

Lab 4 – Brick Mason User Manual

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CS 411W

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April 28, 2023

Final Version

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1 Introduction (O: Robert)

Brick Mason is a web-based platform that aids in the drafting of Rx Bricks through analysis of uploaded text documents and images, performing searches against important words, phrases, and detected image objects, before preparing a brick template document and populating it with the highlights and pictures from the search results.

This is a user guide for the Bricks Mason application, to aid in familiarization and use.

2 Account Management (O: Robert M: Kevin & Rebecca)

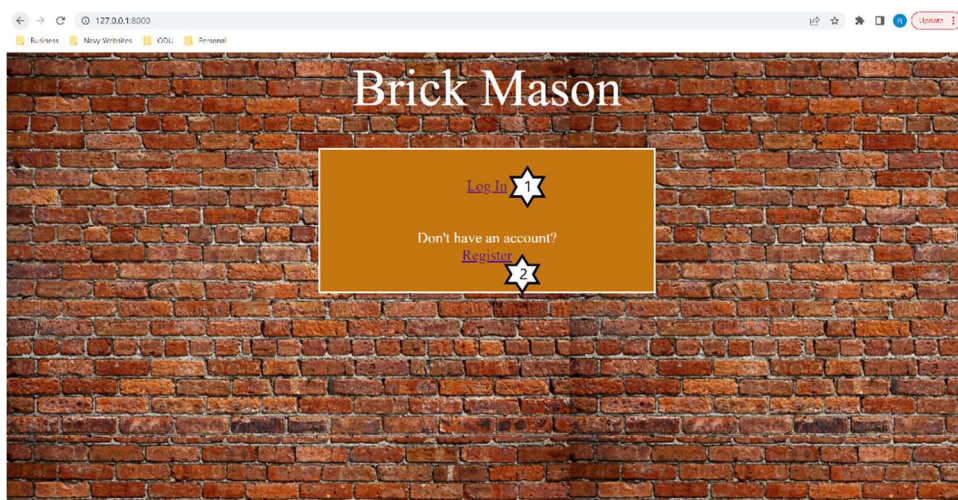
2.1 Registration (O: Robert, M: Rebecca)

Navigating to the base URL (<http://127.0.0.1:8000>) will display the home page, as shown in Figure 1, which will have two options:

- (1) Log In, which will allow a registered user to access the program.
- (2) Register, which will allow a non-registered user to create an account.

Figure 1:

Home Page, Not Logged In



Selection of the registration link will bring the user to the registration page, shown on Figure 2. Filling in the provided fields will allow a user to register their data with the system.

Figure 2:*Registration Page*

Registration

1 Username: Required, 150 characters or fewer. Letters, digits and @/./+/-/_ only.

2 First name:

3 Last name:

4 Email:

5 Password:

- Your password can't be too similar to your other personal information.
- Your password must contain at least 8 characters.
- Your password can't be a commonly used password.
- Your password can't be entirely numeric.

6 Password confirmation: Enter the same password as before, for verification.

7 Register

There are six fields:

- (1) Username: This is the identification the user will login with to gain application access. Field only accepts usernames 150 characters or less, letters digits and the special characters “@”, “.”, “+”, “-”, and “_”.
- (2) First Name: This field is for the given name of the user.
- (3) Last Name: This field is for the family name of the user.
- (4) Email: This field is for the email address of the user, which can be used for password recovery, which is covered in sections 2.3 and 2.4.
- (5) Password: This is for the password to be used for authentication in accessing the application. Do not use information from the above sections, provide at least 8 characters, avoid common passwords, and include at least one non-numeric.
- (6) Password Confirmation: This field is to re-enter the same password provided in field five, to ensure the password was correctly entered.

All six fields must be filled in and meet verification requirements to be accepted. Failure to meet field requirements will result in the password fields clearing and the conditions not meet being displayed for user understanding of the reason for rejection. After filling in the information, the user can select the Register button.

- (7) Selecting the Register button will register the user data, if successfully confirmed, and perform a transition to the login page.

2.2 Log in (O: Robert, M: Rebecca)

The login page, shown in Figure 3, has fields for the user to provide:

- (1) Their registered username.
- (2) Their registered password.

After filling in their user information, they can select the Log In button.

- (3) Selection of the Log In button will compare the provided user information to confirm the information matches application records.

If the user does not have an account, they can create an account by clicking on:

- (4) “Sign up here” – this link will direct the user to the registration page.

If the user has forgotten their password and has trouble logging into their previously created account, they can receive help logging in by selecting:

- (5) “Recover password” – this link will allow the user to reset their password.

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Figure 3:*Login Page*

Upon successful login, the user will be taken to the home page, which will present a message to the user, confirming successful authentication, and listing new options as shown in Figure 4.

