Press <Enter>

**Note:** Alternatively, you could enter the three statements of responsibility as separate fields. As a result, they would display separately, not in a single string as shown above. Currently, there is no strict policy as to which approach you apply.

**Designation of Edition**

- ✓ Click in the “Designation of Edition” box
- ✓ Type **Revised edition**
- ✓ Press <Enter>
- ✓ Note the Data Box

**Publication Statement**

- ✓ Click on the **Enter Publication Information** button
- ✓ In the **Place** box, type **Washington, D.C.**
- ✓ Press <Enter> to “Set” the data and move the cursor to the next element box
- ✓ In the **Publisher** box, type **Libraries and Literature Publications**
- ✓ Press <Enter>
- ✓ In the **Date** box, type **2015**
- ✓ Press <Enter>

If necessary, ‘hover’ the cursor to display the tooltip and review the full data.

- ✓ Click on **Save changes**

Recording multiple publication elements can be tricky:

- To record multiple statements, click again on the button and enter the 3 elements.
- To record multiples of a single element (e.g., two places for the same publisher, enter them in the same element, separated by ISBD punctuation (e.g., “London ; New York”)
- ... and remember that neither of these are required, and that publishers, distributors and manufacturers are each recorded in separate fields

**Copyright Date**

- ✓ Click in the “Copyright Date” box

- As you know, RDA 2.11 states, “*Precede the date by the copyright symbol (©) or the phonogram copyright symbol (Ⓢ).*”
- You can utilize a simple keystroke macro to record the symbol:
  - <Ctrl> <Alt> 6 for ©
  - <Ctrl> <Alt> 5 for Ⓢ

- ✓ Press <Ctrl> <Alt> **6**
- ✓ Type **2014**
- ✓ Press <Enter>

**Series Statement**

- ✓ In the “Series Statement” box, type **Great libraries**
- ✓ Press <**Enter**>

**ISSN of Series**

- ✓ Click in the “ISSN of Series” box
- ✓ Type **1234-XXXX**
- ✓ Press <**Enter**>

**Series Numbering**

- ✓ Click in the “Series Numbering” box
- ✓ Type **volume 3**
- ✓ Press <**Enter**>

**Mode of Issuance**

- ✓ Click in the “Mode of Issuance” box
- ✓ Select **single unit** from the menu

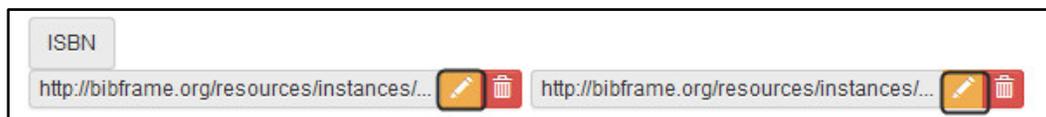
**Identifier for the Manifestation**

- ✓ Click on the **ISBN** button
- ✓ In the “Valid ISBN” box, type **01965432XX**
- ✓ Press <**Enter**>
- ✓ Press <**Enter**> again to skip the “Invalid/Canceled ISBN” box
- ✓ In the “Qualifier” box, type (**cloth**)
- ✓ Press <**Enter**>
- ✓ Click on **Save changes**

*And we can repeat these steps to add the ISBN for the paperback ...*

- ✓ Click again on the **ISBN** button
- ✓ In the “Valid ISBN” box, type **01965328XX**
- ✓ Press <**Enter**>
- ✓ Press <**Enter**> again to skip the “Invalid/Canceled ISBN” box
- ✓ In the “Qualifier” box, type (**pbk.**)
- ✓ Press <**Enter**>
- ✓ Click on **Save changes**

In the template, you see identifiers for both sets of ISBN data.



To review or confirm the details of the data, click on the appropriate yellow pen.

**Note on Title**

This field, although core, is not appropriate for our resource

***Issue, Part, or Iteration Note***

This field, although core, is not appropriate for our resource

***Other Note on Manifestation***

We can add three notes:

- *a note describing the contributions of John Cole;*
- *a note indicating the presence of the photographs on a CD in the back pocket;*
- *a note indicating the presence of L'Enfant's plan on the endpapers.*

- ✓ Click in the “Other Note on Manifestation” box
- ✓ Type **Includes contributions by John Cole on the architecture of the Jefferson Building**
- ✓ Press <Enter>
- ✓ Click again in the “Other Note on Manifestation” box
- ✓ Type **CD-ROM in back pocket contains the Adams photographs**
- ✓ Press <Enter>
- ✓ Click yet again in the “Other Note on Manifestation” box
- ✓ Type **L'enfant plan for the city of Washington on endpapers**
- ✓ Press <Enter>

Note that the field now has *three* Data Boxes:



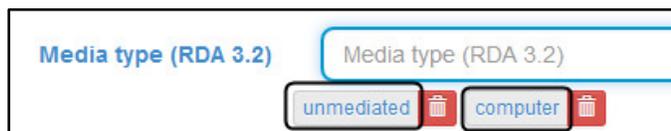
You can ‘hover’ the cursor over any Data Box to review its full data for accuracy

***Media Type***

Note here that pressing <Enter> often conveniently moves the cursor to the next field. In this case, it also automatically displays a menu of choices for Media Type.

Because we selected the ‘Monograph’ profile, the default value of “unmediated” is provided. That is acceptable, but we can also record an additional type for the accompanying CD-ROM.

- ✓ Click in the “Media Type” field (do *not* delete the default)
- ✓ Select **computer**
- Note that the new type is *added to* the default; if the default is inappropriate, you need to explicitly delete it.



**Carrier Type**

Because we selected the ‘Monograph’ profile, the default value of “volume” is provided. That is acceptable, but we can also record an additional type for the accompanying CD-ROM.

- ✓ Click in the “Carrier Type” field (do *not* delete the default)
- ✓ Select **computer disc**

Note that there are now two Data Boxes for both Media Type and Carrier Type.

The screenshot shows the 'Carrier Type (RDA 3.3)' field. It contains two data boxes: one with the text 'volume' and a delete icon, and another with the text 'computer disc' and a delete icon.

