

Design and UseCases Documentation

Design draft:



Design Description:

The GUI draft of this application is the picture above.

At the top of the application, there is the menu which contains “File”, “View”, and “Help” menu item. The “File” menu provides “New”, “Open”, “Save”, “Save as” and “Exit” functions. The “View” menu provides functions that are whether or not show the DisplayDataTable panel (top-left), DataEntry panel(bottom-left) , Map tab pane (right) and tool bar (below the menu, but not show in above picture). “Help” menus can shows the use case information to help user use this application.

Deign reason: Fundamental set up functions is provided in the menus. User can use file menus to perform the fundamental functions easily and clearly. View menus is provided for user’s preference. Help menu help user to use this application, if they don’t know how to use it.

Data Entry Panel is in the bottom-left corner, which is for entering and adding the data to the data model, or deleting from it. User can view the data in the display panel below, and control it with previous and next button.

Deign reason: User use this panel to input the data to the file. If user wants to remove some bad waypoints, just use previous or next button to find the points and then click the “delete” is ok to remove it.

Data Display Table panel is in the top-left corner, which shows the bounds and displays the stored data in the scroll pane. The table rows can be selected but not be cell editable.

Deign reason: Use table to display store the data can make user see the stored data more clearly. User can scroll it the find and look into the stored data.

Map Tab panes is in the right part, which appears as a new file created. Its name is the same as the opened file. User can open many files, and the corresponding map tab pane appears. If user changed the data in the file (add or delete), but not save, there will be a “*” before the map tab pane’s title. After user saved it, the star disappears. If user wants to close the file, just click the close icon, then it will be closed.

Deign reason: Using tab pane to display files can make multiple files open concurrently, if user want to edit one file of them, just click the tab is ok. “*” mark is for reminding user the file is changed but not saved, which can make user know about the file editing more clearly.

The application parts is split by the two split panel (one is vertical and another is horizontal).

Deign reason: Split pane can make user resize the parts if they wants.

Test Evidence:

User Test:

Improve:

Some users said that every data column in the list is not aligned, which looks not good.

Jtable was used to replace JList.

Some users said that there should be a tool bar to make user use some frequent functions easier and more convenient.

A tool bar was added.

Some users said that there should be have save and saves functions rather than just “save as” functions, which can make user convenient.	Save function was added to the application.
Some users said that there should be “delete” button to delete the data in the model if they want remove it.	Delete button and corresponding function was added.
Some users said that there should be a button to close the tool bar, it user think it is redundant.	Show tool bar check box was added to the view menus.
Some users said that input the bounds when user create a new file is fine.	A new dialogue was design to get file name and bounds information.
Some users said that tab pane can make the user edit more convenient	Map Tabbed pane class with close function was designed to realize the model transition.
Some user said that if a file was changed by the user, there should be a kind of mark to remind user this point.	Once the file was changed by the user, a “*” will be added before the map tab pane title.
Every time when data cannot be added or deleted or file cannot be opened, a message dialogue should show for reminding user these wrong usage.	Many try catch and dialogue was added to remind user about it.

Use Cases:

For this this part all the actor is user and system is the gps map application.

User Case : Create a new file

Precondition: The software is open.

Postcondition: A new file is created and the data has been written into the model.

Main scenario:

1. User clicks "File" menu button or use key "alt + F":
2. User clicks "New" menu item or use key "alt + N":
System : show data input dialogue.
3. User enters data including file name, maximum latitude, minimum latitude, maximum longitude, minimum longitude.
4. User clicks "OK" to finish new file creation .
System: Input type is correct: new ".csv" file has been created and opened in tab pane.

Extensions:

3a. There are some text fields empty or input type is incorrect: dialogue "Enter a string for file name and numbers for latitude, longitude and elevation" shows.

Variation:

- 4'. User click "Cancel", the operation is cancelled.

User Case : Open a new file

Precondition: There are some ".csv" files in the system.