Figure 4:*Home Page, Logged In*

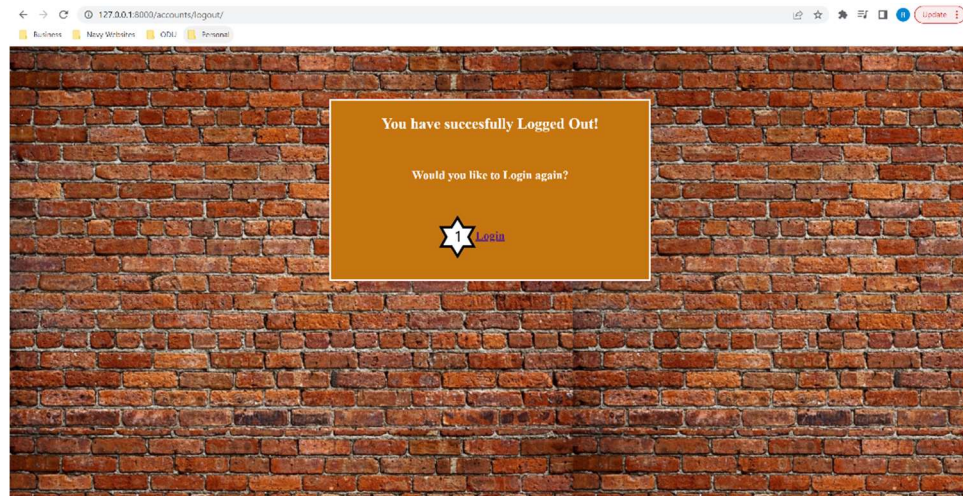
The page will have two options:

- (1) Enter, which will take the user to the dashboard, section 3.

- (2) Log Out, which will inactivate the user's account and take them to the logout page, as shown in Figure 5.

Figure 5:

Logged Out

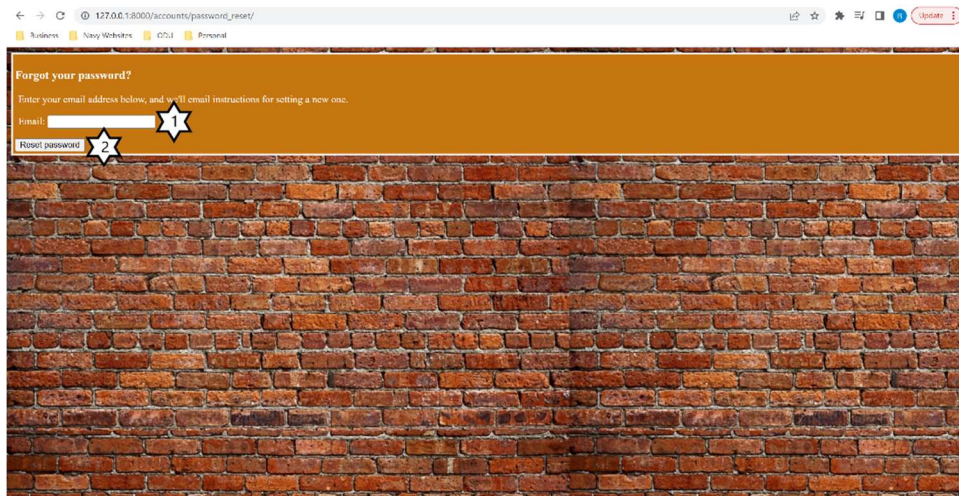


- (1) The Logout page will provide the option to return to login page.

2.3 Password Reset (O: Robert, M: Rebecca)

Users who have forgotten their password, can recover their account by requesting a link to reset their password. Figure 6 displays the password reset page.

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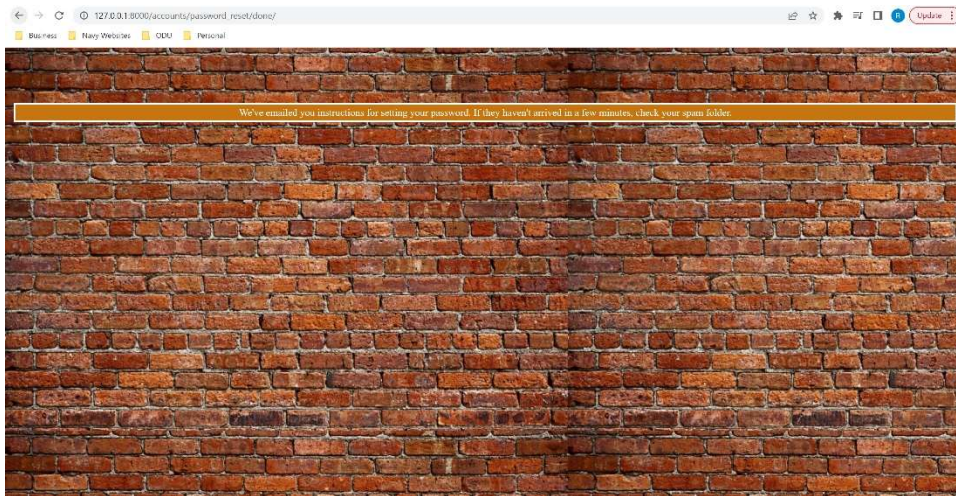
Figure 6:*Password Reset Page*

- (1) The page provides a field for entering the user's e-mail address.
- (2) The user submits their email by selecting the Reset Password button. The provided user email will be matched with stored user data, and the e-mail request will be sent if there is a match.

