2015-2016 Technical Services Committee Annual Project:
MarcEdit for Database Maintenance: A Select Primer

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I. GENERAL INTRODUCTION TO MARCEDIT

MarcEdit is a software product that can be used to edit MARC records. It was developed by Terry Reese, head of Digital Initiatives at the Ohio State University Libraries. It is available to all libraries as a free download at [Terry Reese's website.](#) While you can use MarcEdit to edit records one at a time like the Voyager cataloging client, it is its ability to perform the same change or many different changes within groups of records that makes it such a useful tool. This ability to do batch processes means that catalogers have a powerful and time-saving tool to use to enhance our catalog records.

MarcEdit is a suite of tools, not all of which are needed for performing basic editing tasks. MarcEditor is the primary tool you will need to edit bibliographic records. MARC Tools is primarily for converting to and from different metadata formats.

The terminology that MarcEdit uses may be obscure to some librarians. A machine-readable or "raw" MARC record is not like the human- or eye-readable MARC records that we are used to seeing in the OCLC Connexion Client or in the Voyager cataloging client. A "raw" MARC record looks like this:

```
4500001000700000000800410000703500230004803500120007104000240000
830450009001070480015001160490009000131090001800140092001900158
100004000177240005400217245008200271260000370035330002200390490
000320041265000560044474000220050095000650052227534378061 3q190
01993nyuzzz         n    N/A d  a(OCoLC)ocm03970151  9D388157
aMANcMANdm.c.dICW  au8v5  asa02asb01  aICWD  aM353.B13b.I5
a785.737bB122k1 aBach, Johann Sebastian,d1685-
1750.10aInventions,mharpsichord,nBWV 787-801;oarr.10a15
terzetti :b(after 3-part inventions) : for two violins and
viola /cBach.  aNew York :bE.F. Kalmus,c[19--]  a3 parts ;c31
cm.0 aKalmus chamber music series 0aString trios (Violins (2),
viola), ArrangedxParts.01aFifteen
terzetti.10b33124001790996cMSXd785.737
```

Image of a raw MARC record

While some parts of record in this format are readable by the human eye, others are not. In order for a person to read and edit the MARC record, it must be "broken." A "broken" MARC record thus looks like something much more familiar:

```
=LDR  00837ccm  2200253Ia 4500
=001  275343
=008  780613q19001993nyuzzz\\\\\\\\\\n\\\\N/A\d
=035  \\$a(OCoLC)ocm03970151
=035  \\$9D388157
=040  \\$aMAN$cMAN$dm.c.$dICW
=045  \\$au8v5
=048  \\$asa02$asb01
=049  \\$aICWD
=090  \\$aM353.B13$b.I5
=092  \\$a785.737$bB122k
=100  1\$aBach, Johann Sebastian,$d1685-1750.
=240  10$aInventions,$mharpsichord,$nBWV 787-801;$oarr.
=245  10$a15 terzetti :$b(after 3-part inventions) : for two
violins and viola /$cBach.
=260  \\$aNew York :$bE.F. Kalmus,$c[19--]
=300  \\$a3 parts ;$c31 cm.
=490  0\$aKalmus chamber music series
=650  \0$aString trios (Violins (2), viola), Arranged$xParts.
=740  01$aFifteen terzetti.
=950  10$b33124001790996$cMSX$d785.737
B122k$k930118$mWCL$nBML$s26$tBX
```

Image of a Broken MARC Record

MARC records as they appear in the Voyager cataloging client and in the OCLC Connexion Client are already displayed in the "broken" form, even though that terminology is not used there.

The primary editing functions are in the MarcEditor tool. MarcEditor has word processor-like find and replace functions in a couple of varieties. There is a universal find and replace, which will perform the changes on a text string that it finds anywhere in the file. There also are "Edit field" and "Edit subfield" tools; these will find and replace text just like the universal find and replace does, but can be limited to particular MARC fields or subfields as needed.

Yet another way of editing records is by using regular expressions, sometimes shortened to "regex." A regular expression is a special text string for describing a search pattern. Those with some experience with computer programming languages may have some knowledge of regex. Otherwise, consult with CARLI staff or the larger MarcEdit user community for help in devising a regular expression that will meet your needs.

It is important to remember that the MarcEdit tools described here can only copy your MARC records and manipulate those copies. The corresponding records in your library's database will not change until you submit the records you have edited to CARLI for uploading and replacing. This is a handy feature, because it allows a cataloger to edit and then check the results of the edit to ensure there were no unintended consequences. In other words, you could do a lot of damage to your records in an attempt to edit them, but nothing really happens to them in Voyager until you are sure the edits made are what you intended and you submit them to CARLI for uploading. CARLI staff acknowledge this danger in the warning that appears in the MarcEdit section of the Voyager Clients and Tools web page:

"IMPORTANT NOTE: Any errors made to bibliographic, holdings, or authority records using any of MarcEdit are the responsibility of the library to correct locally. The CARLI Office will NOT restore any database because of errors made to records by imprudent or incorrect use of this tool. By installing and running MarcEdit, the library accepts this policy."

A Typical Workflow for Editing a Group of Records in MarcEdit
1. Identify and gather records that need to be edited.   (See Part II below, "Ways to Identify/Gather Records.")
2. Since the records you get will be "raw" MARC records (.mrc files),   use MarcBreaker to "break" them into an editable form (.mrk files).
3. Use the various editing tools in MarcEditor to make the desired changes to your records.
4. Save the file in MarcEditor.
5. Convert the "broken" records back into regular MARC records   (i.e., convert from .mrk to .mrc) using MarcMaker.
Steps 6-8 pertain to I-Share libraries only
6. File a Work Request Online (WRO, pronounced *roe*) requesting that CARLI staff replace the MARC records in Voyager with the corresponding (now edited) records in the file.
7. Transfer the edited MARC records file to CARLI's FTP site so that CARLI staff can access it.
8. CARLI staff will upload and replace the records, and will notify you when that has happened.

II. WAYS TO IDENTIFY/GATHER RECORDS

A. For I-Share Members: Extract Records from Voyager Using Access Reports and WROs

Step 1. Identify the records using Access reports

In Access, you will find a list of queries in the left-hand column. Some are "prepackaged" by Ex Libris, but if you have linked the CARLI_Reports_2015.mdb file, you will also have access to queries written by CARLI staff and I-Share colleagues. You may or may not find a query that describes the set of records you wish to edit.

   a. **If you find a query that matches what you want**, double-click on it. The results appear on the right and will include a list of records by ID number (Bib ID or MFHD ID). Export the results and open them in Excel to examine and/or manipulate the list. (For further details about using Access, view CARLI's Access training videos.)

   b. **If no pre-existing query listed in Access exactly describes what you need**, file a WRO to ask CARLI staff to write a query according to your specifications.
   - Under *Work Request Type*, choose *Ad Hoc (Customized) Report*.
   - Under *Notes*, describe your desired record set.
        Examples:
        - Find bib records where 100 $d, 600 $d, or 700 $d contains <ca.>
        - Find bib records where 130 $a or 630 $a is <Koran>

   CARLI staff will then construct a custom-made query for you and notify you when the query results are ready. Those results will be delivered either through email or to your I-Share library's FTP site as an .xls, .xlsx., .xml, .txt, or .csv document.

Step 2: File a WRO for CARLI to extract the records

To request a file of your designated records from CARLI, submit a WRO.
- Under *Work Request Type*, choose *Other*.
- Note that the way CARLI extracts records from the catalog database is via record IDs. So, to designate which records you want, copy the record IDs into a .txt document (Notepad) and upload it to your library's I-Share FTP site.
   For further details about using WROs, see http://www.carli.illinois.edu/using-work-requests-online.