**Extent**

- ✓ Click in the “Extent” field
- ✓ Type **xi, 180 pages, 10 pages of plates**
- ✓ Press <Enter>

The screenshot shows the 'Extent (RDA 3.4)' field. It contains a data box with the text 'xi, 180 pages, 10 pages of plates' and a delete icon.

**Dimensions**

- ✓ Click in the “Dimensions” field
- ✓ Type **24 x 32 cm.**
- ✓ Press <Enter>

The screenshot shows the 'Dimensions (RDA 3.5)' field. It contains a data box with the text '24 x 32 cm.' and a delete icon.

**Call Number**

- ✓ Click in the “Call Number” field
- ✓ Type **Z733.L735 [cutter] 2014**
- ✓ Press <Enter>

*(make a quick estimate of the Cutter for your name)*

The screenshot shows the 'Call Number' field. It contains a data box with the text 'Z733.L735 C27 2014'.

**Uniform Resource Locator**

We do not have data to record here.

**Your Cataloger Code and Comments**

- ✓ Click in the “Your Cataloger Code and Comments” box
- ✓ Type **your cataloger code and today’s date in the format YYYY-MM-DD**

The screenshot shows the 'Your Cataloger Code and Comments' field. It contains a data box with the text 'lh05 2015-09-23'.

## Entering Subject Elements

Scroll back up to the “Work” area of the template; near the bottom of those elements is the label “Subject of the Work”.

Our first subject is an Organization. A NAR exists for the organization, but not for the complete string, so we will need to “Record” it as a literal.

- ✓ Click on the **Organization** button
- ✓ Click in the “Record...” box
- ✓ Type **Library of Congress—Buildings**

- ✓ Press <Enter>

- ✓ Click on **Save changes**

The screenshot shows the 'Organization' dialog box. It has two main sections: 'Search Authorized Access Point' and 'Record Authorized Access Point'. The 'Record' section contains a text input field with 'Library of Congress--Buildings' and a 'Set' button. Below the 'Record' section are 'Cancel' and 'Save changes' buttons.

Our next subject is a building, treated in BIBFRAME (at least for now) as a Topic. It is supported by a subject authority, so we can “Search” for it.

- ✓ Click on the **Topic** button
- ✓ In the “Search LCSH” box, type **Library of Congress** and wait for a menu of matches

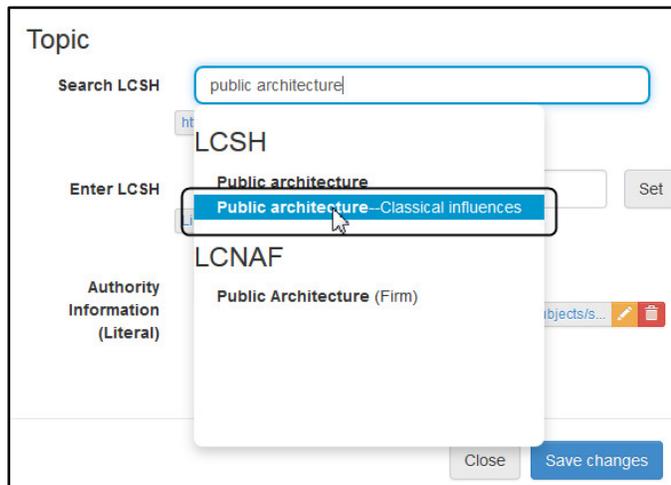
- ✓ Select **Library of Congress Thomas Jefferson Building (Washington, D.C.)**

The screenshot shows the 'Topic' dialog box. The 'Search LCSH' field contains 'library of congress|Gershwin Prize for Popular Song'. A dropdown menu is open showing search results under the 'LCSH' section. The result 'Library of Congress Thomas Jefferson Building (Washington, D.C.)' is highlighted with a blue box and a mouse cursor.

- ✓ Click on **Save changes**

*Our last subject is a Topic. The entire string, with subdivision, is supported by a subject authority, so we can “Search” for it.*

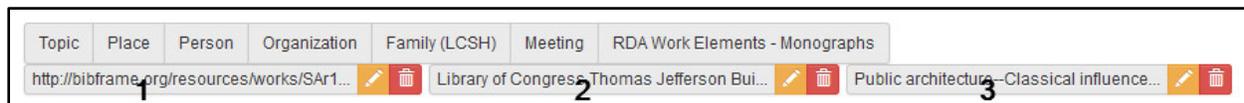
- ✓ Click on the **Topic** button
- ✓ In the “Search LCSH” box, type **Public architecture** and wait for a menu of matches
- ✓ Select **Public architecture—Classical influences**



- ✓ Click on **Save changes**

In the template, you now see all three subjects.

- For the first subject (**1** in the image below), you see a URL identifier, because there was no authority and you ‘recorded’ a literal.
- For subjects **2** and **3**, you see the human-readable string for the authorized form of the subject, because you were able to search for that authority.



## Recording and Trouble-Shooting Multiples

In some cases, we have recorded multiples of the same field (e.g., “Note on Manifestation,” “Media Type,” “Carrier Type,” “ISBN”, and some others). It is important that you understand the proper techniques for doing this – and how to trouble-shoot any problems that may arise.

- After you record one of the fields, simply click again in the box or on the button and record another field (or, for fields such as Content, Media, or Carrier Type, select another option from the menu).
- Remember to “Set” or “Save” the new field.
- Generally, do *not* click on the yellow pen icon to edit the existing field, unless that is in fact what you really want to do (for example, if you made a typographical error in a literal field such as a note).
- As a last resort, click on the red trash can icon and re-do the field.

*Follow along with the instructor as we play around with multiples. We will experiment with the Content Type, Publication, and Contributor fields.*

## Previewing the Record

Remember that during the Pilot it is *not* possible to re-retrieve the record to make changes once you have “Saved” it. You should take the time to fully ‘preview’ each element.

If you think you have entered every element into the record ...

- ✓ Click on **Preview** at the bottom right of the template.

In fact, it might be a good idea, especially while the BIBFRAME Editor is somewhat new to you, to “Preview” what you’ve done after every few fields you record, as we have done in class.

## Editing Records

After you have reviewed every element, you are ready to either edit or “Save” the record. We will not “Save”, but we will “Preview” the record as a class.

*Note this fail-safe:* You cannot “Save” the record until you “Preview” it; it is not until you see the “Preview” that the “Save” button appears. .

