Bravisa Project

Overview

The Bravisa Project is an automated tool developed to streamline the creation of various reports, such as Bravisa Temple Tree lists (BTT List), EPS, SMR, PRS, ERS, IRS, etc. The software is designed to handle daily FB data, which can be inserted into a PostgreSQL database through the application. This data is then processed through a series of transformations that involve combining columns across different tables to generate the reports.

Key features of the Bravisa Project include:

● Data Insertion and Management: The tool allows users to insert daily FB data into the database and manage the data by deleting records for a specific day or a span of days.

● Report Generation: Users can generate various reports either together or separately. The reports can also be downloaded for further use.

● Data Transformation: The application automatically processes the inserted data through complex transformations to create the required reports by combining information from different tables.

● Industry Details Management: The tool includes a GUI page for adding new industry details into the database.

The project is built using Flask as the web framework, PostgreSQL as the database, and Python for the backend logic.

The requirements.txt file lists the dependencies required for the project, which include various libraries and tools used for tasks such as data handling, report generation, and web interface management. Here are some key packages,

● **Flask** : For building the web application and handling HTTP requests.
● **PostgreSQL** : For managing the database.
● **Pandas** : For data manipulation and transformation.
● **Numpy** : For mathematical and statistical calculations.

Installation and setup

This section will guide you through the process of installing and setting up the Bravisa Project. Follow the steps below to get started.

Prerequisites

Before you begin, ensure you have the following installed on your system:

- Operating System:Windows.
- Python: Version 3.10.9 or later. [Download Python](#).
- Package Manager: (pip or conda) Ensure pip is installed with Python.
- Database: Download PgAdmin. [Download PostgreSQL](#).

Step 1: Clone the Repository

First, clone the project repository to your local machine using Git.

git clone https://github.com/AchuAshwath/BravisaProject.git
cd BravisaProject

Step 2: Create a Virtual Environment (Optional but Recommended)

It's recommended to create a virtual environment to manage project dependencies.

python -m venv venv

Activate the virtual environment

venv\Scripts\activate

Step 3: Install Dependencies

Install the required Python packages using pip.

pip install -r requirements.txt

Step 4: Setting up the database

First install Postgres and PgAdmin, [Download Postgres](.).

psql -h your_host -U your_username -d your_database -f create_tables.sql

setup.ipynb includes the script to create schemas and tables
Run this cell to create all the tables and schemas

Starting the application

python app.py

After any changes made while development install the Bravisa.exe file using this command,

pyinstaller .\Bravisa.spec --dist-path .

all of bash commands are meant to be run in the BravisaProject/app/... - working directory of this project.

Working Directory

1. Build - this folder contains all the build files for the bravisa.exe
2. backup - this folder contains backup sql files for backing up the database.
3. dash_process - contains the modules to enable dashboard processes to visualize data. 4.
4. dist - contains the distribution of the software that is installed locally.5.
5. DownloadFiles - Reports are downloaded into this folder, this folder contains two subfolders such as reports and txt_files.6.
6. env - has the libraries and dependencies that you install if you create a virtual environment.
7. FBFiles - this folder is where FB file folders 1,2,3 must be extracted from the zip file.
8. index-files - this folder is where BSE500_Index.csv and ind_nifty500list.csv must be changed monthly.

9. IndexOHLCFiles - this is the folder where daily index OHLC files must be placed,example : ind_close_all_DATE.csv.
10. lib - this folder contains all the lib modules, such as OHLC, IndexOHLC, PE etc.
11. mf_analysis - this folder contains all the modules to generate mutual fund reports.
12. missing - this folder should be used to place all the missing data while using the intermediate insert.
13. OHLCFiles - this is the folder where the daily OHLC files are placed to generate the OHLC report, example files are,
    BhavCopy_BSE_CM_0_0_0_20240729_F_0000.CSV, cm01APR2024bhav.csv
14. outputs - folder will contain all the cleaned data, if the utils/sanitize.py module's san_in function is enabled.
15. reports - this folder contains all the modules to generate reports like EPS, EERS, SMR, PRS, IRS etc.
16. static - this folder has the static image used in the index.html
17. templates folder contains the static front end GUI pages. Test_reports - this folder contains all the testing modules which are used to test the reports while development.
18. utils - this folder contains all the utility modules such as db_helper.py, script_helper.py, sanitize.py, holiday.py etc.
19. app.py is the main entry point to the flask app and the software.
20. Bravisa.spec is used to build the Bravisa.exe file from the flask application.
21. requirements.txt - this contains all the libraries and their versions that are essential for running the application.
22. config.py - This file defines directory paths and organizes financial data storage for different categories such as OHLC, index files, and FB data.