Step 3: Retrieve your records

CARLI notifies you when your file is ready. Get it from your library's FTP site. It is a .mrc file. Now you are ready to import that file into MarcEdit.

**B. For All CARLI Members: Obtaining Records from Vendors**

Sometimes a vendor makes sets of MARC records available to libraries or library consortia. When your library licenses a new collection, inquire! For example, libraries that subscribe to ProQuest Dissertations & Theses can obtain title-level MARC records for their institution's online dissertations and theses. In all cases, a library will need to obtain availability information from the vendor and follow their instructions. Some vendors, such as ProQuest, will send MARC record sets by email attachment; others provide a website from which you can download the appropriate batch of MARC records. While some vendors provide MARC records free of charge, other vendor records can be quite costly, and/or come with restrictions about whether their MARC records must be restricted to a library's local catalog, can be shared through a consortial database, or promoted to WorldCat. Record sets, such as the one for eHRAF World Cultures, are also available to OCLC member libraries through OCLC WorldShare Collection Manager. In all cases, the quality of the records you receive in batch should be evaluated before you load them into your catalog. MarcEdit functions can help.
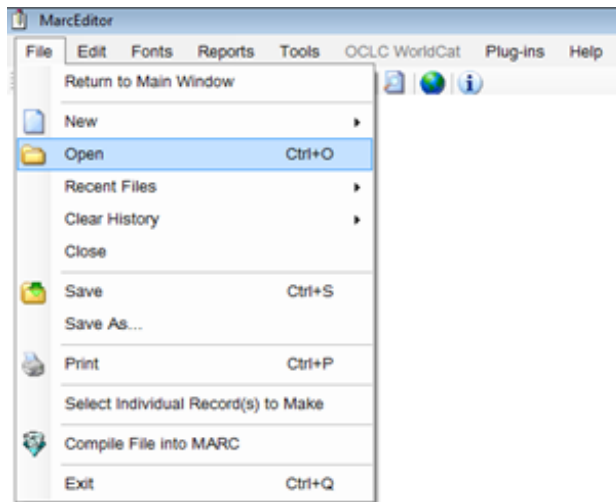
III. PROJECT DEMONSTRATIONS

IIIa. REPLACING THE PROXY SERVER URL IN A BATCH OF BIB RECORDS USING MARCEDIT

This tutorial begins assuming that you already have a batch of MARC records saved to your computer that you would like to edit.
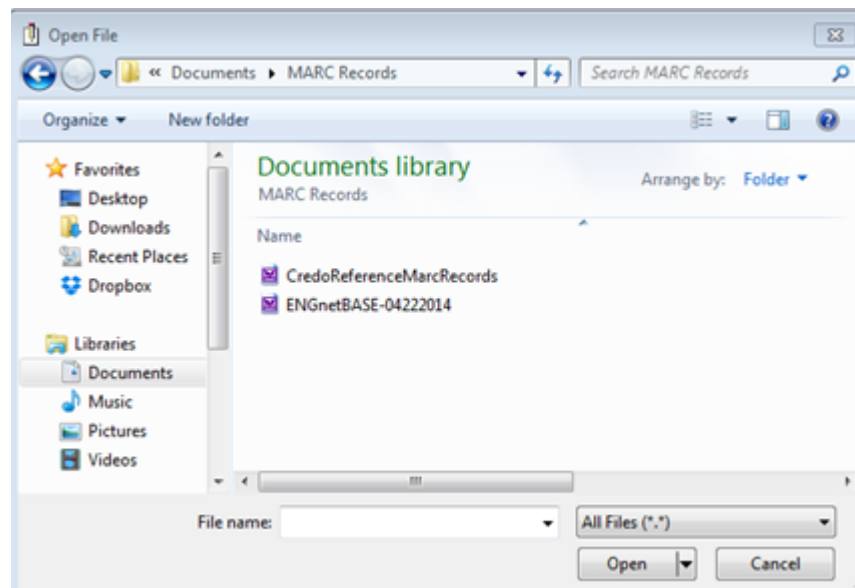
1. Open MarcEdit and select MarcEditor.
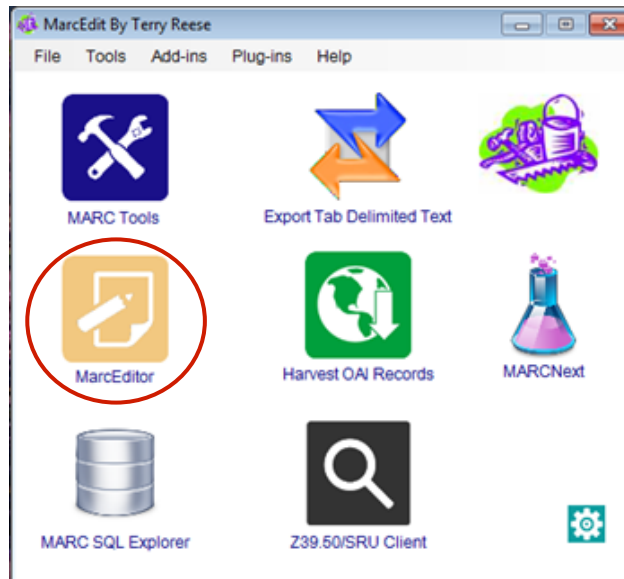
2. In MarcEditor, go to "File" and select "Open."

3. Navigate to the file that contains your batch of MARC records and select Open. (You may need to select "All Files" in order to see your batch of records.)