Postcondition: Gps file is open and the data has been written into the model.

Main scenario:

1. User clicks "Open" menu item use key "alt + O":
System: A file chooser shows to choose csv (only csv file displayed):
2. User selects a directory and clicks the file.
3. User clicks "ok" button.
System: Selected file was opened.

Extension:

- 2a. The file data is not a GPS format (four data each line): show dialogue "This is not a GPS file".
- 2b. The file data is in correct format: file opens and shows in tab pane.

Variation:

3'. User click "Cancel", the operation is cancelled.

User Case : Save As another file

Precondition: There is at least one file open.

Postcondition: Gps file is saved as another file.

Main scenario:

1. User clicks "Save As" menu item:
System: A file chooser appears.
2. User selects a directory and enters file name.
3. User clicks "ok" button.
System: Selected file was saved as input file name.

Extensions:

- 1a. If there are no file open, show message "Open a file or create a new file first".
- 2a. User enters a file not ends with ".csv", the file name automatically adds ".csv", and save as csv format file.

Variation:

- 3'. User click "Cancel", the operation is cancelled.

User Case : Save a file

Precondition: There are some ".csv" file in the system.

Postcondition: The Gps file is saved.

Main Scenario:

1. User clicks "Save" menu item or use key "alt + S":
System: File saves in that path.

Extensions:

- 1a. If the file has not been saved before, then do then same function as "Save as".

User Case : Exit

Precondition: The software is open.

Postcondition: The software is closed.

Main Scenario:

1. User clicks "Exit" menu item use key "alt + E":
System: A dialogue shows "save the change?"
2. a1.Click "yes": the same function with "Save" menu item.
System: Closed.

Variations:

- 2a. Click "no": exit without saving.
- 2b.Click "cancel": cancel the exit action.

User Case : Make Data Display Panel visible / invisible

Precondition: The data display pane is visible/invisible.

Postcondition: the data display pane is invisible/visible.

Main Scenario:

1. User clicks "View" menu buttonr use key "alt + V":
System: Three check box button menu items show, there are "Show data display panel", "Show data Entry panel", "Show map panel".
2. User makes "Show data display panel" selected:
System: the data display panel shows.

Variation:

3. 2'. User makes "Show data display panel" not selected:
System: the data display panel disappears.

User Case : Make data Entry panel visible / invisible

Precondition: The data entry pane is visible/invisible.

Postcondition: the data entry pane is invisible/visible.

Main Scenario:

1. User clicks "View" menu button use key "alt + V":

System: Three check box button menu items show, there are "Show data display panel", "Show data Entry panel", "Show map panel".

2. User makes "Show data Entry panel" selected:

System: the data Entry panel shows.

Variation:

- 2'. User makes "Show data Entry panel not selected:

System: the data Entry panel disappears.

User Case : Make map panel visible / invisible

Precondition: The map pane is visible/invisible.

Postcondition: the map pane is invisible/visible.

Main Scenario:

1. User clicks "View" menu button use key "alt + V":

System: Three check box button menu items show, there are "Show data display panel", "Show data panel", "Show map panel".

2. User makes "Show map panel panel" selected:

System: the map panel shows.

Variation:

- 2'. User makes "Show map panel panel" not selected:

System: the map panel disappear.

User Case : Close the a file

Precondition: There is at least one file open.

Postcondition: The gps file closed.

Main Scenario:

1. User clicks the close icon on the map tab panel.
System: the gps file closed.

User Case : Close the a file

Precondition: There are more than one files open.

Postcondition: The model has been transformed for the selected tab of gps file and displayed in the displayed panel.

Main Scenario:

1. User clicks another tab pane.

User Case : User tool bar

Precondition: The tool bar is shown.

Postcondition: The tool bar functions are used.