2.4 Password Recovery (O: Robert)

Figure 7 shows the password recovery page, which confirms successfully sending of the email request by the application.

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Figure 7:*Password Reset Requested*

The user should confirm the arrival of the email within 10 minutes of having it requested.

Figure 8 shows an example of the format and information to be used in sending the email request.

Figure 8:*E-mail Contents*

```
Content-Type: text/plain; charset="utf-8"
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit
Subject: Password reset on 127.0.0.1:8000
From: webmaster@localhost
To: John_Stillson_1@yahoo.com
Date: Sun, 16 Apr 2023 19:58:30 -0000
Message-ID: <167865111026.50712.15408194553269431339@LAPTOP-JN6STL3U>

Someone asked for password reset for email robzrulz@hotmail.com. Follow the link below:
http://127.0.0.1:8000/accounts/reset/NA/bkyexi-cd4558d86c13657392d1ec50b124632d/
-----
```

The e-mail will have a link that will provide the user with the ability to set a new password. The password requirements will be the same as listed in section 2.1, registration page.

3 Dashboard (O/M: Rebecca)

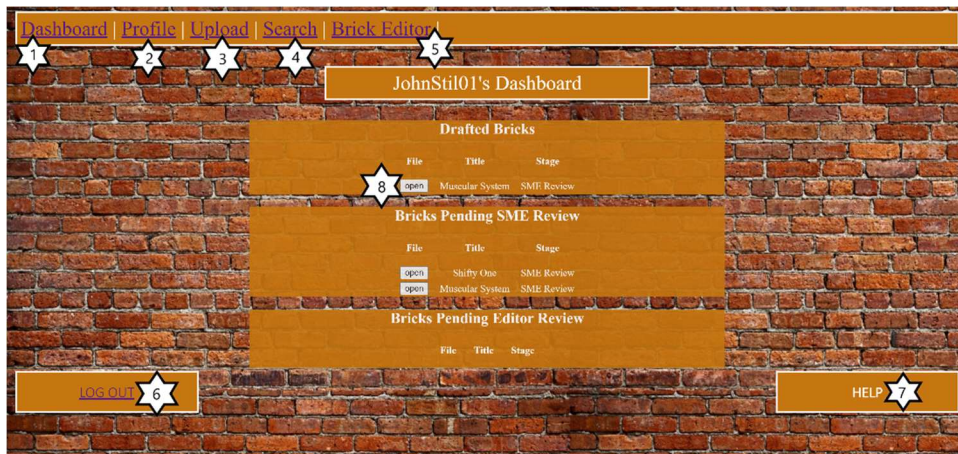
After successfully logging in, users are taken to the dashboard page, where they can access previously drafted Bricks for further editing, as well as navigate to other pages. Figure 9 shows the layout of the dashboard page. Navigation to other pages or initiation of various pop-up windows is achievable through the navigation bar up at the top, which includes:

- (1) A link to the dashboard page.
- (2) A link to the user profile page.
- (3) The ability to initiate a pop-up window to upload file.
- (4) A link to the search page.
- (5) A link to the editor page.

Other important features on the dashboard page include:

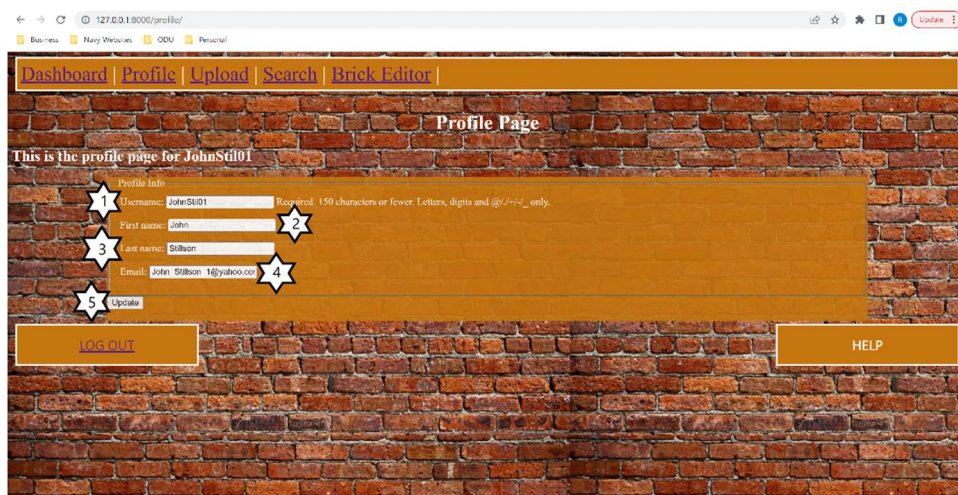
- (6) A log out button is available on the bottom left corner and will log the user out of their account.
- (7) A “help” button is available on the bottom right corner and will bring up this user manual.
- (8) Bricks in various stages of completion are accessible from buttons in the middle of the page and clicking on any of the buttons will take the user to the editor page, where the draft will be available and ready to be worked on. Notably, navigating to the editor page through the navigation bar differs from navigating there through opening a draft, since no file will be loaded.