4. Now is a good time to check to see how many proxy URL changes you will be making in your batch of records. MarcEdit can tell you how often your proxy URL appears in your batch by going to "Edit" and then selecting "Find."
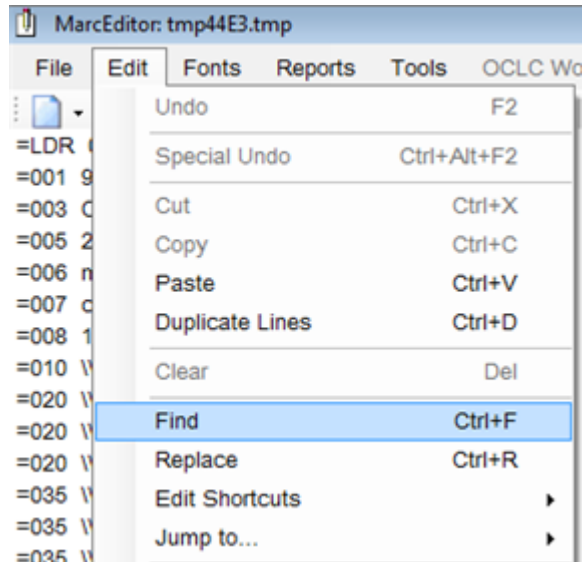
5. In the Find pop-up window, paste in your proxy URL in the "Find what:" box and then select "Find all."
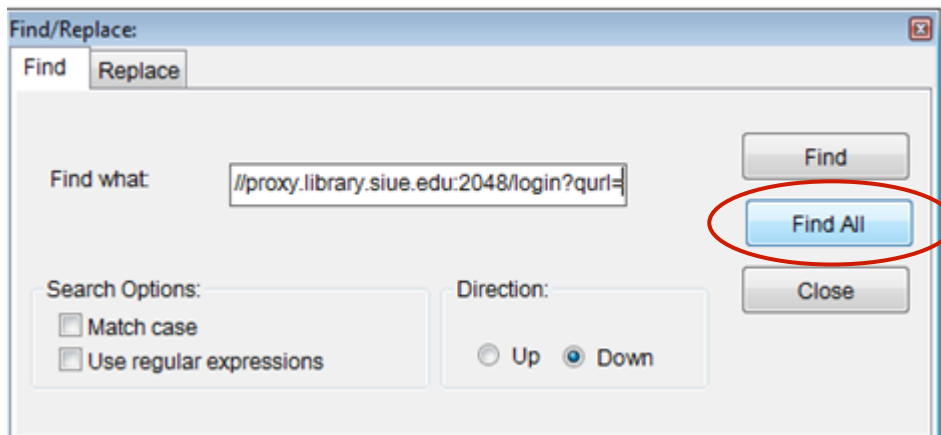
6. The "Find all results" will then outline the total number of times the proxy was found and a more detailed list of its location. In this example, you can see that you will be editing 85 instances of the URL proxy.
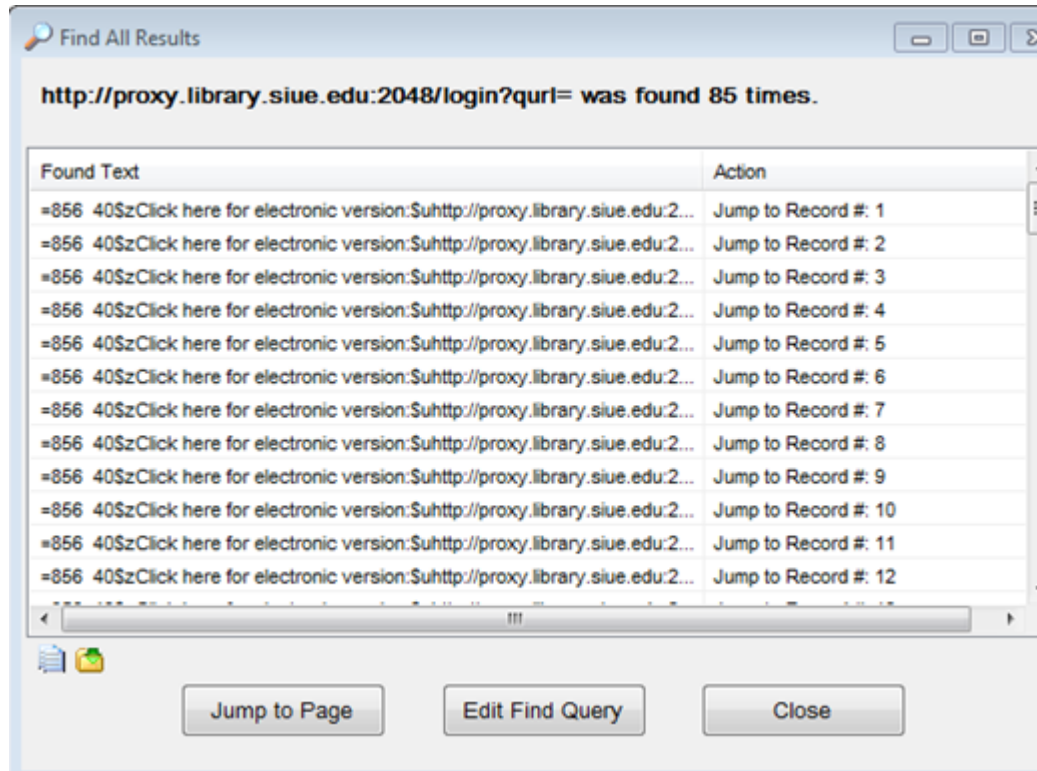

7. Now that you have your batch of records open in MarcEdit, identify the proxy URL that you would like to change and the new proxy. In this case:
   a. Old proxy: http://proxy.library.siue.edu:2048/login?qurl=
   b. New proxy: http://proxy.library.awesome.edu:2016/login?qurl=

8. Go to "Tools" and select "Edit Field Data."
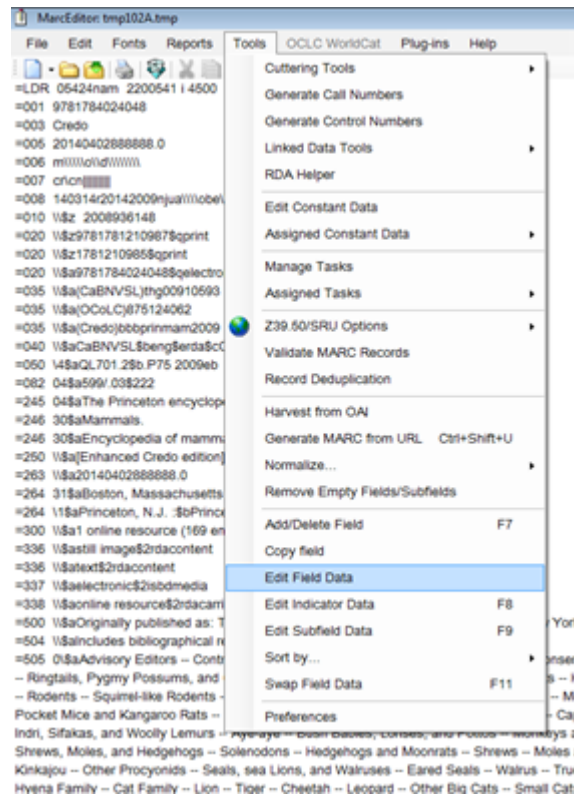
9. In the Edit Field Data pop-up box, select the 856 in the "Field" option. Then copy and paste your old proxy into "Find" and the new proxy into "Replace."
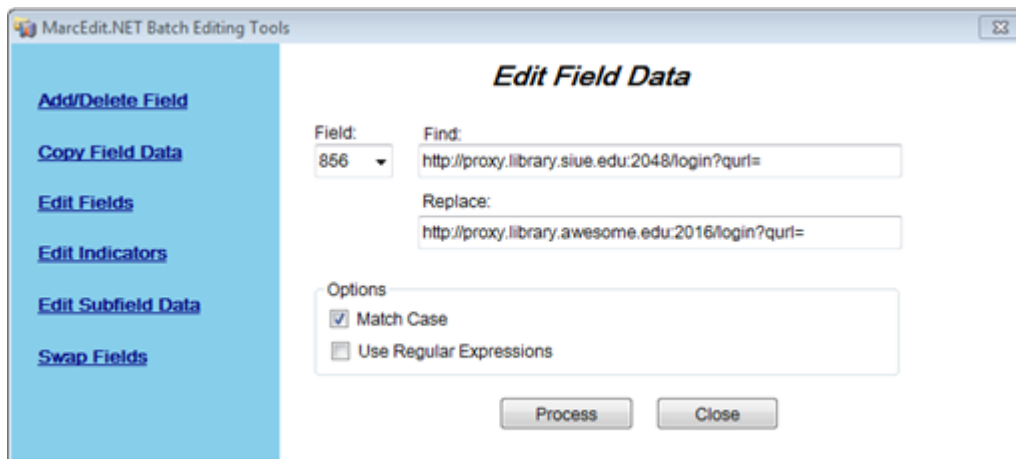
10. Select "Process". A pop-up window will appear, indicating the number of modifications that have been made. You can compare this number with the number of records generated in step 6 as a double check.
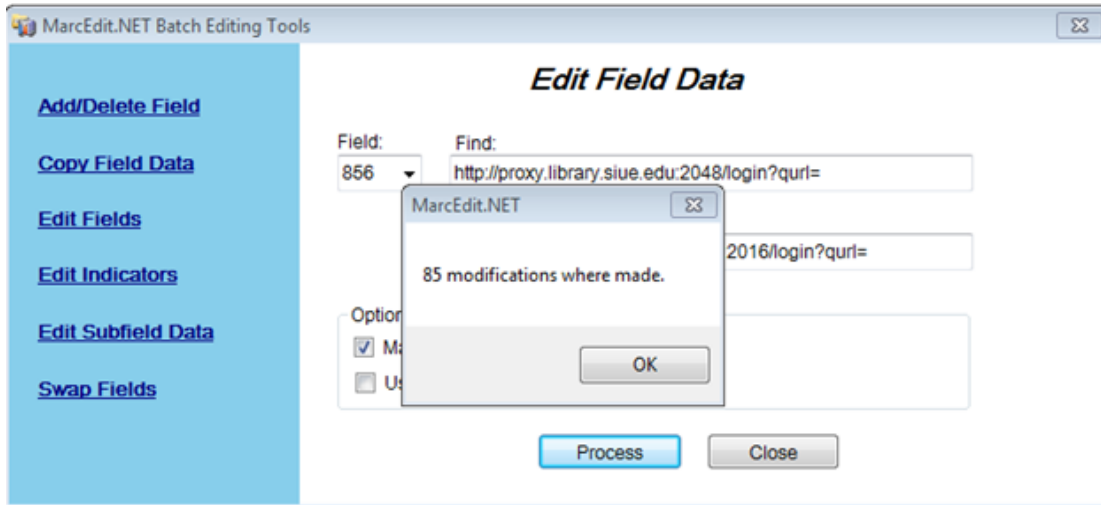

