

DisplayHandler

DisplayHandler.h is a header file including necessary data members and functions for DisplayHandler.cpp. This class is designed to display simple help messages and full help messages onto the terminal. Specifically, the messages will be displayed when the user types “cd -h” or “cd -H”. In addition, this class also has a function to get the current working directory.

CommandCD

CommandCD class is designed to handle the “cd” command in a terminal-like environment. It calls functions from History Manager class and Display Handler class. It includes methods to parse the command and determine the arguments of the input command. It will determine the type of the “cd” command based on the second input argument. Every cd command starts with “cd” therefore the only thing that matters is what comes after “cd”. An enumeration is used to specify the different types of arguments used with “cd”. This class includes a function to correctly extract the arguments from the parsed input. For the “cd -l” command, we check whether “-l” is followed by an optional number, indicating to display the last N directories from history. In addition, it also makes sure that the data within memory is removed after parsing the command.

The rest of the class is the actual implementation of “cd” after parsing the input and correctly identifying the argument type. The implementation uses two other classes: DisplayHandler and HistoryManager. Here’s how it uses them:

The CommandCD class uses DisplayHandler: This class is used to handle the display of information onto the terminal. It is used in the implementCommand() method of the CommandCD class. Depending on the argument type (argType), different messages are displayed to the terminal. For example:

- If argType is h, the getSimpleHelpMessage() method of the DisplayHandler class is called to display a simple help message.
 - If argType is H, the getFullHelpMessage() method of the DisplayHandler class is called to display a full help message.
2. HistoryManager: This class is used to manage the directory history. Depending on the argument type, different operations are performed on the directory history. For example:
- If argType is l, the getHistory() method of the HistoryManager class is called to get and display the directory history.
 - If argType is lN (cd -l {n}), the getHistory(int n) method of the HistoryManager class is called to get and display the last n directories from the history.
 - If argType is c, the clear() method of the HistoryManager class is called to clear the directory history.
 - And so on for every argument type.