CS Capstone Design

Alpha Prototype Demo Grading Sheet (100 pts)

TEAM: Dark Sky

Overview of major product use cases

Based on the Requirements document and development discussions with our client, we have established the following key use cases for our product

In all use cases, the user is an astronomer at the NPOI using the program to plan a night of observation.

UC1: Add stars to the target table

The user wants to select a specific star that they intend to observe. This is the first step in creating an "obslist", the end file that the astronomers expect to receive.

UC2: Calculate calibrators for a star

The user wants to know what calibrators to use in order to observe a target star at a specific date and using specific stations. The chosen star must already be added to the target table, and the appropriate date and station information must be added to the GUI. Alternatively the user can view the calibrators for a default date and station selection by leaving that information blank.

UC3: Sort the target table

The user wishes to organize the stars within the target table by name, id, right ascension, or other attribute

UC4: Save the observation information as a text file

All the essential information represented within the GUI, such as the selected targets and calibrators can be saved as an "obslist" file. This is the final product of our program, and is a human readable file that astronomers will use to calibrate and direct their equipment.

UC5: Load a previously saved obslist file

If a user has an obslist file, they can load it into the GUI to populate the target list and automatically select all of the observation specifications used in that obslist.

UC6: Create and view a plot of the target stars

The user can create and view a graphical plot that depicts the visibility of the stars within the target list over a period of time.

User Flows: Detailed walk-through for each use case:

All use cases assume that the program is properly installed and running on the user's workstation.

Use case 1: Add stars to the target table

User Flow:

1. The user enters the name of the star they wish to observe into the input field and presses enter. They can use the star's proper name or designation.
2. If the star is in the catalog it will be added to the target table.
3. If the star is not in the catalog an error message will inform the user that the star has not been added.

Evaluation and Comments:

- ✔ Convincingly demo'd each of listed challenges?
- ✔ Other evaluative comments:

Use Case 2: Calculate calibrators for a star

User Flow:

1. The observer adds a star to the target table according to **UC1.**
2. The observer selects the desired observation specifications using the radio buttons, drop-down menus, and input fields within the GUI.
    a. Select year, month, and day from drop down
    b. Select stations
    c. choose
3. The observer selects the desired star by clicking on it within the targets table.
4. The calibrators will populate within the table.

Evaluation and Comments:

- ✔ Convincingly demo'd each of listed challenges?
- ✔ Other evaluative comments:

Use Case 3: Sort the target table

User Flow:

1. The user must have at least two stars within the target table.
2. The user clicks on the header of the column that they wish to sort by.
3. The table will be sorted by the specified column

Evaluation and Comments:

✔ Convincingly demo'd each of listed challenges?

✔ Other evaluative comments

Use Case 4: Save the observation information as a text file

User Flow:

1. The user adds one or more stars to the target table and selects the appropriate observation specifications within the GUI.
2. The user calculates the calibrators for one or more stars as described in **UC2.**
3. The user must select a certain amount of tracking baselines (one less than the number of stations). Failing to do so will create an error window informing the user of this requirement.
4. The user clicks the save button to open their system's file explorer, which will prompt them to choose a name and location for the newly created file.

Evaluation and Comments:

✔ Convincingly demo'd each of listed challenges?

✔ Other evaluative comments

Use Case 5: Load a previously saved obslist file

User Flow:

1. The user clicks the load button at the bottom of the GUI.
2. The user uses the file explorer to locate an obslist file on their system. They select the file and confirm.
3. Obprep will populate with all the data from the saved obslist file.

Evaluation and Comments:

- ✔ Convincingly demo’d each of listed challenges?
- ✔ Other evaluative comments

Use Case 6: Create and view a plot of the target stars

User Flow:

4. The user adds at least one star to the target table as described in **UC1**.
5. The user selects the appropriate observation specifications within the GUI.
6. The user clicks the button for the specific type of plot they wish to view (Uptime, Coverage, Star, UV, or Visibility).
7. The plot opens in a new window. There is a button within the new window that will save the plot using the file explorer.

Evaluation and Comments:

- ✔ Convincingly demo’d each of listed challenges?
- ✔ Other evaluative comments

Known short-comings: Functionality still deficient/missing:

We are still working on the installer scripts and reducing the complexity of the install. The load function was very recently implemented and is still being debugged.