11. Once you have looked over and are satisfied with your edited records, go to "File" and click "Save as" and name your new batch of records. In this case, it will be named "CredoBatch1". If you will notice, the edited MARC file is in the "Save as type" which is a MARC Text File (.mrk). In order to add this batch of records into the catalog, they need to be converted back to the .mrc format. Luckily, MarcEdit does this quickly and easily.
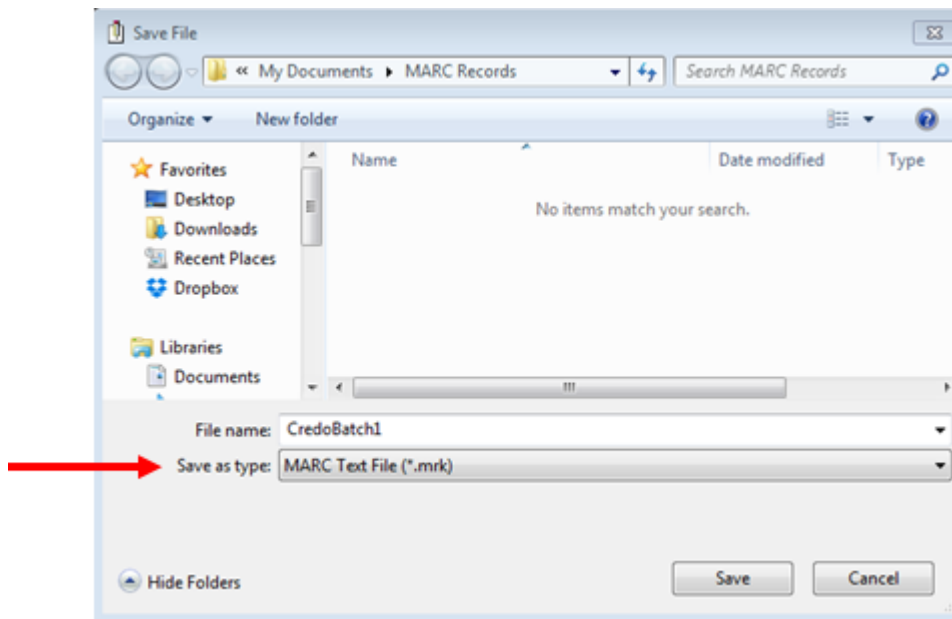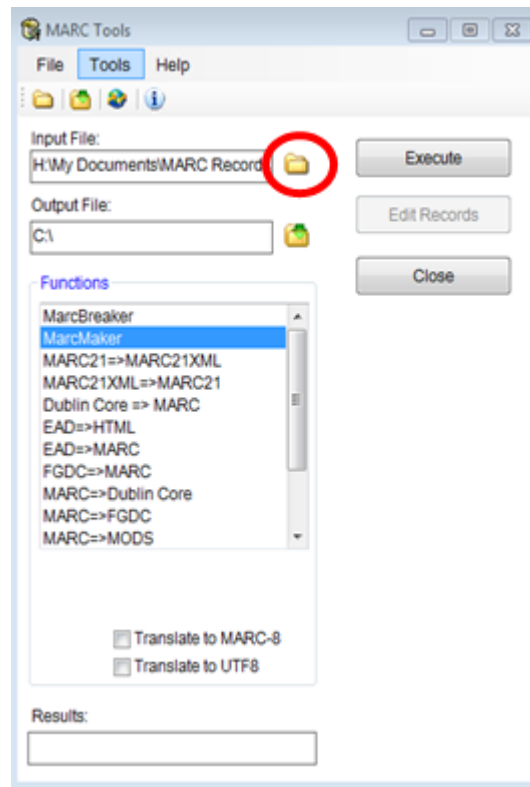

