

Setting Up the Initial Project for the Personal Finance Tracker App

This guide explains how to set up the **Personal Finance Tracker App** project for a team of three. It covers creating a GitHub repository, setting up a virtual environment (both from the command line and using PyCharm), managing dependencies, and organizing project files for smooth collaboration.

Step 1: Create a GitHub Repository

1. Create a GitHub Repository:

- One team member should create a new GitHub repository called **personal-finance-tracker**.
- In the repository setup:
 - Add a **README.md** file to describe the project.
 - Add a **.gitignore** file to exclude unnecessary files like the virtual environment folder (`venv/`) and IDE settings.
 - Add a license if applicable (e.g., MIT License).

2. Invite Team Members:

- Go to the **Settings** tab in the repository, then select **Collaborators and teams**.
- Add the other two team members as collaborators, granting them access to the repository.

3. Clone the Repository:

- Each team member should clone the repository to their local machine using:

```
git clone <https://github.com/your-username/personal-finance-tracker.git>
cd personal-finance-tracker
```

Step 2: Set Up a Virtual Environment

Method 1: Using the Command Line

1. Create a Virtual Environment:

- In the project directory, create a virtual environment using:

```
python -m venv venv
```

- This will create a **venv** folder inside the project directory, isolating the dependencies for this project.
- Update pip

- `python -m pip install -U pip`

2. Activate the Virtual Environment:

- **Windows:**

```
venv\\Scripts\\activate
```

- **macOS/Linux:**

```
source venv/bin/activate
```

3. Install Required Packages:

- Initially, you will need to install basic packages like pandas and matplotlib:

```
pip install pandas matplotlib
```

- As the project progresses, add additional packages as needed.

4. Create a `requirements.txt` File:

- Generate a **requirements.txt** file to document dependencies:

```
pip freeze > requirements.txt
```

- Other team members can install packages from this file using:

```
pip install -r requirements.txt
```

5. Add the `venv` Folder to `.gitignore`:

- Open the **.gitignore** file and add the following line to exclude the virtual environment from version control:

```
venv/
```

Method 2: Using PyCharm

1. Open PyCharm and Your Project:

- Open PyCharm and navigate to the **personal-finance-tracker** project directory.

2. Create a Virtual Environment in PyCharm:

- Go to **File > Settings** (or **PyCharm > Preferences** on macOS).
- Select **Project: personal-finance-tracker > Python Interpreter**.
- Click on the gear icon next to the interpreter drop-down menu and select **Add**.
- Choose **New environment** and select **Virtualenv**.
- Set the location to the project folder (e.g., `venv` inside your project).
- Click **OK** to create and activate the virtual environment.

3. Install Packages in PyCharm:

- Open the **Python Packages** tool window from **View > Tool Windows > Python Packages**.

- Search for packages like **pandas** or **matplotlib** and click **Install**.
- Alternatively, open the terminal within PyCharm and use pip:

```
pip install pandas matplotlib
```

4. Verify and Share Dependencies:

- Generate a **requirements.txt** file as described in the command-line method:

```
pip freeze > requirements.txt
```

- Commit the file to GitHub so all team members can install the same dependencies.

Step 3: Organize Project Files

1. Create Main Project Files:

- In the root directory of the project, create the following files:
 - **main.py**: The main script that runs the app and handles the user interface.
 - **data_management.py**: Manages loading, adding, editing, and deleting transactions.
 - **budget_management.py**: Manages income, budget setting, and alerts.
 - **data_analysis.py**: Analyzes spending by category, calculates average spending, and identifies top spending categories.
 - **visualization.py**: Generates line, bar, and pie charts for data visualization.

2. Example Directory Structure:

```
personal-finance-tracker/  
|  
└─ main.py
```

```
|— data_management.py
|— budget_management.py
|— data_analysis.py
|— visualization.py
|— requirements.txt
|— sampledata.csv
|— .gitignore
└— README.md
```

3. Initial Code Commit:

- Add and commit the initial project files to Git:

```
git add .
git commit -m "Initial project setup with main modules
and virtual environment"
git push origin main
```

Step 4: Collaborate as a Team

Please refer to the **Gitflow Strategy for the Personal Finance Tracker App** document (PDF).

Step 5: Documentation and Communication

1. Update the README File:

- Include detailed instructions on how to run the project, set up the environment, and use the app.
- Add a brief description of each module and its purpose.

2. Use GitHub Issues and Milestones:

- Use GitHub Issues to track tasks, bugs, and enhancements.
- Set milestones to manage deadlines and progress.

3. Communication Tools:

- Use tools like Slack, Microsoft Teams, or Discord for regular communication.
 - Schedule meetings or code reviews to ensure alignment on progress.
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Summary

- **GitHub Setup:** Create a shared repository and manage branches.
- **Virtual Environment:** Set up an isolated environment using the command line or PyCharm.
- **Organized Project Structure:** Divide code into manageable modules.
- **Collaboration:** Use branches, pull requests, and GitHub Issues for effective teamwork.