Working Prototype Known Problems Report

GeneSearcher: Valeska Victoria, Anthony Sagely, Charles Knight, Konstantin Sarychev
March 8 2021

Selecting a file that is not properly formatted leads to exception

- **Detail**: Selecting a file that is not properly formatted leads to exception in GeneSearcherProcessData.py : process_user_data()
  - user_genotype = user_data[rsid][2]
  - IndexError: list index out of range.
- **Issue**:
  - process_user_data() assumes user data is well formed but this is never checked.
  - user_data_parser.parse_user_data() makes no effort to ensure proper form and simply takes in space delimited lines and splits on space / tab
- **Possible Solutions:**
  - Simplest: Implement exception handling to fail gracefully. Notify user of issue and reset to valid state
  - Better: Implement input validation that checks for well formed input. If poorly formed, do not attempt to process and prompt the user to select a valid file.

Program fails to load without internet connection

- **Detail:** Launching program without internet connection causes exception and program fails to load
- **Issue:**
  - Model simply uses requests.get to fetch json formatted data from firebase
  - There is no real connection management or exception handling
- **Possible Solutions:**
  - Add Exception handling to fail gracefully
    - Notify user that they are offline
    - Wait for connection and then retry request
  - Add fallback "local" mode:
    - Function already exists to load local data set
    - Cache data set and add offline mode
    - Refresh dataset only when online.

Client fails to load if database is unavailable / refuses connection

- **Detail:** If firebase does not accept connection or is unavailable an exception is raised and the program terminates before loading.
- **Issue:**
  - Model simply uses requests.get() to fetch json formatted data from firebase
  - There is no real connection management or exception handling
- **Possible Solutions:**
  - Add Exception handling to fail gracefully
    - Notify user that they are offline
    - Wait for connection and then retry request

Client does not validate that it received data from firebase.

- **Detail:** If the server sends empty data, the client will attempt to work with it as normal. If the server sends back an empty result, the application appears to work normally but the user receives no information in their report.
- **Issue:** In Model.load_data_from_server() no effort is made to validate formatting.
- **Possible Solutions:**
  - Validate data received from the server is well formed and not empty. If poorly formed, fail gracefully and alert the user to issue.

Client does not detect poorly formed data received from firebase.

- **Detail:** If the client receives poorly formed data from the server (for instance an old version of the data set with missing attributes) it will attempt to work with poorly formed data possibly resulting in an exception.
- **Issue:** In Model.load_data_from_server() no effort is made to validate formatting.
- **Possible Solutions:**
  - Implement data validation to ensure we know that our data set is correct
  - Implement exception handling to fail gracefully and alert the user to issue.

Application package fails to build on macOS

- **Detail:** Pyinstaller fails to build macOS package meaning that macOS users are required to launch the application from the command line. Feature disparity with windows version.
- **Issue:** Known bug in Pyinstaller, largely out of our control
- **Possible Solutions:**
  - Research other utilities to build installable applications
  - Try to manually build the .app bundle and put together a script to automate the task for future versions.