12. Once you have saved your edited batch of records, close out of the MarcEditor. You will now be at the main menu. Select "MARC Tools."
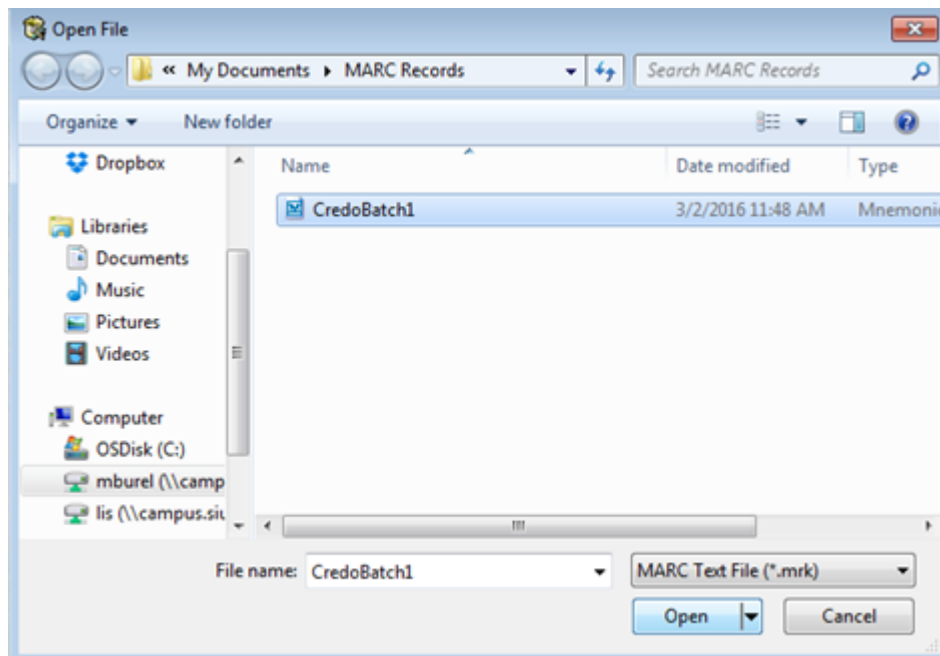
13. In the MARC Tools Menu, select the "MarcMaker" option.
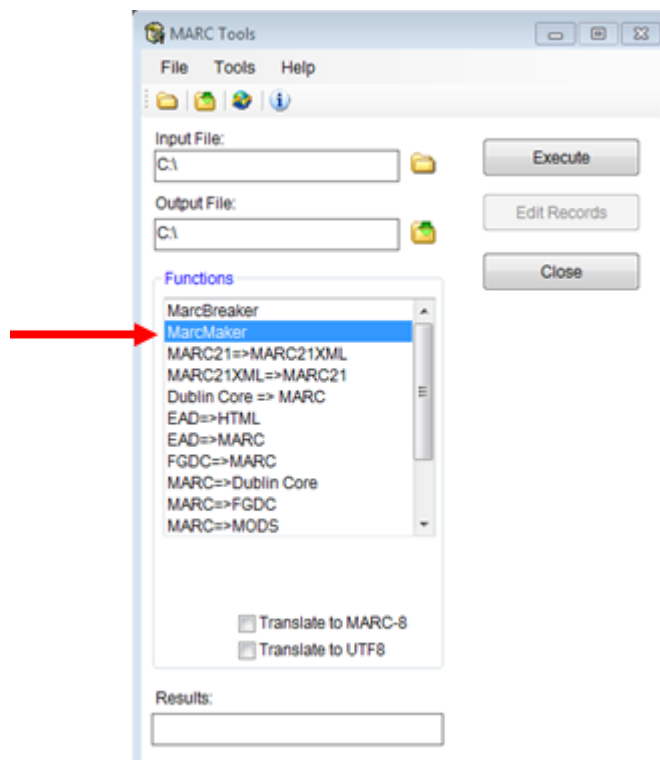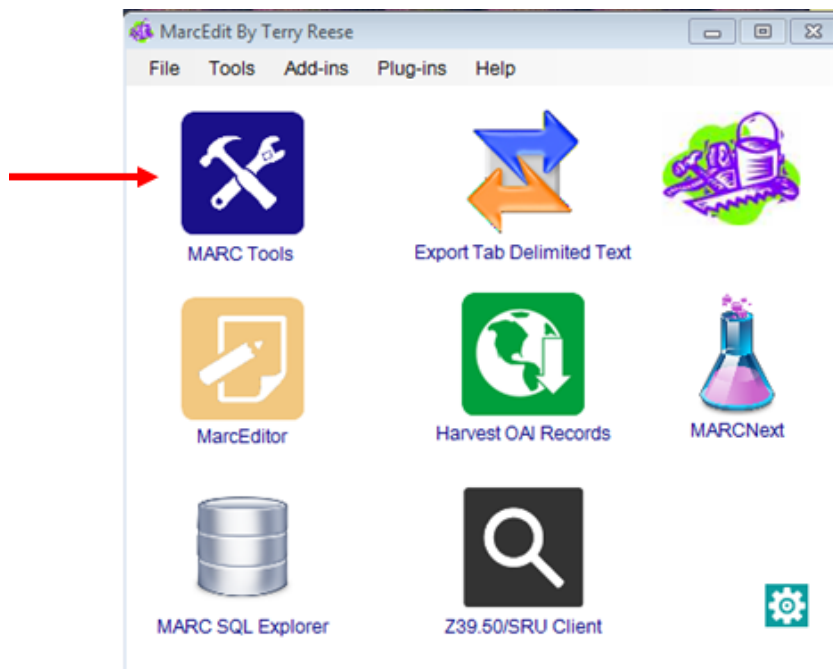
14. For the "Input File" select the file icon to the right of the text box.

15. Select your edited batch of records and click "Open". In this case, that is the "CredoBatch1" created in step 11.

16. Next, select the file icon next to the "Output File." In this step, you need to name your new file. If you notice in this save file pop-up window, the "Save as type" is the MARC files (.mrc), which is the format needed to load records into Voyager. Once you have named your new file and selected its location, click "Save."
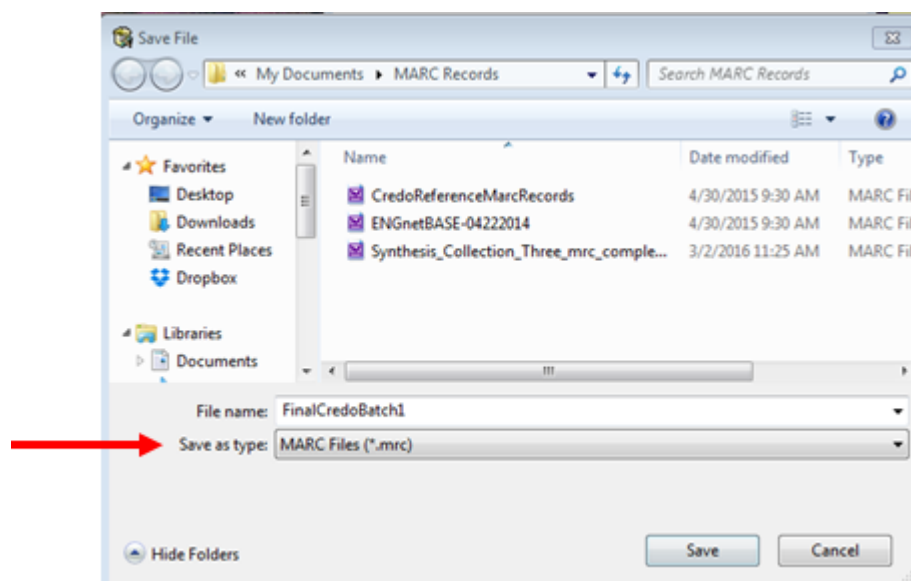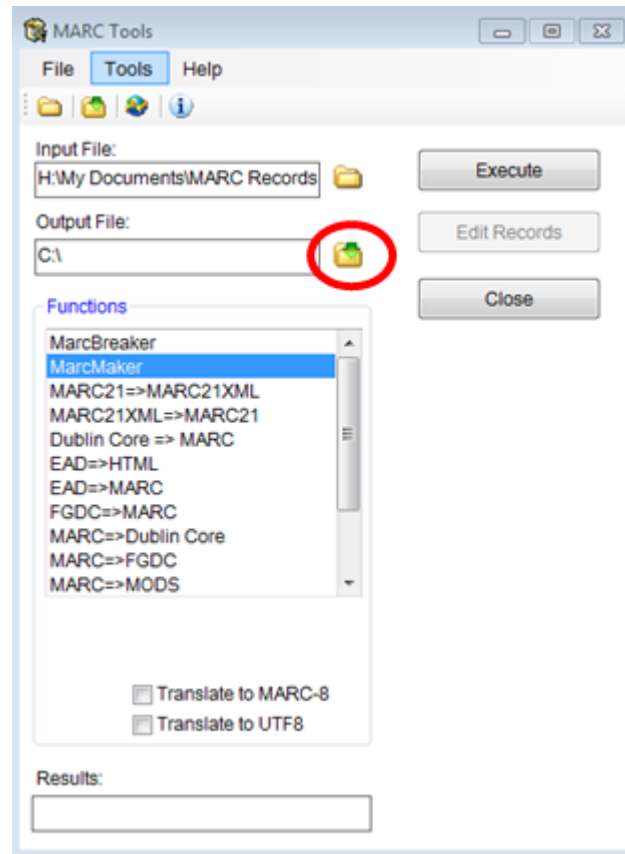
17. Now you are ready to convert your batch of files to the MARC Files (.mrc) format. Click "Execute". Once you have done this, the "Results" text box at the bottom of the page will show the number of records processed.
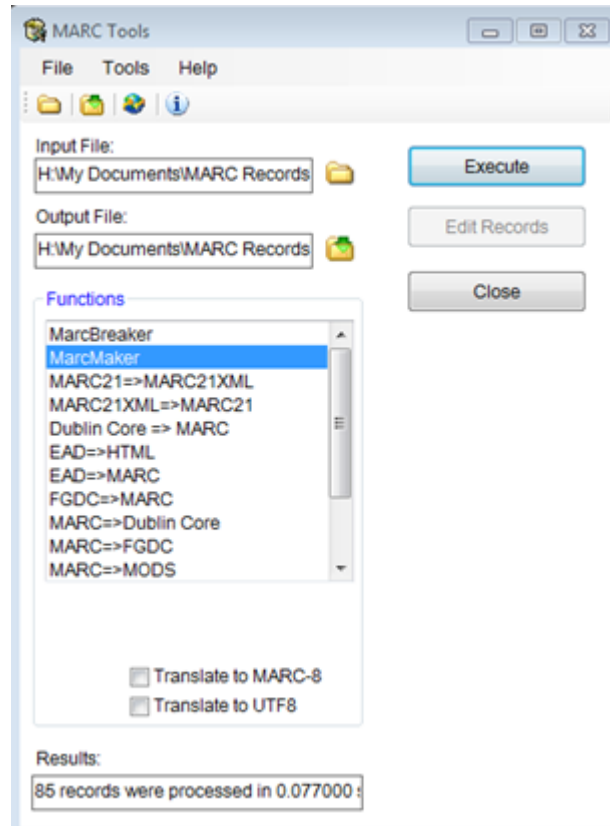