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Figure 9:*Dashboard Page*

4 Profile (O: Robert)

The profile page is shown in Figure 10 and allows the user to alter their account information.

Figure 10:*Profile Page*

The profile page has the following fields, which are the same as explained in section 2.1, registration.:

- (1) Username.

(2) First Name.

(3) Last Name.

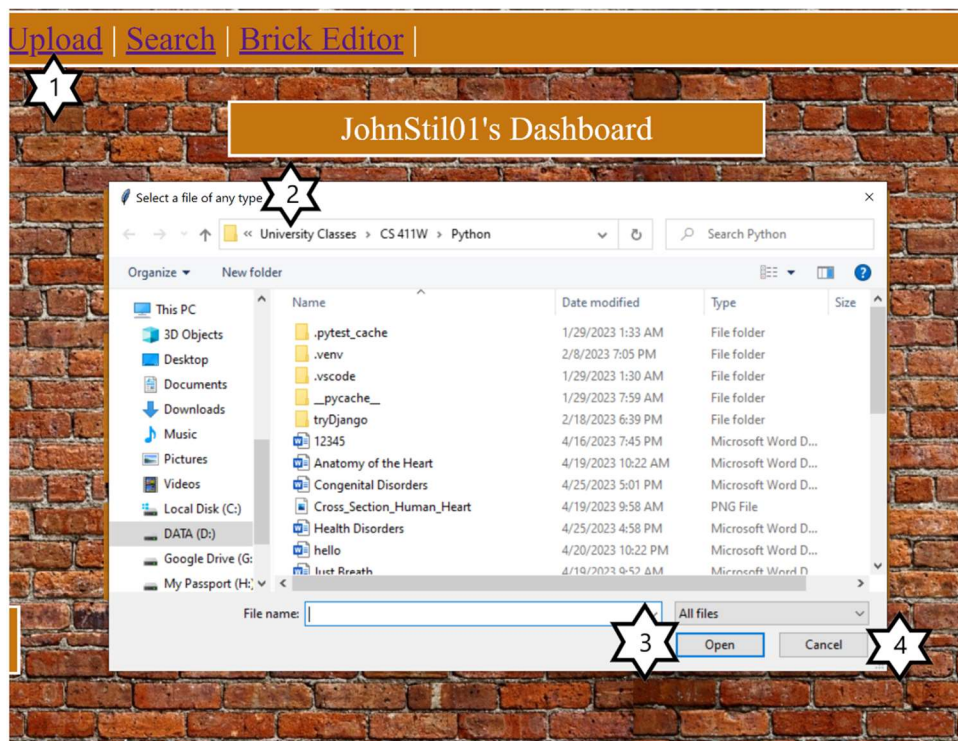
(4) Email.

5 Upload (O: Robert, M: Robert)

The top bar has an upload link, which can be used to upload files to the application database for analysis and use in preparing brick templates for drafting a brick. The upload function will create a file dialog window for file selection, as shown in Figure 11.

Figure 11:

Upload Function



(1) Upload link: Select to initiated upload process. Opens File Dialog window.

(2) File Dialog window: Select one or more files to upload.

(3) Open: Press to submit all selected files for uploading.

(4) Cancel: Press to cancel upload process.

After loading, user may need to wait while files are processed. Browser tab will show regular processing indication while this process is underway. Only docx, jpg, and png files are supported.