Codebase and Codeflow

1. The software starts from the app.py python file, and progressively extends into multiple modules using all their functionality.
2. check_file_presence function checks for the required files to start any kind of action.
3. industrymapping.html - is responsible for inserting new industry details into the database and it is also responsible for showing daily updates, based on the daily updates new industries and schemas are added to the database.
4. Once a new Industry is inserted, make sure to add the newly added industry into the index_mapping variable in the download_csv() function. Make sure that the missing Industries and the missing schemas are updated after insertion by refreshing the flask app by switching between pages.
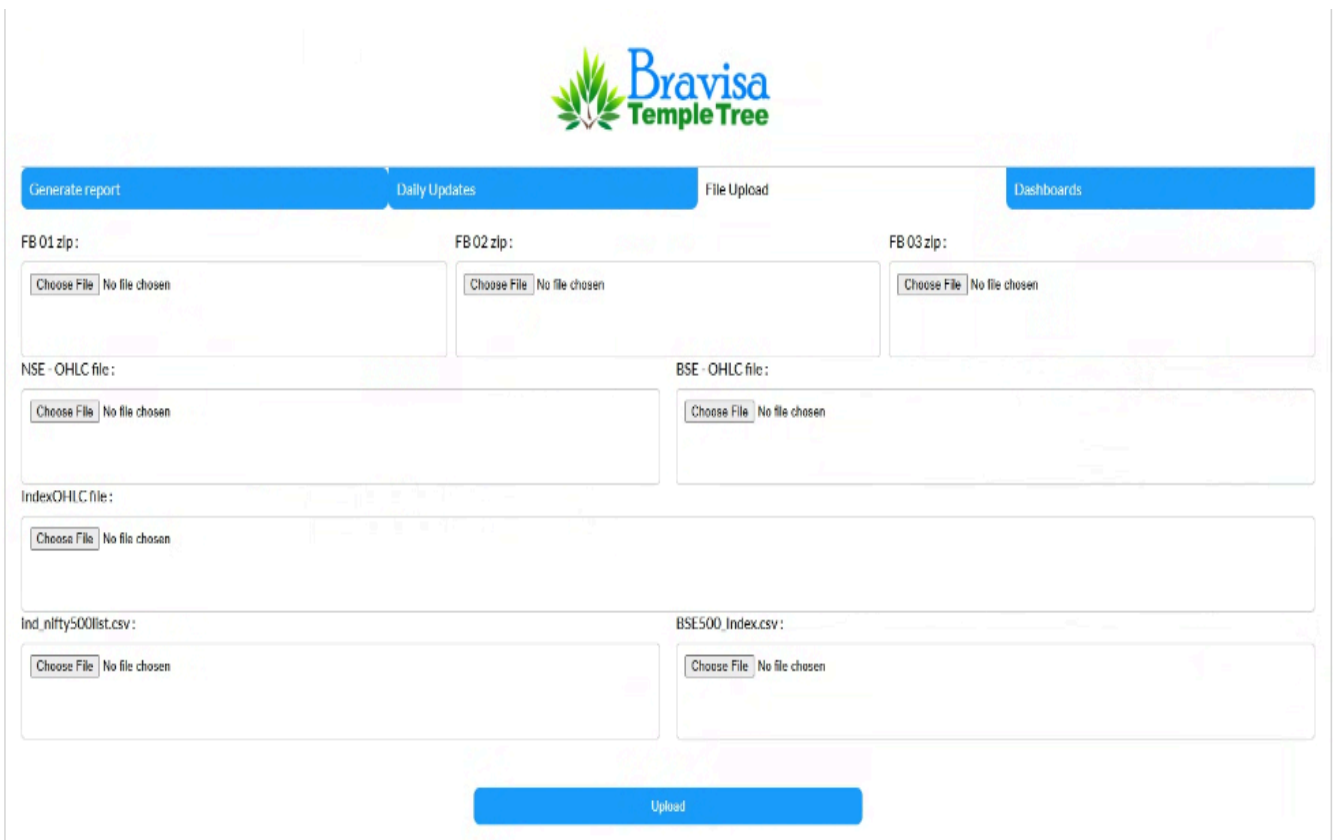
5.   The main process() connects to the db and gets required details along with what type of action to perform like, start_date, end_date, is_holiday, insert or generate or insert and generate, delete reports etc. Download data offers all reports or single reports.

6.   insert_data uses the lib/fb_insert.py to insert all the FB files into the database with specific delete query for every table.

7.   report_generation uses the utils/script_helper.py where the module generates a series of reports based on the day, depending on the day the if it's the first day of the month BTT list is generated and so on. EPS() uses reports.EPS.py , EERS() uses reports/EERS.py, SMR() - uses reports/SMR.py, OHLC - uses lib/ohlc.py, IndexOHLC - uses lib/indexohlc.py, PE - uses lib/ PE.py, PRS() - uses reports/PRS.py, IRS - uses reports/IRS.py

8.   The script_helper.py file contains more reports and dash_process modules along with mf_analysis modules and controls which reports are to be generated based on the current day.

9.   delete_data() function deletes all the reports data from the database within the given date.

10.   download_csv() function lets you download reports within the date range, make sure to add the index_map for a new industry to ensure proper index names for industries while downloading the csv files.

11. download_txt option downloads all the txt formatted files that are required for another software.