18. You should then be able to find your saved batch of edited MARC files (.mrc) records to be loaded into your catalog.

Part IIIb. USING MARCEDIT TO MAKE AN RDA-MANDATED CHANGE TO AN AUTHORIZED ACCESS POINT

This search will correct a change that was mandated by RDA: changing "ca." to "approximately" in an authorized access point. If you know of a specific access point that needs to be changed, you could edit all instances of it directly, one by one, in the cataloging client; or you could use the "Batch correction request" feature of Gary Strawn's Cataloger's Toolkit.

However, you most likely do not know which access points need to be changed. A way to find and edit all the access points in one operation is to submit an Ad Hoc WRO to CARLI requesting all records with 100, 600, and 700 MARC fields that contain "ca." in $d. When you receive a file of these records, you can then use the MARC Editor function to find all instances of "ca." and convert them to "approximately."

1. Retrieve the MARC files from the CARLI ftp server, and copy them at a location where you can find them. Open MarcEdit and select Marc Tools. Under "Input File" find the file of MARC records from CARLI. Make sure the file suffix is ".mrc." This indicates it is a standard MARC file. Under "Output File" copy over the file name and make sure the file suffix is ".mrk." This indicates a "broken" MARC file that you can read. Make sure "MarcBreaker" is highlighted, then click "Execute" to create the broken file.
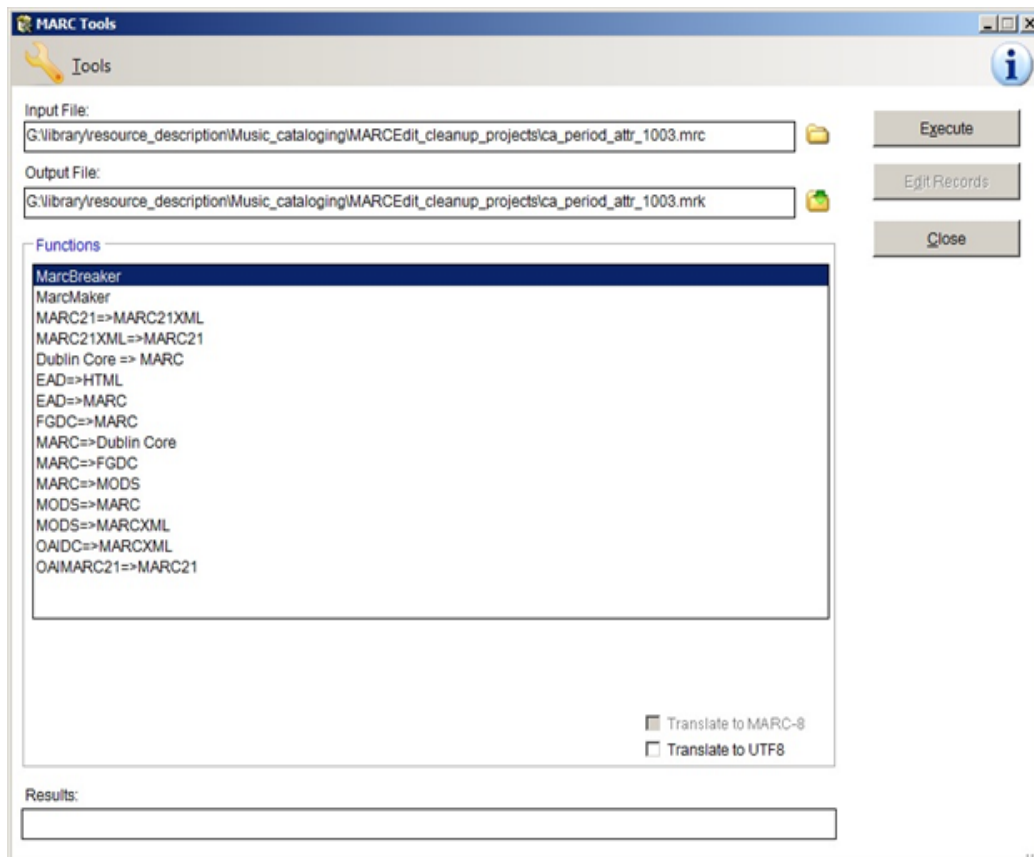
Alternately, you can double click on the file of MARC records, and MarcEdit will bring up the MARC Tools window with the file names already filled in. Then click "Execute."

2. Next, you need to open the broken file in the MarcEditor. To do this, select "MarcEditor" from the main menu, choose File > Open or Ctrl-O, then find and open the broken file.