- *Further instructions will be provided to you about how to “Save” records outside of the training context, in the ‘real world.’*

If you need to edit the record, click on **Back**, make the changes, and click again on Preview.

## Interpreting the Record

This is why you had that little bit of exposure to XML and RDF. There is no MARC record which you can neatly review, field-by-field, with content designation that is all-too-familiar to you. This is a whole new look.

Let’s look a little deeper into this display. This is not easy – nothing completely new ever is. On the next pages, the Preview has been broken into manageable chunks.

Preview

```
ID: http://bibframe.org/resources/works/SAr1443011512
  Type(s)
    http://bibframe.org/vocab/Text
  bf:relator
    _:bnodeaTg1443017670
  bf:contentCategory
    http://id.loc.gov/vocabulary/contentTypes/sti
    http://id.loc.gov/vocabulary/contentTypes/cri
  bf:language
    http://id.loc.gov/vocabulary/languages/eng
  bf:workTitle
    _:bnodeKWj1443023409
  bf:modeOfIssuance
    http://id.loc.gov/ml38281/vocabulary/rda/ModeIssue/1001
  bf:mediaCategory
    http://id.loc.gov/vocabulary/mediaTypes/c
  bf:carrierCategory
    http://id.loc.gov/vocabulary/carriers/cd
  bf:subject
    _:bnodekZa1443095111
    _:bnodeGNM1443095372
    _:bnodejPC1443095768

ID: http://bibframe.org/resources/works/yFj1443011512
  Type(s)
    http://bibframe.org/vocab/Work
  bf:expressionOf
    http://bibframe.org/resources/works/SAr1443011512
  bf:contentCategory
    http://id.loc.gov/vocabulary/contentTypes/txt
  bf2:supplementaryContent
    Includes bibliographical references (pages 172-173) and index.
  bf2:colorContentDetail
    Contains illustrations (some color), maps (some color), and color photographs.
  bf:Relator
    _:bnodeAVv1443033965
    _:bnodevuS1443034442
```

```
ID: http://id.loc.gov/vocabulary/contentTypes/txt
  bf:label
    text

ID: http://bibframe.org/resources/instances/C11443011513
  Type(s)
    http://bibframe.org/vocab/Monograph
  bf:instanceOf
    http://bibframe.org/resources/works/SAr1443011512
  bf:mediaCategory
    http://id.loc.gov/vocabulary/mediaTypes/n
  bf:carrierCategory
    http://id.loc.gov/vocabulary/carriers/nc
  bf:instanceTitle
    _:bnodedZn1443035323
    _:bnodeGAs1443035627
  bf:edition
    Revised edition
  bf:publication
    _:bnodeiHq1443036875
  bf:copyrightDate
    ©2014
  bf2:seriesStatement
    Great libraries
  bf:issn
    1234-XXXX
  bf2:seriesNumber
    volume 3
  bf:identifier
    _:bnodebjC1443038271
    _:bnodetoA1443038343
  bf:note
    Includes contributions by John Cole on the architecture of the Jefferson Building
    CD-ROM in back pocket contains the Adams photographs
    L'Enfant plan for the city of Washington on endpapers
  bf:extent
    xi, 180 pages, 10 pages of plates
  bf:dimensions
    24 x 32 cm.
  bf2:comment
    lh05 2015-09-23
  bf:classificationLcc
    Z733.L735 C27 2014
```

```
ID: http://id.loc.gov/vocabulary/mediaTypes/n
    bf:label
        unmediated

ID: http://id.loc.gov/vocabulary/carriers/nc
    bf:label
        volume

ID: _:bnodeaTg1443017670
    Type(s)
        http://bibframe.org/vocab/Relator
    bf:relatedTo
        _:bnodeLxL1443017674
    bf:relatorRole
        http://id.loc.gov/vocabulary/relators/aut
        http://id.loc.gov/vocabulary/relators/ill

ID: _:bnodeLxL1443017674
    Type(s)
        http://bibframe.org/vocab/Person
    bf:authorizedAccessPoint
        Carlton, Tim, 1955-

ID: http://id.loc.gov/vocabulary/relators/aut
    bf:label
        Author

ID: http://id.loc.gov/vocabulary/relators/ill
    bf:label
        Illustrator

ID: http://id.loc.gov/vocabulary/contentTypes/sti
    bf:label
        still image

ID: http://id.loc.gov/vocabulary/contentTypes/cri
    bf:label
        cartographic image
```

```
ID: http://id.loc.gov/vocabulary/languages/eng
    bf:label
        English

ID: _:bnodeBef1443033966
    Type(s)
        http://bibframe.org/vocab/Person
    bf:hasAuthority
        http://id.loc.gov/authorities/names/n79072906
    bf:authorizedAccessPoint
        Cole, John Young, 1940-
    bf:authoritySource
        undefined

ID: http://id.loc.gov/authorities/names/n79072906
    bf:label
        Cole, John Young, 1940-

ID: _:bnodeAVv1443033965
    Type(s)
        http://bibframe.org/vocab/contributor
    bf:relatedTo
        _:bnodeBef1443033966
    bf:relatorRole
        http://id.loc.gov/vocabulary/relators/wst

ID: http://id.loc.gov/vocabulary/relators/wst
    bf:label
        Writer of supplementary textual content

ID: _:bnodeQZr1443034444
    Type(s)
        http://bibframe.org/vocab/Person
    bf:hasAuthority
        http://id.loc.gov/authorities/names/n79056359
    bf:authorizedAccessPoint
        Adams, Ansel, 1902-1984
    bf:authoritySource
        undefined
```

```
ID: http://id.loc.gov/authorities/names/n79056359
    bf:label
        Adams, Ansel, 1902-1984

ID: _:bnodevuS1443034442
    Type(s)
        http://bibframe.org/vocab/contributor
    bf:relatedTo
        _:bnodeQZr1443034444
    bf:relatorRole
        http://id.loc.gov/vocabulary/relators/ill

ID: _:bnodeZn1443035323
    Type(s)
        http://bibframe.org/vocab/Title
    bf:titleValue
        Memories of the Library of Congress

ID: _:bnodeKwj1443023409
    Type(s)
        http://bibframe.org/vocab/Title
    bf:titleValue
        Memories of the Library of Congress

ID: _:bnodeGAs1443035627
    Type(s)
        http://bibframe.org/vocab/Title
    bf:subtitle
        anecdotes and favorite places

ID: _:bnodeiHq1443036875
    Type(s)
        http://bibframe.org/vocab/Provider
    bf:providerPlace
        Washington, D.C.
    bf:providerName
        Libraries and Literature Publications
    bf:providerDate
        2015
```

```
ID: http://id.loc.gov/ml38281/vocabulary/rda/ModeIssue/1001
  bf:label
    single unit
```

```
ID: _:bnodebjC1443038271
  Type(s)
    http://bibframe.org/vocab/identifier.html
  bf:isbn
    01965432XX
  bf2:isbnQualifier
    (cloth)
```

```
ID: _:bnodeA1443038343
  Type(s)
    http://bibframe.org/vocab/identifier.html
  bf:isbn
    01965328XX
  bf2:isbnQualifier
    (pbk.)
```

```
ID: http://id.loc.gov/vocabulary/mediaTypes/c
  bf:label
    computer
```

```
ID: http://id.loc.gov/vocabulary/carriers/cd
  bf:label
    computer disc
```

```
ID: _:bnodekZa1443095111
  Type(s)
    http://bibframe.org/vocab/Organization
  bf:hasAuthority
    Library of Congress--Buildings

ID: _:bnodeGMM1443095372
  Type(s)
    http://bibframe.org/vocab/Topic
  bf:hasAuthority
    http://id.loc.gov/authorities/subjects/sh85076707
  bf:authorizedAccessPoint
    Library of Congress Thomas Jefferson Building (Washington, D.C.)

ID: _:bnodejPC1443095768
  Type(s)
    http://bibframe.org/vocab/Topic
  bf:hasAuthority
    http://id.loc.gov/authorities/subjects/sh87004701
  bf:authorizedAccessPoint
    Public architecture--Classical influences
```

