Project Report: Investor ITR & GST Calculator

1. Project Overview

The "Investor ITR & GST Calculator" is a web application designed to help investors calculate their capital gains tax liability from stock market transactions. It uses the First-In, First-Out (FIFO) method to match buy and sell trades and determines whether the gains are short-term (STCG) or long-term (LTCG). The application also calculates the Goods and Services Tax (GST) on brokerage fees and provides a comprehensive summary of the user's tax position.

The application is built with Python, using the Streamlit library for the user interface and pandas for data manipulation.

2. How to Run Locally

To run the application on your local machine, follow these steps:

1. **Install the required Python libraries:** `bash pip install -r requirements.txt`
2. **Run the Streamlit application:** `bash streamlit run app.py`

This will start a local web server, and you can access the application in your web browser, usually at `http://localhost:8501`.

3. How to Use the Application

The application is designed to be user-friendly:

1. **Prepare your transaction data** in a CSV file with the following columns: `Date`, `Type` (BUY or SELL), `Stock`, `Qty`, `Price`, and `Brokerage`. An optional `Dividend` column can also be included.
2. **Upload the CSV file** using the file uploader in the application's sidebar.
3. **The application will automatically process the data** and display a summary of your tax liabilities, including:
   - Total Short-Term Capital Gains (STCG)
   - Total Long-Term Capital Gains (LTCG)
   - Total Dividend Income
   - GST on Brokerage
   - Total Taxable Income
4. **You can also view a detailed breakdown** of all matched trades and download the results as a CSV file for your records.

4. Project Structure

The project consists of the following key files:

- `app.py`: The main entry point of the Streamlit application. It handles the user interface, file uploads, and displays the results.

- `calculator.py`: Contains the core logic for the calculator. This includes the FIFO algorithm, STCG/LTCG classification, and GST calculation.
- `requirements.txt`: Lists all the Python libraries required to run the project.
- `sample_portfolio.csv`: A sample CSV file that demonstrates the required data format.
- `test_calculator.py`: Contains unit tests for the calculation logic in `calculator.py`.
- `README.md`: Provides a general overview of the project.
- `DEPLOYMENT_GUIDE.md`: Contains detailed instructions on how to deploy the application to Streamlit Cloud.
- `.streamlit/config.toml`: A configuration file for the Streamlit application.

5. Core Calculation Logic

The heart of the application is the `calculator.py` file, which performs the following calculations:

- **FIFO (First-In, First-Out)**: The application processes trades on a per-stock basis, sorted by date. When a "SELL" trade is encountered, it is matched with the earliest available "BUY" trade for the same stock.
- **STCG/LTCG Classification**: For each matched trade, the holding period is calculated. If the holding period is greater than 365 days, the gain is classified as Long-Term Capital Gain (LTCG). Otherwise, it is a Short-Term Capital Gain (STCG).
- **Gain/Loss Calculation**: The gain or loss for each matched trade is calculated as: `(Sell Price * Quantity) - (Buy Price * Quantity) - Brokerage`
- **GST on Brokerage**: The GST is calculated as 18% of the total brokerage fees for the matched trades.

6. Deployment

The application is designed to be deployed on Streamlit Cloud, which offers a free tier for public applications. The `DEPLOYMENT_GUIDE.md` file provides a step-by-step guide for this process, which involves:

1. Creating a GitHub repository for the project.
2. Pushing the project files to the repository.
3. Connecting your GitHub repository to your Streamlit Cloud account.
4. Configuring and deploying the application.