It is helpful before editing to scan the contents of the file for instances of the text you want to change. To do this, choose Edit > Find or Ctrl-F, enter the text to search, then choose "Find all":
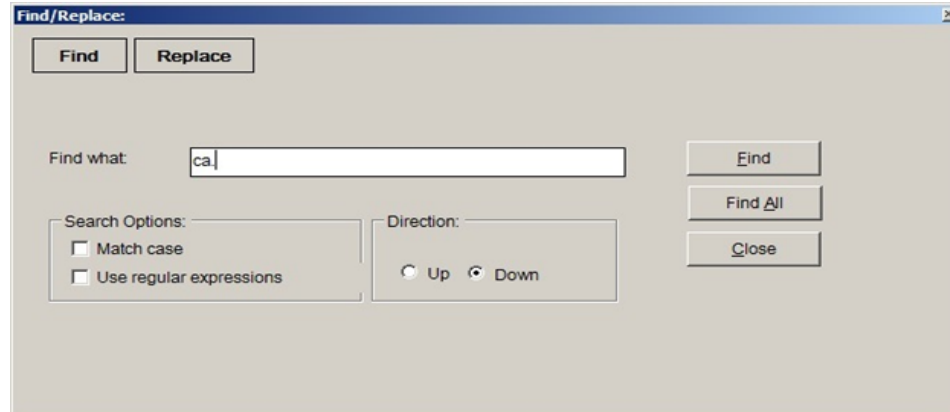
In this example, in addition to dates such as "ca. 1535-1582" there are also such dates as "b. ca. 1777." To avoid inadvertent replacement errors, we may want to directly edit authorized access points like that one in the Voyager cataloging client, and then have CARLI re-do the search.
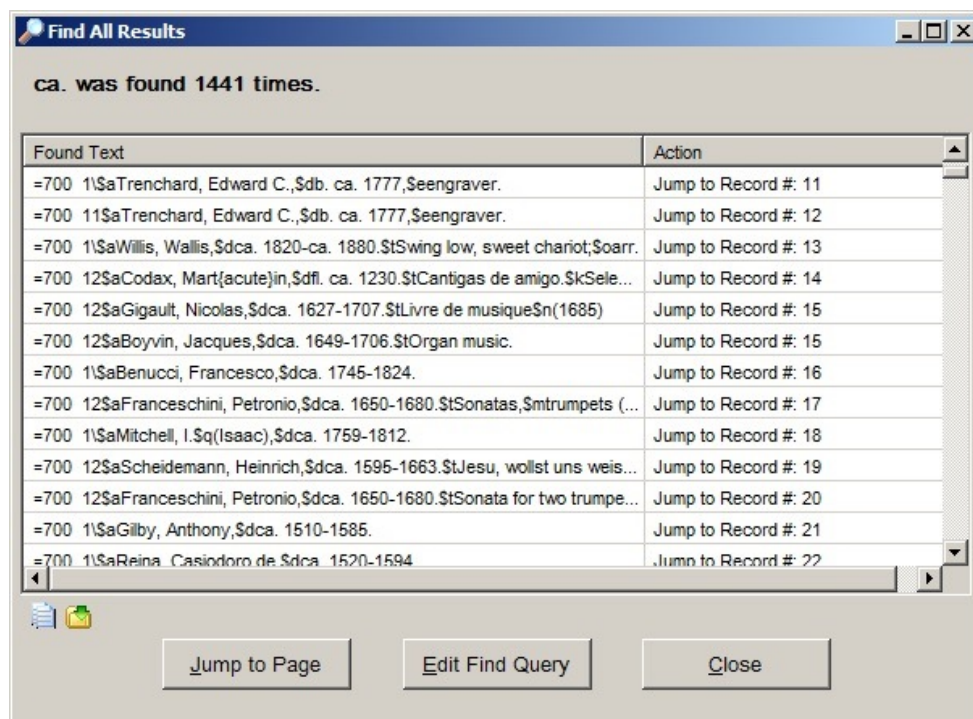
3. Once you are sure that a direct replacement of your text will work correctly, make the change by using the "Edit Subfield Data" function: Tools > Edit Subfield Data or <F9>. Enter the data to be changed in "Field Data" and the replacement text in "Replace with" and choose "Replace text."
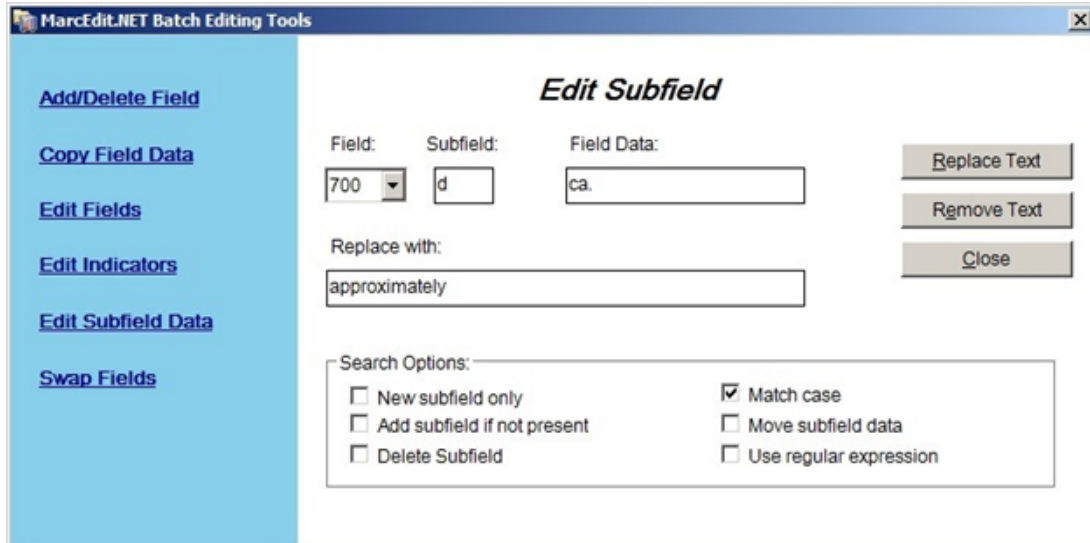
If you want to replace a more complex pattern, and if you can get help in devising a regular expression for your replacement, enter those regexes in the two boxes, and check the box by "Use regular expressions." In this example, you will need to repeat this process for fields 100 and 600.

It is important to analyze where in a field or subfield the data you want to replace will appear. In this case, "ca." is meaningful only in dates, so we can limit the replacement to $d. If the text you want to replace could appear in more subfields, you may want to choose the "Edit Field Data" function:
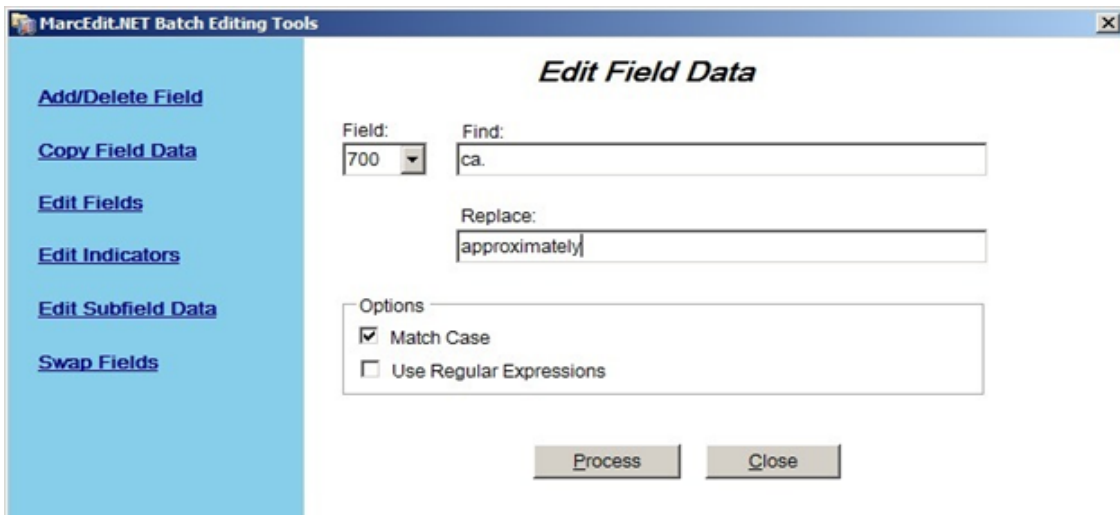
This will replace the specified data in any part of the field. In this example, replacing "ca." with "approximately" anywhere in a 700 field would likely cause errors; for instance, the authorized access point "Smith, Monica." would be changed to "Smith, Moniapproximately." Limiting the edit to the appropriate subfield will avoid errors such as these.

4. You can "Find all" again and look to see if the replacements you made are correct. If you find errors, you can always close the files and not save the changes, and devise a different search and replacement strategy.