6 Search Page (O & M: Rebecca & Robert)

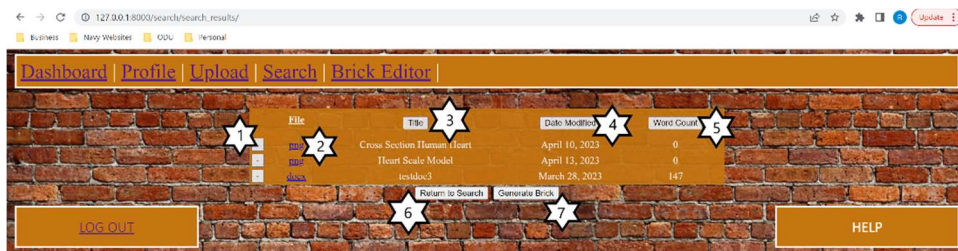
The search page, shown in Figure 12, is accessible from the top navigation bar of every page once logged in. Log out and help buttons are available on the bottom left and right corners respectively. If searchable files, namely .txt and .docx files have been uploaded, users can:

- (1) Filter searches by file extension.
- (2) Sort search results by date in ascending order.
- (3) Sort search results by date in descending order.
- (4) Sort search results by word count in ascending order.
- (5) Sort search results by word count in descending order.
- (6) Enter a search term at the search bar at the bottom.
- (7) Submit the search term to start the search process.
- (8) Cancel the search process.

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Figure 12:*Search Page*

The search results page, shown in Figure 13, will list all files that meet the search parameters and terms that the user provided on the search page. These are the files that will be used for insertion of information into a brick.

Figure 13:*Search Results Page*

The column headers are buttons, but also designate what information is in that field. The files listed are able to be ordered using the buttons used as column headers, which toggle the order of that respective field.

(1) “-”: Remove button, associated row is removed from search result.

(2) File: Displays the extension of the associated file. Selecting image files will

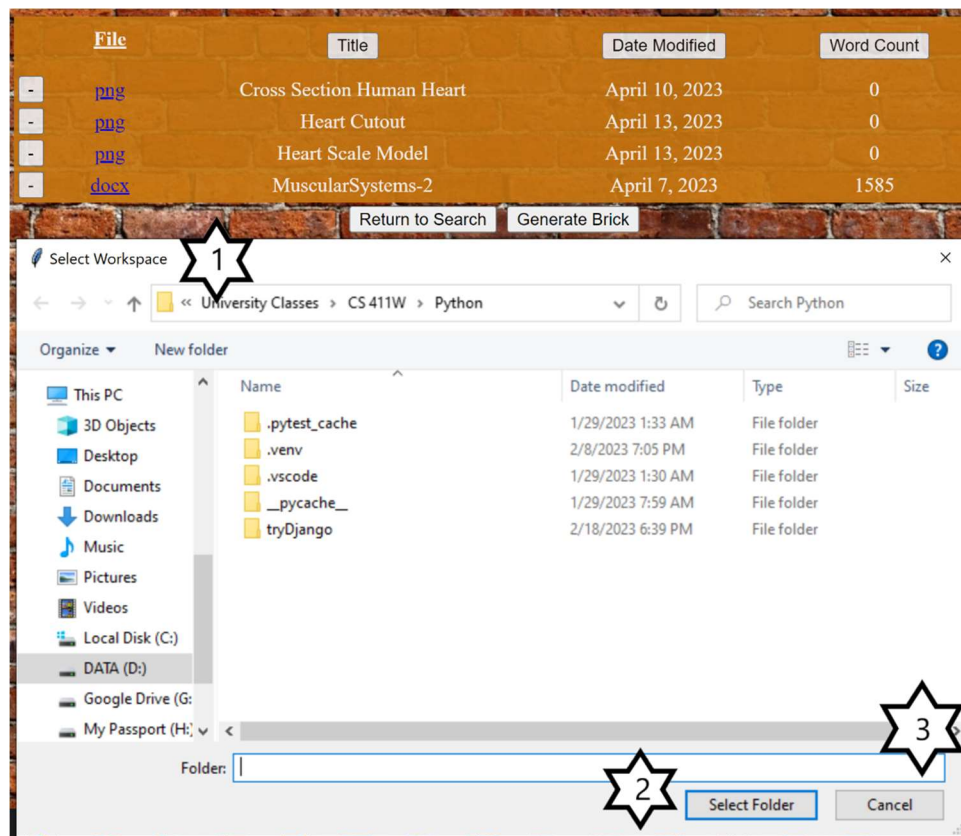
- (3) Title: provides the document title.
- (4) Date Modified: Provides the file date modified information, as taken from the file upon upload.
- (5) Word count: gives the text wordcount a document contains.
- (6) Return to Search: transitions to previous page.
- (7) Generate Brick: initiates new brick process getting the directory, Figure 13A, the title, Figure 13B, and generating a Brick Template with inserted information as shown in Figure 14, item 1.

The original ordering is defaulted to title, ascending order. The column header fields will toggle the order between ascending and descending when the same column is selected for reordering. However, if a different column is selected, the initial ordering will default to ascending order.

The Return to Search button will take you back to the previous page, which in regular use will be the search page. All previous information and selections from when the search was previously performed will remain as they were.

