Development of Automation Tool to Download and Analyze Data from EMMA Web-Based Training

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ABSTRACT

- The Electronic Memory and Management Aid (EMMA) is an iOS tablet application developed by the WSU Neuropsychology and Aging Laboratory to serve as a memory intervention for older adults experiencing cognitive decline.
- Participants learn to use the EMMA app with an adaptive web-based training program. Progress through the initial training lessons, including errors completing quizzes and hints requested is tracked and stored in the EMMA training site.
- Project Need: Researchers and clinicians need to download the training lesson files from the EMMA training website in mass and then preform calculations on the data.

Figure 1. EMMA app that participants interact with

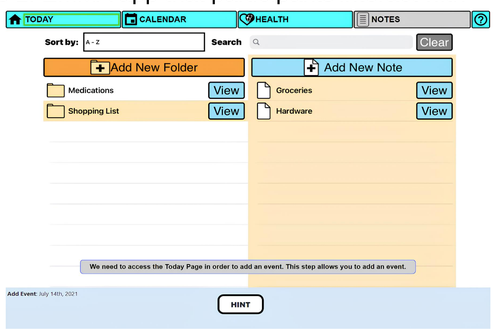
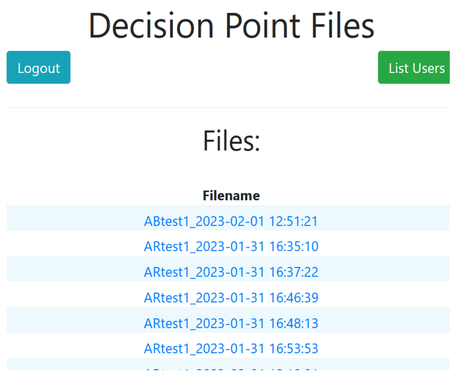


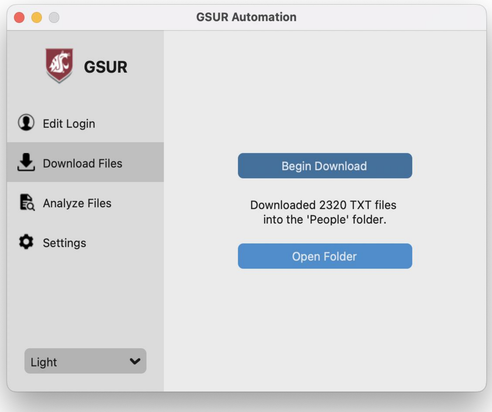
Figure 2. EMMA training website files to be downloaded

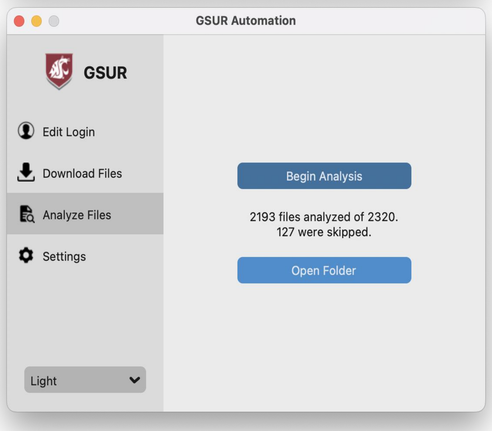


FEATURES / FUNCTIONALITY

- Using CustomTkinter there is a layered user interface that allows the user to select from four options: Edit Login, Download Files, Analyze Files, and Settings.
- Download Files: Using the python requests library this application 1) accesses the EMMA training website, 2) scans all available files, and 3) copies files to the user's local machine.
- Analyze Files: In collaboration with the EMMA research team, we developed an algorithmic model. Python loops through all data files and extracts relevant information to export into a results.csv.

Figure 3. GSUR Automation Tool Window





SOLUTION

- A Python/CustomTkinter application that scrapes/exports data from the website and stores all the files locally to then perform calculations on.
- Create a user interface that is easy to use.

python™ CustomTkinter

FINAL STATUS

- ✓ Completed web automation tools and analysis functionality
- ✓ Approved by WSU Researchers and Clinicians Team
- ✓ Installed program on researchers' local machine to use in production

FUTURE WORK

- Package the codebase into a simple to install app container
- Support for new data files
- More sophisticated security techniques

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