Introduction

The **Stock Selection Tool** is a Python program that helps users analyze historical stock prices easily. It uses libraries like YFinance and Pandas to fetch and process stock data from Yahoo Finance. This tool is designed for people who want to make better decisions about investing in stocks.

With this tool, users can check how a stock has performed over a certain time, calculate its average price, see the percentage change, and find the highest and lowest prices during that period. It also allows users to save the analyzed data for future use.

The tool is simple to use and includes features like user registration and login for secure access. Whether user are new to investing or have experience, the Stock Selection Tool makes it easier to understand stock trends and make smarter choices.

In short, this tool is a useful resource for anyone who wants to explore stock data and learn more about how stocks perform over time.

Objective

The primary objective of the Stock Selection Tool is to help users analyze historical stock closing prices efficiently. The tool enables users to:

1. Retrieve stock data over a specific time range.

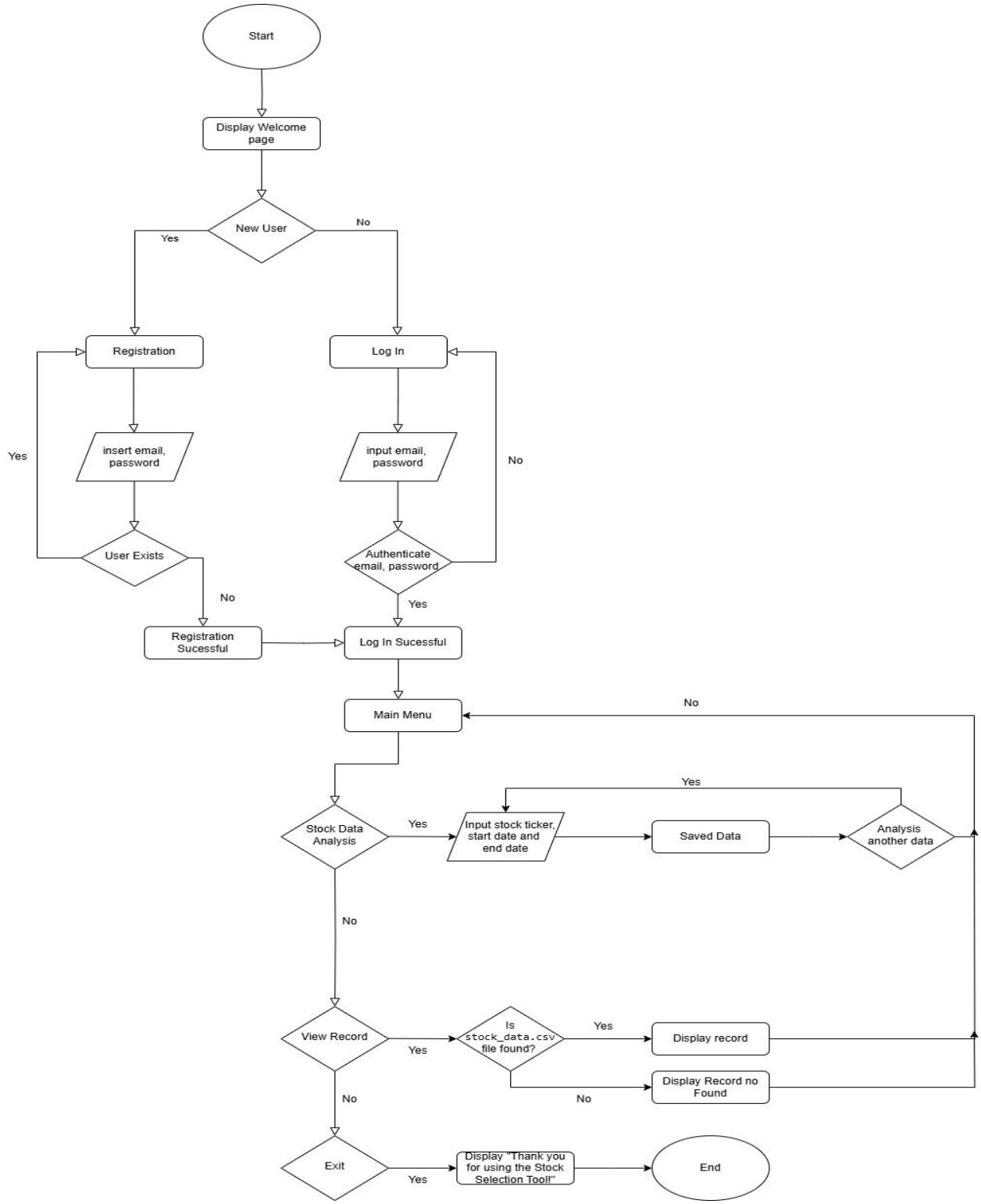
2. Analyze important metrics, including average closing prices, percentage changes, and the highest and lowest prices.

3. Save and review analyzed stock data for future reference.

By achieving these objectives, the tool simplifies the stock evaluation process and facilitates better decision-making in investments.

Methodology

Flowchart



Description of Workflow

1. Registration and Login Process

- **Welcome Page:**
  The program begins by displaying a welcome page to the user.

- **New User or Existing User Decision:**

  -If the user is **new**, they are directed to the **Registration** process. The user provides an email and password. The system checks if the email already exists in the user database (users.csv). If the email exists, the user is notified and prompted to log in. If the email does not exist, the registration is successful, and the user is automatically logged in.

  -If the user is **not new**, they are prompted to log in. For log in process, the user provides their email and password. The system authenticates the credentials against the users.csv file. If the credentials match, login is successful. If the credentials do not match, the user is notified to retry.

2. Main Menu

After a successful login, the user accesses the **Main Menu**, which offers three options:

1. **Stock Data Analysis**
2. **View Records**
3. **Exit**

3. Stock Data Analysis

- **Input Data:**

  The user provides the stock ticker (e.g., 1155.KL), start date, and end date.

- **Data Retrieval and Analysis:**

  - The program fetches the stock's historical closing prices using the given parameters.

  - If data is successfully retrieved:

-The program calculates key metrics, such as:

- Closing Price
- Average Price
- Percentage Change
- Highest Price
- Lowest Price

The results are displayed to the user.

Save Data:
The analyzed data is stored in the stock_data.csv file, linked to the user's email for personalized records. If data retrieval fails (e.g., invalid ticker or date range), the user is notified.

Analyze Another Stock:

After completing the analysis, the user is prompted to analyze another stock. If the user chooses "Yes," the process loops back to inputting new stock data. If the user chooses "No," they return to the main menu.

4. View Records

- The program retrieves and displays the user's previously saved stock analysis records from the stock_data.csv file. If no records are found for the user, an appropriate message is displayed.

5. Exit

- When the user chooses to exit, the program displays a farewell message: **"Thank you for using the Stock Selection Tool!"**. Then the program terminates.

Setup and Configuration

To run the Stock Selection Tool, follow these steps:

Prerequisites

Ensure the following are installed:

- Python 3.8+
- Required Libraries:
    - pandas
    - yfinance