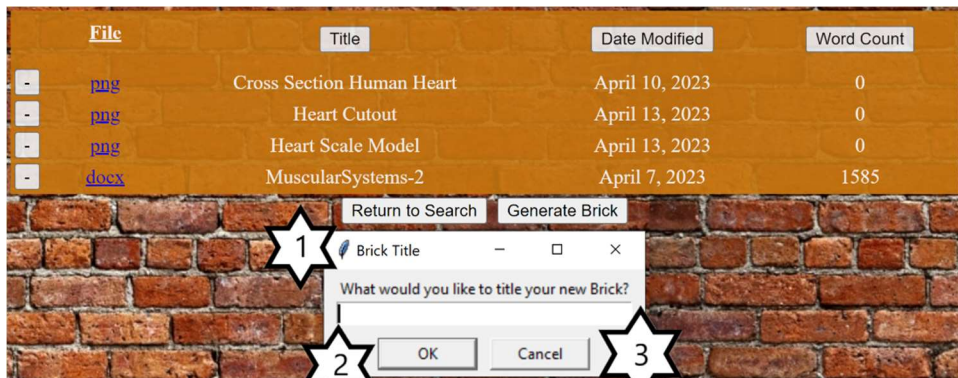
Generate Brick button will display a request for a directory to use as a workspace for creating the brick into, as shown in Figure 13A:

- 1.) File Dialog window: Used to select the directory to use in creating, storing, and managing the Brick Draft.
- 2.) Select Folder: continues Brick generation process using the selected folder as the bricks working directory.
- 3.) Cancel: Cancels the Brick generation process.

Figure 13 A:*Select Workspace Directory*

Once the directory is selected, the title of the brick is requested, as shown in figure 13B. This will initiate the process the transfer of key text information from the selected files and insert the text and pictures into a word document, as shown in Figure 14:

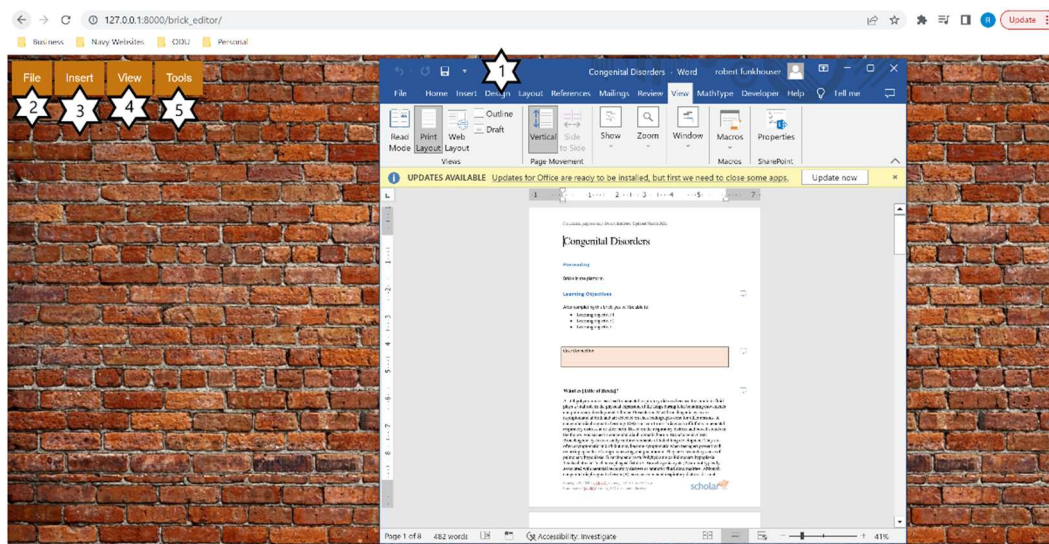
- (1) File Dialog window: used to input the Title of the Brick being drafted.
- (2) Ok: Continues the Brick generation process utilizing the title provided. If the title inserted is an empty string, "", then the result will be the same as selecting cancel.
- (3) Cancel: Cancels the Brick generation process.

Figure 13 B:*Provide Brick Title*

The word document will have the general brick format setup, so the user can shift the information around as needed.

7 Editor (O/M: Rebecca)

The editor page, shown in Figure 14, can pull up a Brick draft (1) for editing. The editor page also has four buttons that, when selected, each have a drop-down with multiple tools and/or navigation links. The buttons are “File” (2), “Insert” (3), “View” (4), and “Tools” (5).

Figure 14:*Brick Editor Page*

Selecting options that will make modifications to the Brick draft word document require that the document be closed prior to selection or a permissions error will occur.