Main Scenario:

1. User clicks “New” image button: the same function as “New” menu item.
2. User clicks “Open” image button: the same function as “Open” menu item.
3. User clicks “Save” image button: the same function as “Save” menu item.
4. User clicks “Help” image button: the same function as “Help” menu item.
5. User clicks “Exit” image button: the same function as “Exit” menu item.

User Case : Add a waypoint to the file

Precondition: A GPS file is open.

Postcondition: The waypoint is added to the model’s data list.

Main Scenario:

1. User entry the data in the text fields.

2. User clicks "Add" button or use key "alt + A".

System: a data has been added to the store model and up-left table, and data enter panel also displays the input data.

Extensions:

2a. A file has not been created or opened: show message "Open a file or create a new file first".

2b. Name text field is empty: show dialogue message "Name cannot be empty".

2c. Latitude, Longitude or elevation text field is empty or not number type: show message "Enter numbers for latitude, longitude and elevation."

User Case : Delete a waypoint from the file

Precondition: A GPS file is open && there are some waypoints in the file.

Postcondition: The waypoint is deleted from model's data list.

Main Scenario:

1. User uses "Previous" and "Next" button select the point he/she wants to delete.

2. User clicks "Delete" button or use key "alt + D":

System: Displayed data has been deleted from both model and up-left table, and data entry panel shows the previous waypoint data.

Extensions:

2a. A file has not been created or opened: show message "Open a file or create a new file first".

2b. There is no waypoint data in model: show message "There is no waypoint data".

User Case : Find previous point.

Precondition: A GPS file is open && there are some waypoints in the file.

Postcondition: The previous waypoint displays.

Main Scenario:

1. User clicks "Previous" button or use key "alt + P":

System: Data entry panel displays previous waypoint data.

Extensions:

- 1a. There is no waypoint data in model: show message "There is no waypoint data".
- 1b. A file has not been created or opened: show message "Open a file or create a new file first".

User Case : Find Next point.

Precondition: A GPS file is open && there are some waypoints in the file.

Postcondition: The next waypoint displays.

Main Scenario:

- 1. User clicks "Next" button or use key "alt + P":
System: Data entry panel displays next waypoint data.

Extensions:

- 1a. There is no waypoint data in model: show message "There is no waypoint data".
- 1b. A file has not been created or opened: show message "Open a file or create a new file first".

User Case : Resize the panel.

Precondition: There is at least one view panel open

Postcondition: Panel has been resized.

Main Scenario:

User can drag the split pane to resize the panel size and view layout.

Shortcut key:

"ctrl + N": the same function as "new" menu item.

"ctrl + O": the same function as "open" menu item.

"ctrl + S": the same function as "save" menu item.

Extra function:

If user changes the file but not save it, in the tabbed pane title, there will be a "*" before the title.

If user save the changed file, the "*" will disappear.

Some Test items:

Create a new file:

Whether a dialogue is open for file name and bounds input.

Whether a remind message will appear if the input is incorrect.

Whether the bounds data has been entered into the model.

Whether the display table will display the data.

Open a file:

Whether a file chooser appears.

Whether a remind message will appear if the input is incorrect.

Whether the file data is translated to the model when input is correct.

Whether the display table will display the data.

Save a file:

Whether the file data will be saved into certain selected file.

Add a new waypoint:

Whether a remind message will appear when file is not open.

Whether a remind message will appear if the input is incorrect.

Whether the file data is translated to the model when file is open and input is correct.

Whether the display table will display the data.

Delete a new waypoint:

Whether a remind message will appear when file is not open.

Whether a remind message will appear if there is no waypoint in the table.

Whether the file data is deleted from the model when file is open and input is correct.

Whether the data will disappear from the display panel.

Get previous waypoint:

Whether a remind message will appear when file is not open.

Whether a remind message will appear if there is no waypoint in the table.

Whether the display panel will display the data.

Get next waypoint:

Whether a remind message will appear when file is not open.

Whether a remind message will appear if there is no waypoint in the table when file is open and input is correct.

Whether the display panel will display the data.