## Unit 4: Workflow for the LC Pilot

### Why is Workflow So Important?

BIBFRAME Pilot participants *must* create bibliographic descriptions for the same resource using *both* MARC (using the Voyager ILS) and BIBFRAME (using the BIBFRAME Editor). Because the BIBFRAME Editor, at this stage of its development, has specific access and distribution parameters that are different from those used in the Voyager ILS, this appendix provides instructions about the *required* workflow during the Pilot. *This is NOT optional.*

### Where Do I Start? In the Voyager ILS

1. Select a resource to be described
2. First, search the resource in the Voyager ILS -- both the manifestation and the headings
3. Catalog the resource in the Voyager ILS, following current section practices and policies:
  - a. Do any necessary name authority work in the Voyager ILS
  - b. Do any necessary subject or classification-related authority work in Minaret
4. Add a 985 “Record History” field with subfield \$c **BibFramePilot** and subfield \$e [date]

985	\$c BibFramePilot	\$e 20150820
-----	-------------------	--------------

5. Save the record following normal routines
6. Complete end-stage processing, as required

---

**TIP:** Make a printout of the MARC record to assist you during BIBFRAME Editor processing.

---

### Then What? The BIBFRAME Editor

1. Next, search in BIBFRAME for the same resource that you cataloged in the Voyager ILS
  - a. If you **find** a BIBFRAME Work description for the resource you have in hand, select and complete the BIBFRAME “Instance” profile
  - b. If you **do not find** a BIBFRAME Work description for the resource you have in hand, select and complete the BIBFRAME “Work, Instance” profile
  - c. (see “*The Content of the BIBFRAME Database,*” below)
2. Check your work carefully as you go, since the BIBFRAME data you enter may not be easily printable for verification, unless you refer to the RDF or the JSON-LD view representing your description
3. Save your description
  - a. During the Pilot, your BIBFRAME description has to be converted to XML, exported to MARKLogic <sup>2</sup>, and then imported back into the BIBFRAME database at the Library. This means that your description may not be immediately retrievable in BIBFRAME.

---

<sup>2</sup> MarkLogic is a database that uses a flexible data model to store, manage, and search data. Its capabilities assist in making data integration simpler and faster and in providing dynamic content delivery at massive scale.

### ***The Content of the BIBFRAME Database***

- The MARC description *you* completed in the Voyager ILS ***will not be found in BIBFRAME***, since the BIBFRAME Pilot database includes only a “snapshot” of the Voyager ILS bibliographic database taken in August 2015
- Any bibliographic description that *you complete in the BIBFRAME database* during the Pilot, however, ***will be added to the BIBFRAME database***
- The LC/NACO Authority File and the LC/SACO Authority File will be refreshed in BIBFRAME on a regular schedule (currently planned to be weekly); so if you created a new name authority record in Voyager, or proposed a new LCSH heading in Minaret, you will need to enter a “literal” in BIBFRAME for the access point

---

**REMEMBER:** *Holding and Item information and End-stage processing are not part of the BIBFRAME Pilot.*

---

### **Reporting Findings, Problems, Issues, Complaints ...**

Have we said that we need your help?

Although you will be interacting with the BIBFRAME Editor in some very complex ways, the primary purpose of this BIBFRAME Pilot is very simple:

***To determine whether the BIBFRAME Editor is a viable mechanism for describing resources***

You will discover many features in the BIBFRAME Editor that are confusing, do not work as you expected, could work in a much more efficient way, need to be added, or may not even be necessary. There are surely many other things you will encounter, as well. The purpose of a pilot is to test, experiment, and (ultimately) improve. It may take several pilots to realize the far-reaching benefits of describing library resources in BIBFRAME using the BIBFRAME Editor.

So your role in this initial BIBFRAME Pilot is crucial, even as it may be frustrating at times.

### **After You Leave the Classroom: What Should You Do?**

- ✓ Continue to catalog your resources TWICE – first in MARC/Voyager, then in the BIBFRAME Editor. ***THIS IS NOT AN OPTION!***
- ✓ Continue to make note of your experiences, both good and bad --- although the ultimate goal is improvement, it is always nice to hear about things that already work well!
- ✓ Record your findings on the BIBFRAME Editor Issue Log in Appendix B
- ✓ Share your thoughts at the periodic feedback sessions that will take place during the Pilot

***Please!*** We WANT your feedback. Provide it using either the Editor Issue Log, or the feedback sessions. So as not to distract NetDev staff with a barrage of emails, please do not contact them or the instructors on your own.

