

User Manual: Enhanced ANSI Terminal-Based Spreadsheet Program

Step 1: Start the Application

After compiling the project, open your terminal and navigate to the directory where your compiled program is located.

To run the application, type the following command in your terminal:

```
./spreadsheet_app
```

The application will launch, and you will see a terminal-based grid representing your spreadsheet, with columns labeled A, B, C, etc., and rows labeled 1, 2, 3, etc.

Step 2: Navigate the Table

When the application starts, the cursor is placed at the top-left cell (A1) by default.

You can navigate through the cells using the following controls:

Move Up: Press 'U' or 'u' to move the selection cursor up by one row.

Move Down: Press 'D' or 'd' to move the selection cursor down by one row.

Move Left: Press 'L' or 'l' to move the selection cursor left by one column.

Move Right: Press 'R' or 'r' to move the selection cursor right by one column.

The currently selected cell will be highlighted on the table, making it easy to see where your focus is.

Step 3: Enter Data in a Cell

To edit a cell's value, follow these steps:

Navigate to the cell you want to edit using the navigation keys ('U', 'D', 'L', 'R').

Press 'E' or 'e' to enter edit mode.

The application will prompt you to type a new value for the selected cell.

Type the value you want. For example, in cell A1, type 25 and press Enter to save the value.

Backspace: If you make a mistake while typing, use Backspace to delete the last character you entered.

Cancel Edit: Press Escape to exit the edit mode without saving any changes.

Step 4: Use a Formula in a Cell

To input a formula, follow these steps:

Navigate to the cell where you want to enter a formula (e.g., cell B2).

Press 'E' or 'e' to enter edit mode.

Type the formula you want to use. For example, to sum the values of cells A1 and B1, type =A1 + B1 and press Enter.

Formula Examples:

=A1 + B1: Adds the values in cells A1 and B1.

=A1 - B2: Subtracts the value in B2 from A1.

=SUM(A1..A3) Adds the values from A1 to A3.

=AVERAGE(B1..B3) Finds the average of the values in cells B1 to B3.

After pressing Enter, the formula will be evaluated, and the cell will display the result of the formula.

Step 5: Check the Formula Results

The application will automatically update the cells that contain formulas. For example, if you entered `=A1 + B1` in cell B2, the value in B2 will update whenever A1 or B1 changes.

Recalculating Formulas: Every time you move or modify a cell, the formulas will be recalculated, so you don't need to manually trigger the recalculation.

Step 6: Save Your Spreadsheet

Automatic Save: The application automatically saves your work when you exit.

To manually save your file:

After entering data and formulas, press 'Q' or 'q' to quit the application.

The program will automatically save your spreadsheet to a CSV file.

Note: The application will try to save to the file path that was initially set, but this can be customized in the code.

Step 7: Load a Spreadsheet File

If you want to load a saved file:

When starting the application, ensure the path to your saved file is provided in the code (the `currentFile` variable).

The application will automatically load the file and display the spreadsheet in the terminal.

Step 8: Exit the Application

To exit the application:

Press 'Q' or 'q'. The program will automatically save your work and exit.

Important: Ensure you save your file before exiting if you want to keep your changes.