Options in the “File” button drop down, shown in Figure 14A, allow users to:

- (1) Create a new Brick.
- (2) Save their progress.
- (3) Save their progress as a named Brick.
- (4) Load a previously created Brick linked to their user account.
- (5) Import a Brick from their local machine.
- (6) Export a finished Brick to their local machine.
- (7) Rename a previously saved Brick.
- (8) Exit the editor.

Figure 14 A:

Brick Editor Page – File Dropdown

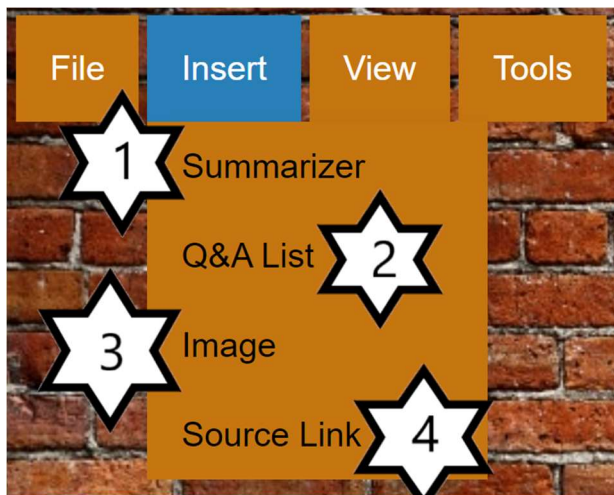


Options in the “Insert” button drop down, shown in Figure 14B, allow the user to:

- (1) Summarize the main content of the Brick (and have the summary automatically inserted after the main Brick content, under a “Summary” header)
- (2) Receive a list of automatically generated questions (which will be inserted after the summary, under a “Questions” header).
- (3) Insert images (location manually selected by the user).
- (4) Insert links to sources uses to generate the Brick (insertion done automatically under a “References” header after the Q&As).

Figure 14 B:

Brick Editor Page – Insert Dropdown

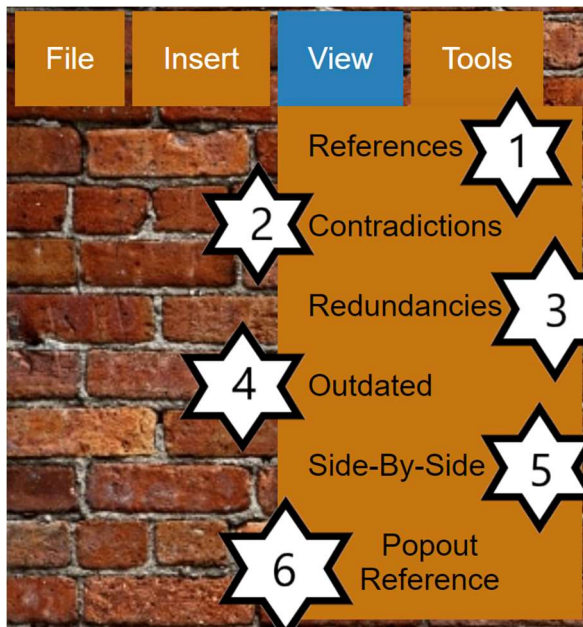


The “View” button dropdown allows users to:

- (1) See references used in the Brick.
- (2) See contradictions within a documents text.
- (3) See redundancies within a document’s text.
- (4) See material flagged as outdated.
- (5) See reference material side by side with the Brick draft.
- (6) See the reference material as a pop out window.

Figure 14 C:

Brick Editor Page – View Dropdown

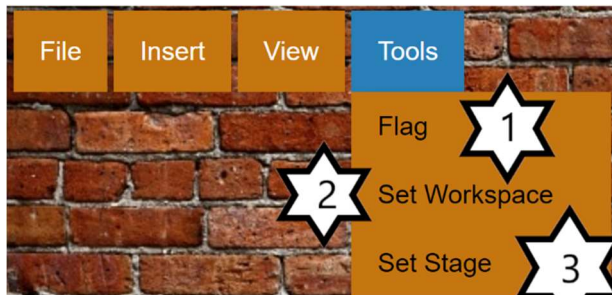


Under “Tools”, shown in Figure 14D, users can:

- (1) flag information manually as redundant, contradictory, etc.
- (2) Set Workspace: Used to change the workspace of a user selected brick. No brick needs to be loaded, selecting this option displays a selection window displaying a list of all bricks for selection of Brick. Then a second window is provided for the user to select the desired workplace, which is saved in relation to that brick.
- (3) Set Stage: Brick file must be linked to the editor to use this option. This changes the stage the brick is assigned. For the linked brick, a selection window will open displaying the options for the user to select. The selected option is saved in relation to the brick.