## **Unit 5: Help, Support, and Other Resources**

### **COIN's BIBFRAME Webpage**

The Cooperative and Instructional Programs Division (COIN) is in the process of developing a web page devoted especially to the LC BIBFRAME Pilot. The 'stub' site is currently at: <http://staff.loc.gov/sites/lstraining/special-training/bibframe-pilot/>.

This site will be enhanced with lots of information for you in the coming days, and updated during the Pilot. You should get used to looking at this page for the latest information, announcements, tips, procedural changes, helpful documents, and other information.

### **Office Hours**

Just as PSD specialists were available during 'office hours' for specific questions after the implementation of RDA, COIN instructors Tim Carlton and Paul Frank will do their best to be available for help at regular intervals. They may not have all the answers – they may not have many, early on – but they pledge to try and find out for you. We are all 'learning on the job.'

We will post announcements about these "Office Hours" on the COIN BIBFRAME page in the next few days.

### **BIBFRAME Help**

Remember that there is some help available in the editor itself, or from the BIBFRAME website. This was covered in Unit 1 of this material.



## Unit 6: More Practice – On Your Own

In this unit, we will work on the resources you brought to class. You should have already created these records in Voyager, using MARC. And all the related Authority Work should have been completed.

Work on your own, and the instructors will circulate to try and answer your questions and provide guidance. We encourage you to work with your classroom ‘neighbor’, taking turns to work on one of your records together, then the other. In this way, you can reinforce each other.

The goal is to get comfortable using the BIBFRAME Editor. It is not to race to see who can create their record the fastest, or with the fewest errors, or with the most esoteric cataloging subtleties (although we hope you will try something more imaginative than the simplest novel).

Principles of Learning Theory state that students learn far more by making mistakes, and evaluating and correcting them, than by completing a task completely and perfectly the first time.

An excerpt from just one article among many on the subject (*Studying Workplace Learning: By Students, for Students*, by Manuela Klungler & Johannes Griesinger) includes these excerpts:

“Making mistakes can have positive effects on the future. If one makes a mistake in a certain situation, one will remember about it in future. One learns about how something does not work. Thus the same kinds of mistakes will not be repeated. This knowledge is called “negative knowledge” (Oser et. al., 1999).

“The most important action for learning from mistakes is reflection” (Bauer et al., 2008)

The key, of course, is to **learn** from the mistakes.

Bill Gates reportedly once told his employees, "*You're not failing enough! Next time, I want to see four times more failures and what you've learned from it.*"

So in fact you might *try* to make mistakes, so you can practice correcting them: enter data in the wrong field, make typographical errors, enter incorrect data, and play around with the functionality. Remember, the BIBFRAME database is not the master database, so this is the time to play around, learn how to correct errors, experiment, detect patterns, learn about the functionality ... and provide feedback.

To get you off to a good start, we'll all start together. Follow the instructors' leads ...



## Appendix A. RDF for BIBFRAME

This article was authored by Ray Denenberg, Senior Network Engineer, Library of Congress Network Development and MARC Standards Office. We are including it in this appendix to help you become more comfortable with the terminology and concepts, and better able to interpret the ‘records’ – i.e., ‘graphs’ – you create during the BIBFRAME Pilot.

\* \* \*

This paper is written for the benefit of catalogers who will need to create BIBFRAME descriptions. They do not need to be RDF experts but they do need to understand RDF to some degree. This is not an attempt to dumb-down RDF (that does not work well) but rather to avoid complexities that don’t seem necessary, as well as to try to offer an intuitive approach. Of course, intuitive, to some extent, goes hand in hand with dumbing-down and this paper becomes more abstract (and less intuitive) as you proceed through the sections, but the first section, about RDF triples, probably strikes the right balance.

### RDF Triples

RDF is about triples.

Think of a triple in terms of a basic grammatical sentence; it has three parts (1) subject, (2) verb, (3) object. For example, the sentence, “Pepper is a cat” has three parts (1) subject: “Pepper”, (2) verb “is a”, (3) object “cat”. We often refer to a triple as a “statement”.

The “RD” in “RDF” is “Resource Description”. Essentially, we start with a resource, and we describe it with statements.

A resource is anything identified by a URI.

*Notes:*

1. *Virtually anything can have a URI, so virtually anything can be a resource.*
2. *At this point, people usually ask, “what is the difference between a URI and URL.” For purposes of this discussion, there is no substantive difference whose explanation would be of any value, so assume they are the same.*

The resource description will be a set of triples (Or sentences. Or statements.)

Consider the novel, *Gone with the Wind*. It’s a resource, in fact it is a BIBFRAME resource, specifically, a BIBFRAME Work. As such, it has a URI:

<http://id.loc.gov/resources/bibs/5972243>.

In constructing triples describing this resource, this URI is used as the subject for these triples.

Here are some examples (this is in plain English, not RDF syntax):

1. <http://id.loc.gov/resources/bibs/5972243> is a BIBFRAME Work .
2. <http://id.loc.gov/resources/bibs/5972243> is a BIBFRAME Text .
3. <http://id.loc.gov/resources/bibs/5972243> has title Gone with the Wind .
4. <http://id.loc.gov/resources/bibs/5972243> has creator Mitchell, Margaret, 1900-1949 .
5. <http://id.loc.gov/resources/bibs/5972243> has subject Plantation life—Fiction .
6. <http://id.loc.gov/resources/bibs/5972243> has subject Women--Georgia—Fiction .
7. <http://id.loc.gov/resources/bibs/5972243> has classification PZ3.M69484 .
8. <http://id.loc.gov/resources/bibs/597224> has classification PS3525.I972 .

Let's examine these statements.

