Income Tracker Application

# Overview

The Income Tracker is a PyQt5-based application designed to help users manage and track their income across different currencies. It features functionality to add, view, and delete income records, convert between currencies using real-time exchange rates, and export income data to PDF.

# Modules and Libraries

- PyQt5: Used for the GUI components and application structure.  
- json: Handles loading and saving data to local files.  
- yahoo\_fin: Fetches real-time exchange rates.  
- datetime: Manages date operations.  
- reportlab: Generates PDF reports of income data.

# Key Classes and Functions

## UserCredentials

Manages user authentication by loading, validating, and updating credentials.

- `load\_credentials()`: Loads credentials from a local JSON file. Returns default credentials if the file is missing or corrupted.  
- `save\_credentials()`: Saves the current credentials to a local JSON file.  
- `validate\_login(username, password)`: Validates user login attempts.  
- `update\_credentials(username, password)`: Updates the username and password.

## IncomeData

Handles the storage, manipulation, and conversion of income data.

- `fetch\_exchange\_rate()`: Fetches current exchange rates from `yahoo\_fin`.  
- `load\_income\_data()`: Loads income data from a local file.  
- `save\_income\_data()`: Saves income data to a local file.  
- `add\_income(date, amount, currency)`: Adds a new income record.  
- `delete\_income(currency, index)`: Deletes a specified income record.  
- `get\_total\_income()`: Calculates the total income in each currency.

## IncomeTracker (QMainWindow)

Main application window that provides the user interface for interacting with the income tracker.

- `setup\_ui()`: Sets up the initial UI components.  
- `setup\_main\_menu()`: Displays the main menu.  
- `setup\_add\_income()`: Interface for adding a new income record.  
- `setup\_view\_income()`: Displays the income records.  
- `action\_exit()`: Handles application exit.

## Utility Functions

- `export\_to\_pdf(data, filename)`: Exports given income data to a PDF file.

# Running the Application

To start the application, ensure all dependencies are installed, then run the `Income tracker.py` script using a Python interpreter. The application uses a simple file-based approach for data persistence, allowing income data and user credentials to be stored locally between sessions.