Figure 14 D:

Brick Editor Page – Tools Dropdown

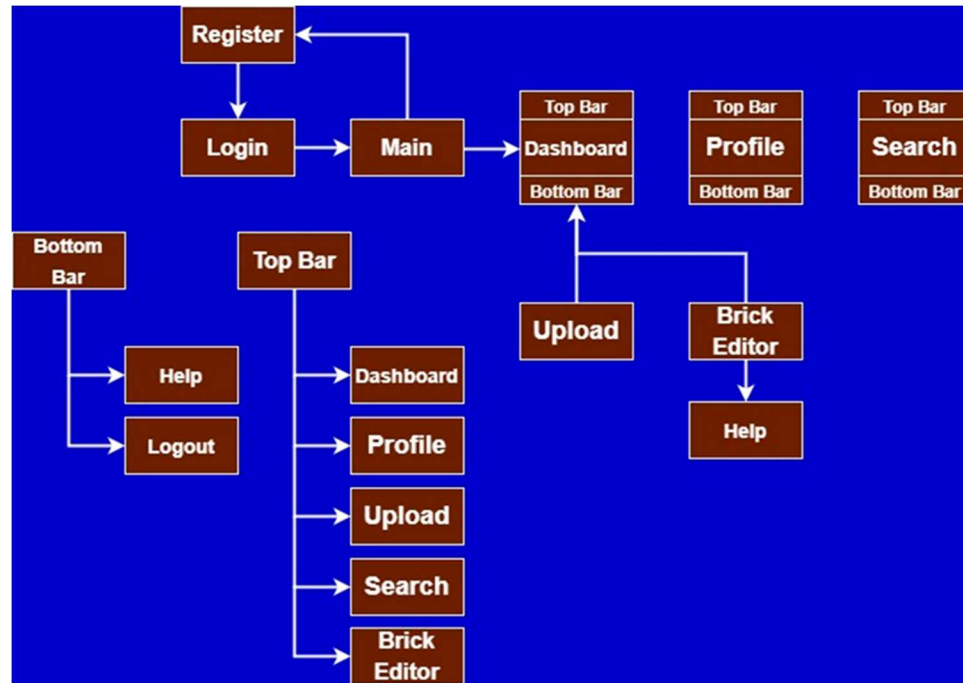


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Appendix A. Site Map

Appendix A:

Brick Mason Application – Site Map



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Appendix B. Glossary

Amazon Comprehend: An NLP service utilizing machine learning to find insights and relationships in text, provided through AWS.

Amazon Rekognition: Image and video analysis tool, provided through AWS.

Amazon Simple Storage Service (S3): Scalable cloud object storage utilizing buckets, provided through AWS.

Amazon Transcribe: Amazon STT application, provided through AWS.

Amazon Web Services (AWS): A cloud-based computing platform provided by Amazon that provides a variety of services utilizing AI tools.

Brick: Short and concise subject matter in interactive modular lesson form that can be delivered on the digital education platform Rx Bricks.

Brick Authoring Team: People with various skill sets involved in the initial research and drafting phases of brick creation (eg. students, researchers, editors, and SMEs).

Bricks Create: A ScholarRx product that allows information to be inserted into a Rx Brick template and convert the filled in template into a Rx Brick.

Brick Drafter: An individual performing the task of formulating a brick from information extracted from educational materials.

Comma Separated Values (CSV) Files: A file format that uses commas as delimiters, and can be used by certain applications like Microsoft Excel.

Data Extraction, Transformation, and Loading (ETL) Cycle: The process of pulling data from various source systems, putting the data through some sort of transformation process, and storing the transformed data into a storage system.

High-Yield Learning Material: Designed to provide maximum coverage of a subject's most fundamental points in a retainable, engaging, and time-efficient manner.

Integrated Development Environment (IDE): Software applications that provide comprehensive software development tools.

Major Functional Components Diagram (MFCD): A diagram that displays the relationship and interaction between the most significant hardware and software components in a system.

Natural Language Processing (NLP): A program that is designed to understand and process text and spoken words.

Natural Language Question Generator: An application that produces questions from text, provided through AWS.

Rx Bricks: A digital education platform designed to utilize small learning units called bricks, which are organized around basic science topics.

ScholarRx: A leading provider of medical education solutions for medical schools worldwide.

Speech To Text (STT): An application that takes verbal words and converts them into text, translating spoken sentences into written sentences.

Static Content: Stored and unchanging content. May exist in variable formats such as Word documents, PDFs, and PowerPoints.

Subject Matter Expert (SME): A knowledgeable and experienced individual within their field of expertise, such as doctors, professors, or members of industry.

Text Summarizer: An application that takes long documents and reduces the size into a few sentences.

Trello: A web-based, Kanban-style, project management tool used to manage projects, organize tasks, and build team collaborations.

United States Medical Licensing Exam (USMLE) - Step 1: The first part of the United States Medical Licensing Exam. It tests medical students and grads on how to apply the most vital concepts of medical science.

Users: Any member who will be a part of the Brick Authoring Team.

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