First, (1) and (2):

Both state a type for this resource. Any resource may have more than one type, and in this case it is a BIBFRAME Work and it is also a BIBFRAME Text (as opposed for example to a Moving Image). These types are called “classes” in RDF, and BIBFRAME Text is a subclass of BIBFRAME Work (which means that any BIBFRAME Text is a BIBFRAME Work. The terms Work and Text, class names in the BIBFRAME vocabulary, are referred to as `bf:Work` and `bf:Text` to denote that they are being used within the context of the BIBFRAME vocabulary, and not some other vocabulary that might also use these terms but with a different meaning. (And the prefix ‘bf:’ is bound to the BIBFRAME vocabulary through an association statement within the RDF description, not shown.) Also the verb expression “is a” will be abbreviate as just “a”; this is well-known within all of RDF to denote “is of type” or “is of class”. Finally, URIs within RDF triples are enclosed with angle brackets.

So (1) and (2) are rewritten:

1. `<http://id.loc.gov/resources/bibs/5972243>` a `bf:Work` .
2. `<http://id.loc.gov/resources/bibs/5972243>` a `bf:Text` .

For the remaining statements:

“has title”, “has creator”, “has subject” and “has classification” are simply “title,” “creator”, “subject” and “classification” in BIBFRAME. Hence `bf:title`, `bf:creator`, `bf:subject`, and `bf:classification`. So, verbs don't always sound like verbs; in these four cases, the “has” part is implied. When constructing an RDF verb, you can make it sound like a verb (`hasCreator`) or not (`creator`); there are recommended practices governing this.

Anyway, the verb part of an RDF triple is referred to as a “property”, “predicate” or “relationship”. These three things have slightly different meanings; “property” and “relationship” are used for different types of objects (discussed later) and “predicate” is a generalization of those two, so we'll use “predicate” when we mean “either a property or a relationship” (And note the convention: class names begin with uppercase; predicates begin with lower case).

One more thing: if we consider the set of these eight triples to be a description, note that all eight triples have the same subject. That subject does not need to be repeated and instead there is a convenient way to denote that subject of the next triple is the same as that of the current triple: You end the triple with a semi-colon (“;”) rather than with a period (“.”). When you get to the last triple for the subject, end with a period.

So the description, consisting of eight triples, is re-written as:

```
< http://id.loc.gov/resources/bibs/5972243 >
  a                bf:Work ;
  a                bf:Text ;
  bf:title         “Gone with the wind” ;
  bf:creator       “Mitchell, Margaret, 1900-1949” ;
  bf:subject       “Plantation life—Fiction” ;
  bf:subject       “Women--Georgia—Fiction” ;
  bf:classification “PZ3.M69484” ;
  bf:classification “PS3525.I972” .
```

And we can go even a step further. When consecutive triples not only have the same subject, but also have the same predicate, you don’t have to repeat the predicate, instead you can list the subject and predicate once and separate the objects with commas (“,”). So we can rewrite the description as:

```
<http://id.loc.gov/resources/bibs/5972243>
  a                bf:Work , bf:Text ;
  bf:title         “Gone with the wind” ;
  bf:creator       “Mitchell, Margaret, 1900-1949” ;
  bf:subject       “Plantation life--Fiction” , “Women--Georgia—Fiction” ;
  bf:classification “PZ3.M69484” , “PS3525.I972” .
```

Although we’ve reduced the description to five lines, these are still eight triples.

## RDF as a Graph

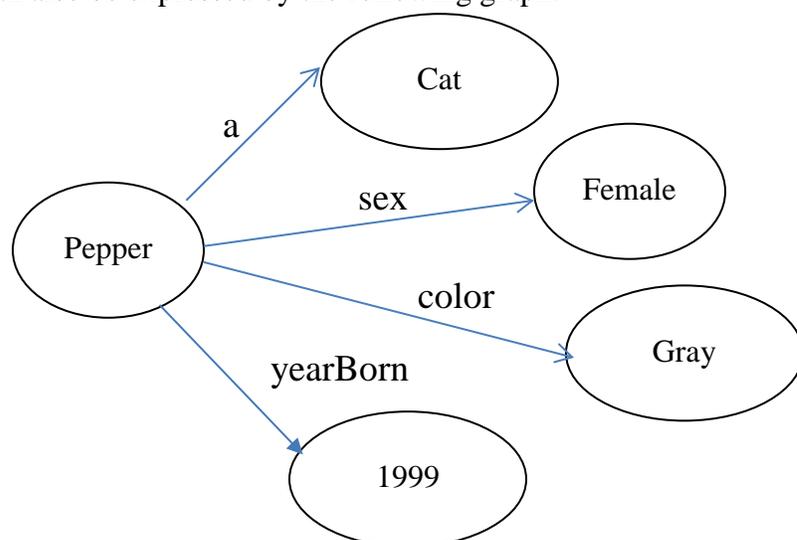
Well, we said RDF is about triples in the previous section. But some experts feel that RDF is more about graphs. An RDF description can be expressed as a set of triples or as a graph. But whether you like graphs or triples better, the fact is that in order for a computer to understand the description it has to be decomposed (serialized) into triples. (Serialization is discussed in the next section) Describing it by a graph may be useful for visualization but it is never necessary. Let’s look at an example. Consider the following description:

*“Pepper is a female, gray cat, born in 1999.”*

This description is expressed by four triples:

- Pepper                    a                    Cat ;
- color                gray ;
- sex                    Female ;
- yearBorn            “1999” .

It can also be expressed by the following graph:



Different brains visualize things differently, some visualize graphs more easily than triples, and others visualize triples more easily. In either case, if you need to commit the above description to RDF, you are going to have to decompose it into triples. If you visualize graphs more easily than triples, create the graph first and then decompose it into triples. If you visualize triples more easily (or as easily) then there is no need to create a graph.

Please note that there is some hand waving in the above example, in the creation of the graph/triples. For example, you can't just make up predicates, like "color" or "yearBorn". They have to come from an established RDF vocabulary.

## RDF Serializations

So you're given the description "*Pepper is a female, gray cat, born in 1999.*" (or the graph shown in the previous section that represents this description), and you might want to turn it into an RDF description. That means turning it into triples. In order for those triples to be consumable by a computer, the triples have to be represented in a commonly understood format that a computer can recognize and process. There are a number of these formats in use; we call them "RDF serializations".

The most straightforward serialization (though not the prettiest) is called N-Triples. It's just raw triples – we'll just call it "triples".

