User Guide

Goal of the Program

The Bond Portfolio Calculator is a C program designed to help users manage a portfolio of bonds. It allows users to add, delete, and view bonds in the portfolio, perform scenario analysis, and save/load the portfolio to/from a file. The program provides financial calculations such as bond price and yield to maturity (YTM).

Instructions on How to Use the Program

1. **Run the Program**: Compile and run the program using `make` or the following command:

   ```
   gcc -o bond_calculator src/main.c src/bond.c src/portfolio.c src/scenario.c
   src/file_handler.c src/utils.c -Iinclude -lm
   ```

2. **Main Menu**: The main menu provides the following options:

- `1. Add New Bond to Portfolio` : Adds a new bond to the portfolio based on user input.

- `2. Scenario Analysis` : Performs scenario analysis on the portfolio.

- `3. View Portfolio Summary` : Displays a summary of all bonds in the portfolio, including bond prices and YTM.

- `4. Save Portfolio to File` : Saves the portfolio to a text file.

- `5. Load Portfolio from File` : Loads the portfolio from a text file.

- `6. Delete Bond from Portfolio` : Deletes a bond from the portfolio based on the bond identifier.

- `7. Exit` : Exits the program.

3. **Adding a New Bond**: Select option `1` from the main menu and enter the bond details when prompted.

4. **Performing Scenario Analysis**: Select option `2` from the main menu and enter the percentage change in interest rates.

5. **Viewing Portfolio Summary**: Select option `3` from the main menu to view the details of all bonds in the portfolio.

6. **Saving the Portfolio**: Select option `4` from the main menu to save the portfolio to a text file.

7. **Loading the Portfolio**: Select option `5` from the main menu to load the portfolio from a text file.

8. **Deleting a Bond**: Select option `6` from the main menu and enter the bond identifier to delete the bond.

9. **Exiting the Program**: Select option `7` from the main menu to exit the program.

Where the Files are Saved and Loaded

- The portfolio is saved to a file named `portfolio.txt` in the current working directory.

- The portfolio is loaded from a file named `portfolio.txt` in the current working directory.