5. When you are sure that the replacements you made are what you want, save the .mrk file: File-->Save, or Ctrl-S.

6. The next step is to convert the edited broken file back into a regular MARC file. Open MarcEdit and select Marc Tools. Under "Input File" find the broken file you edited. Make sure the file suffix is ".mrk." Under "Output File" copy over the file name and make sure the file suffix is ".mrc." Make sure "MarcMaker" is highlighted, then choose "Execute" to create the regular MARC file.
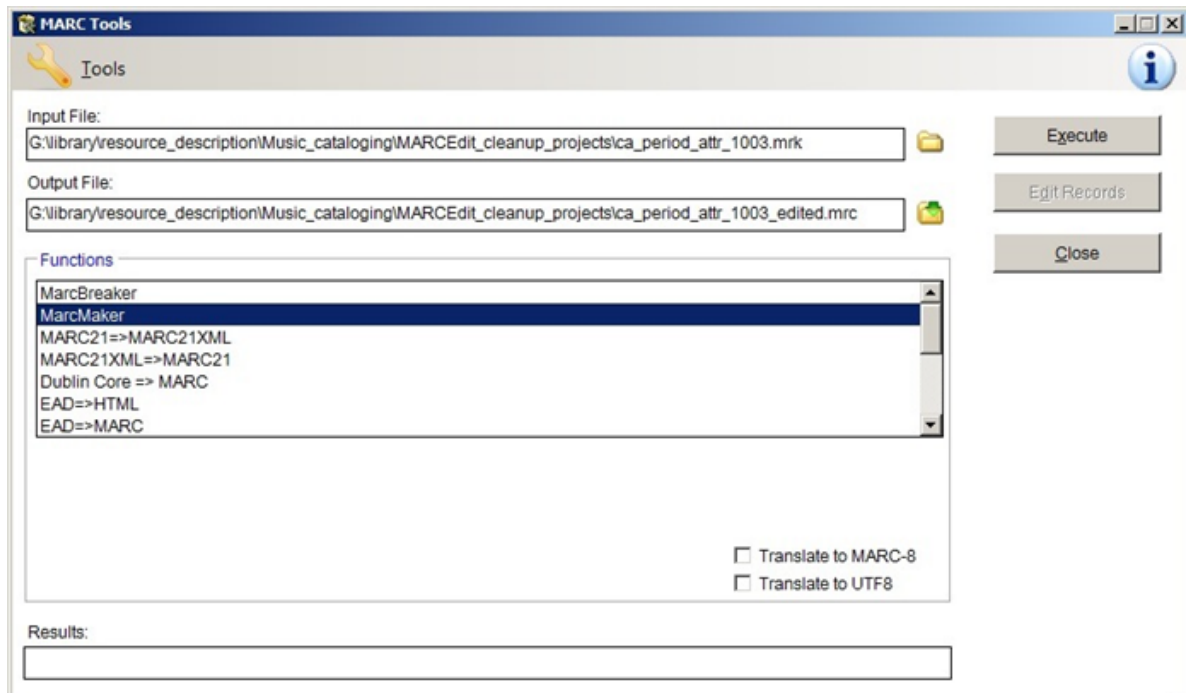
It is a good practice to rename the new .mrc file, in order to avoid confusion about the status of the contents.

7. The last step is to submit the edited .mrc file to CARLI. Usually you need to place it the CARLI ftp server, and notify CARLI support that the edited file is ready to be loaded.

IV. PROJECTS WELL-SUITED FOR MARCEDIT

1. Adding a new MARC field to a batch of bibliographic records, such as a locally-relevant title added entry, local subject, or bibliography note:
   a. 740 0\$a Department of Special Education test kits. $5 INS
   b. 690 \\$a Illinois State University $v Department of Special Education test kits.
   c. 590 \\$a Nacke-Savoie Collection.
   d. 504 \\$a Includes bibliographical references and abstract.

2. Adding a new subfield to a batch of bibliographic records, such as a public note about location or access:
   a. 856 40 $3 Taylor & Francis Online $u http://libproxy.lib.ilstu.edu/login?url=http://www.tandfonline.com/loi/wccq20 $z Available on ISU campus or via ISU ULID

3. Replacing a text string in a portion of a subfield with another text string in the same subfield
   a. For example, replace your institution's former proxy string with its current one within the 856 $u

4. Replacing the text in one subfield with new text
   a. For example replace 700 $e "advisor" in ProQuest MARC records for dissertations and theses with the the RDA relator term "degree supervisor"

5. Copying the text in one field (710) to another field (690)

6. Building a new field from one or more other existing fields, for example build a URL by adding the content of the 001 field to a base domain name, i.e., https://mylibrary.edu/resolver/{001}

7. Deleting all fields with a particular MARC tag completely (791 in ProQuest MARC records for theses or dissertations)

8. Deleting all fields with a particular MARC tag *only if* they start with a particular character string, such as the field containing the ProQuest institution code in records for theses and dissertations
   a. 790 \\$a 0092

9. Changing indicator values for a particular MARC tag

10. Applying constant data

11. Record deduplication

12. Validating authorized access points (1xx/7xx or 6xx). This function searches a batch of records for unauthorized access points and suggests the authorized alternative. (See http://blog.reeset.net/archives/1775.)

13. The RDA Helper feature (available from MarcEdit > Tools or MarcEditor > Tools) also supports the expansion of abbreviations, offering a list from which you can select any or all; the addition of the 336, 337, and 338 fields; among others.

Part V. FURTHER READING AND STUDY

Web Resources

The following are helpful resources for learning more about using MarcEdit:

MarcEdit Development - http://marcedit.reeset.net/

> A good place to get started. Includes MarcEdit software downloads, recent posts from Terry's Worklog, technical information, webinars, and other instructive information.

MarcEdit LibGuide (University of Illinois) - http://guides.library.illinois.edu/MarcEdit

> Detailed user guide for MarcEdit, including screenshots and information about some of the non-MARC features of MarcEdit, including the OAI harvester and linked data tool.

MarcEdit Listserv - https://listserv.gmu.edu/cgi-bin/wa?A0=marcedit-l

> Sign up to join this discussion list for users of MarcEdit, which is great for getting project-specific advice and learning about how others are using MarcEdit. Terry Reese is a regular contributor.

MarcEdit resources (CARLI) - https://www.carli.illinois.edu/products-services/i-share/cat/secure/marcedit-resources

> A collection of MarcEdit resources on CARLI's website. Includes a five-part webinar series given by Terry Reese for CARLI in 2015 and materials from other MarcEdit programs and workshops.

MarcEdit YouTube channel - https://www.youtube.com/playlist?list=PLrHRsJ91nVFScJLS91SWR5awtFfpewMWg

> Video demonstrations from Terry Reese of the various features and functions of MarcEdit. The next best thing to hands-on learning when you're not quite sure how to get started.

RegExr - http://regexr.com/

> Interactive resource for learning about and testing regular expressions, which can be used in MarcEdit.

Terry's Worklog - http://blog.reeset.net/

> Maintained by Terry Reese, creator of MarcEdit. Includes new regarding MarcEdit updates, explanations of new or overlooked MarcEdit functions, and lots of other helpful discussion.

Journals

The following journals can be consulted for articles describing uses for MarcEdit:
- *Computers in Libraries*
- *Code4Lib Journal*
- *Journal of Library Metadata*
- *Library Resources and Technical Services*
- *Technical Services Quarterly*

Other

If all else fails, try Google! There are lots of helpful presentations and training documents out there to explore.