Here, each triple in the RDF description is written out in full –

```

<http://id.loc.gov/resources/bibs/5972243> a bf:Work .
<http://id.loc.gov/resources/bibs/5972243> a bf:Text .
<http://id.loc.gov/resources/bibs/5972243> title "Gone with the Wind" .
<http://id.loc.gov/resources/bibs/5972243> creator "Mitchell, Margaret, 1900-1949" .
<http://id.loc.gov/resources/bibs/5972243> subject "Plantation life--Fiction" .
<http://id.loc.gov/resources/bibs/5972243> subject "Women--Georgia--Fiction" .
<http://id.loc.gov/resources/bibs/5972243> classification "PZ3.M69484" .
<http://id.loc.gov/resources/bibs/5972243> classification "PS3525.I972" .
  
```

We also showed that the above can be reduced to the following:

<<http://id.loc.gov/resources/bibs/5972243>>

```

a          bf:Work , bf:Text ;
bf:title   "Gone with the wind" ;
bf:creator "Mitchell, Margaret, 1900-1949" ;
bf:subject "Plantation life--Fiction" ; "Women--Georgia--Fiction" ;
bf:classification "PZ3.M69484" , "PS3525.I972" .

```

This serialization is called “Turtle” (Terse RDF Triple Language). The rules are simple; as we have shown by example: (1) when the subject is the same for two or more triples, it need not be repeated and instead the predicates/object pairs are listed separated by semicolon with a period at the end of the last triple. (2). When both the subject and predicate are the same for more than one triple, they need not be repeated and the objects are separated by commas.

In addition, literals are enclosed in quotes while resources (discussed later) are enclosed in angle brackets. There is one additional feature that has not yet been illustrated. It deals with blank nodes, which we’ll cover later.

But first, to complete the discussion on serialization we must mention two additional serializations in common use: RDF/XML, and JSON-LD (JSON for Linked Data).

For this resource: <http://id.loc.gov/resources/bibs/11615377> , the following serializations are available:

1. N-Triples: <http://id.loc.gov/resources/bibs/11615377.nt>
2. RDF/XML: <http://id.loc.gov/resources/bibs/11615377.rdf>
3. JSON: <http://id.loc.gov/resources/bibs/11615377.json>

If you have trouble making sense out of any or all three of these, don’t worry, we aren’t going to discuss these any further. We’ll limit discussion of serialization to turtle.

### Properties and Relationships: Literals vs. Resources

Consider the following triple from the “Gone with the Wind” example.

<<http://id.loc.gov/resources/bibs/5972243>>

```

bf:creator "Mitchell, Margaret, 1900-1949" .

```

This triple expresses that the creator of the subject resource is “Mitchell, Margaret, 1900-1949”, which is the object of the triple.

But the object could have been expressed differently:

<<http://id.loc.gov/resources/bibs/5972243> >

```

bf:creator <http://id.loc.gov/authorities/names/n50039200> .

```

Where <http://id.loc.gov/authorities/names/n50039200> is the web page for the LC NAF record for Margaret Mitchell, and is available in RDF (<http://id.loc.gov/authorities/names/n50039200.rdf>). It provides much more information about the object than just the literal. Since it is available in RDF, it is referred to as an “RDF resource”.

*Note: the formal definition of “RDF resource” is not established, but it is often used as just described and we assume this is its meaning, for purposes of this paper.*

So, the object of a triple is either a literal or an RDF resource, as in the above two triples. It is important to note, the subject of a triple is *always* an RDF resource while the object is a literal or RDF resource. Furthermore, the subject *must* be represented by a URI. If the object is an RDF resource, it *may* be represented by a URI *or it may be a blank node* (discussed later).

We mentioned above that the verb in an RDF triple is referred to as a “predicate”, “property” or “relationship”, where the latter two have slightly different meanings and “predicate” is a generalization of those two. Well, “property” is used when the object is a literal. “Relationship” is used when the object is an RDF resource (because it states a relationship between two RDF resource).

## Blank Nodes

A blank node is used as the object of a triple when that object is structured information, rather than either a single piece of information represented as a literal, or an RDF resource represented as a URI.

First we’ll try an intuitive approach to blank nodes, and then a more formal example.

We said that RDF is about triples: subject, predicate, object. Well, the object itself can be a bunch of triples. In the triple, “Pepper is a cat”, the object, “cat” is a single piece of information. But an object may be several pieces of information, each representing a triple. Suppose I want to say “Pepper has sibling pet Shadow, a dark gray cat born in 2000”, then the subject would be “Pepper”, the predicate “has sibling pet” and the object “Shadow, a dark gray cat born in 2000”. This object is itself a set of triples. The entire statement can be represented in triples as:

Pepper	hasSiblingPet	xyz .
xyz	a	Cat ;
	name	shadow ;
	color	darkGray ;
	sex	“Male” ;
	yearBorn	2000 .

in this example, “xyz” is called a blank node because its name is irrelevant. Its purpose is to serve as the object of one triple and the subject of a set of triples, and it serves to connect the first triple to the remaining triples. it could have been called anything; for example you could change “xyz” to “abc” (in both places above) and it would have exactly the same meaning.

Now a more formal example...

For the triple in the previous section:

<<http://id.loc.gov/resources/bibs/5972243> >

bf:creator

<http://id.loc.gov/authorities/names/n50039200>>

The URI <http://id.loc.gov/authorities/names/n50039200> representing the object is an RDF resource, represented by a URI. What that means is, if you follow that link, you'll get an RDF description of the object. In this case, the URI represents the person, Margaret Mitchell, and the RDF description you will get is at <http://id.loc.gov/authorities/names/n50039200.madsrdf.rdf> (or one of the other serializations). That's more information than just the string "Mitchell, Margaret, 1900-1949"; it included structured information parsing out her first and last names and dates of birth and death.

Before we discuss blank nodes, since the above example is probably too complicated to fully appreciate – let's construct a simpler, fictitious example, just for the sake of illustration.

Let's say <http://www.example.com/people/margaretMitchell> is an RDF description of Margaret Mitchell, including her first and last name, dates of birth and death, and places of birth and death.

Thus,

```
<http://www.example.com/people/margaretMitchell>
    a                Person ;
    firstName        "Margaret" ;
    lastName         "Mitchell" ;
    yearBorn         "1900" ;
    yearDied         "1949" ;
    placeOfBirth     "Atlanta" ;
    placeOfDeath     "Atlanta" .
```

Further assume that <http://www.example.com/books/goneWithTheWind> is an RDF description of the book, *Gone with the Wind*.

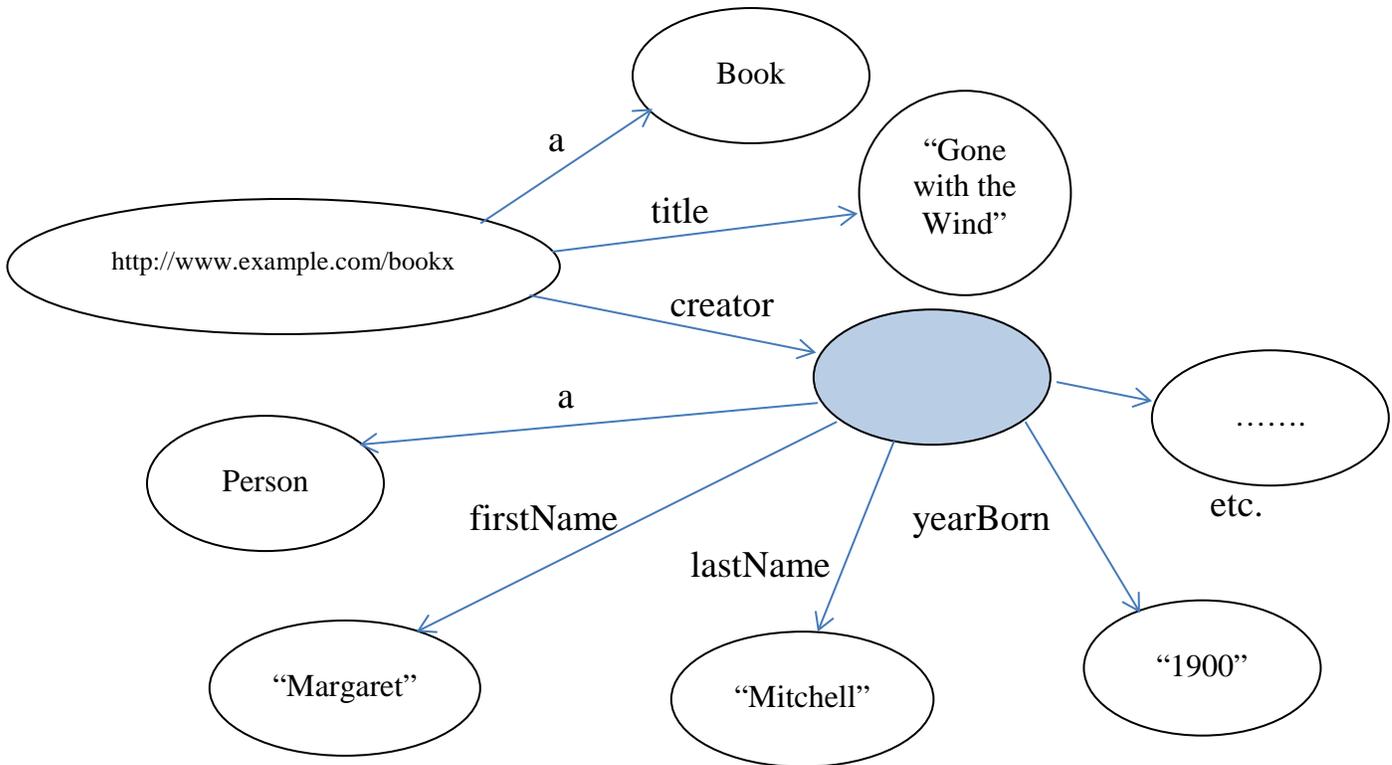
Thus:

```
<http://www.example.com/books/goneWithTheWind>
    bf:creator       <http://www.example.com/people/margaretMitchell>.
```

As in the previous section, here we have an example of a triple where the object is an RDF Resource, represented by a URI. This is the linked data approach, where all of the information conveyed by that resource is external and you get to it by following a link.

In contrast, the object could instead be expressed with the data internal to the description without a URI – it's right there, with no link to follow.

Let's illustrate this with a graph ...



In this graph, <http://www.example.com/bookx> is declared to be a Book, its title is “Gone with the Wind” and it has a creator expressed by a predicate whose object, represented by the *blank* circle -- hence “blank node” -- in blue.

Remember, we are going to use Turtle serialization whenever possible, but it is useful to understand that if we were to use N-Triples instead of Turtle to represent a blank node, that node would be given an identifier (as “xyz” in the informal example above) – not a URI but a simple node identifier. That node, which is the object for arrows pointing to it, becomes the subject for the outward arrows, and the purpose of the node identifier is used to identify the subject of these new triples.

But enough said about N-Triples. By serializing with Turtle we avoid that whole mess with node identifiers. With N-Triples, to serialize the blank node, we now introduce the last rule: *Blank nodes are enclosed with square brackets.*

So the above graph is serialized as:

```

http://www.example.com/bookx a
  title
  creator
    a
    firstName
    lastName
    yearBorn
  Book ;
  "gone with the wind" ;
  [
    Person ;
    "Margaret" ;
    "Mitchell" ;
    "1900" - ] .
  
```

## Appendix B. BIBFRAME Editor Issue Log

Submitted by: \_\_\_\_\_

Date:

Profile and template:

<input type="checkbox"/> Monograph	<input type="checkbox"/> Serial	<input type="checkbox"/> Notated Music	<input type="checkbox"/> Cartographic	<input type="checkbox"/> Blu-ray/DVD	<input type="checkbox"/> Sound Recording
<input type="checkbox"/> Instance		<input type="checkbox"/> Work		<input type="checkbox"/> Work, Instance	

Issue #	Fields Needed + RDA Instruction/Sub-Instruction	Fields Not Needed
1		
2		
3		

General Functionality (Check Box Here and Describe Specific Issue Below):

<input type="checkbox"/> Entering Data	<input type="checkbox"/> Saving Data	<input type="checkbox"/> Deleting Data	<input type="checkbox"/> Retrieving Data
--	--------------------------------------	--	--

Further Description of Above Issue, or Other Issue(s):

Issue #	Description
1	
2	
3	
4	
5	
6	
7	