Software User Manual

Features pages available

1. Upload File
2. Generate report
3. Daily Updates
4. Dashboards

Upload file:

In this file we have 3 files: FB 01,FB 02 and FB 03 these are all zip files this data will come
based on the daily basis
Example,

1. FB0101202101.zip
2. FB0101202102.zip
3. FB0101202103.zip

FB 01 zip :	FB 02 zip :	FB 03 zip :
Choose File No file chosen	Choose File No file chosen	Choose File No file chosen

OHLC Files three types: NSE OHLC ,BSE OHLC and INDEX OHLC

Example,

1. Ind_close_all_01012025.csv
2. BhavCopy_BSE_CM_0_0_0_20240708_F_0000.CSV
3. BhavCopy_NSE_CM_0_0_0_20240719_F_0000.csv

Index Files are uploaded only on the first day of the month to generate BTTList.

Example,

1. BSE500_Index.csv
2. Ind_nifty500list.csv

Step 1 : Choose the file

NSE - OHLC file :

| Choose File | BhavCopy_NSE_CM_0_0_0_20250201_F_0000.csv |

BSE - OHLC file :

| Choose File | BhavCopy_BSE_CM_0_0_0_20250201_F_0000.CSV |

IndexOHLC file :

| Choose File | ind_close_all_01022025.csv |

Ind_nifty500list.csv :

| Choose File | ind_nifty500list.csv |

BSE500_Index.csv :

| Choose File | BSE500_Index.csv |

Upload

After uploading all the files click upload and It will be uploaded.

Upload
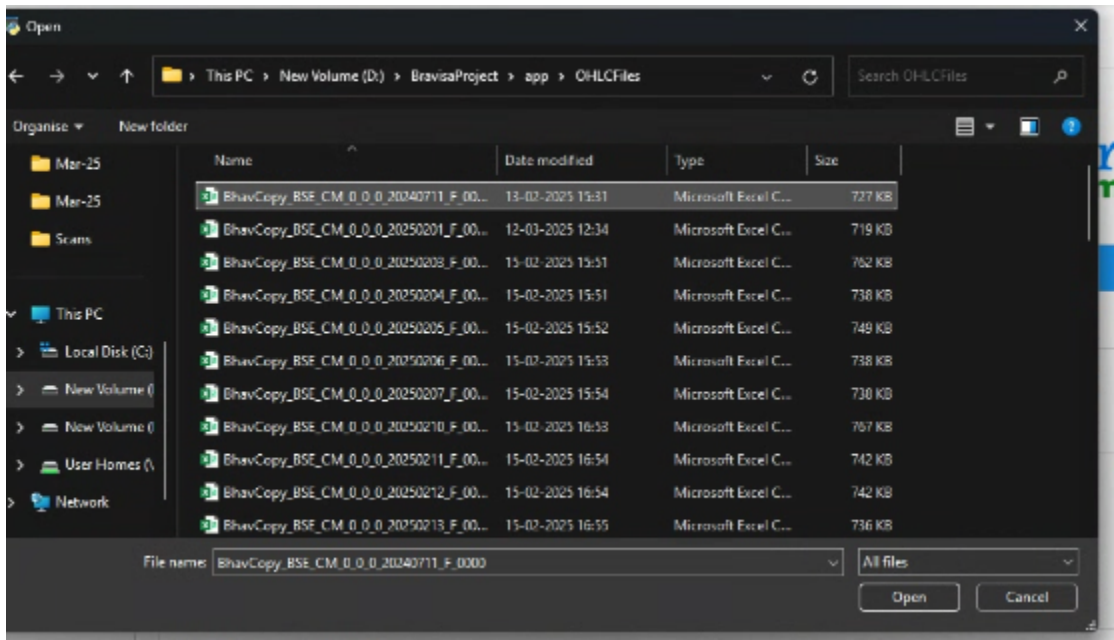
Files uploaded successfullyFiles: BhavCopy_NSE_CM_0_0_0_20250201_F_0000.csv, BhavCopy_BSE_CM_0_0_0_20250201_F_0000.CSV, ind_close_all_01022025.csv, ind_nifty500list.csv, BSE500_Index.csv

Generate Report

Bravisa
Temple Tree

| Generate report | Daily Updates | Upload File | Dashboards |

Last Dates ->   report generation : 2025-03-07   insert : 2025-01-31

From: To:

| dd-mm-yyyy | 📅 | | dd-mm-yyyy | 📅 |

| Insert Data | ⌄ | | Submenu 1 | ⌄ |

Holiday: ☐

Submit

Last Dates indicate the most recent date for which the data has been inserted or the reports have been generated.

Last Dates ->   report generation : 2025-03-07   insert : 2025-01-31

There are two date selectors for the start date and the end date, this gives us the ability to run multiple days with one click, if you want to run only one day include the same dates on both the selectors.

After Inserting the data only we can generate the report.
The insert date should not be lower than the report generation date

In the drop down below the date selectors, it has features like Generate report,Insert data and Generate report,Delete data,Delete report,Download Csv and Download txt

Insert Data

Insert Data
Generate Report
Insert and Generate Report
Delete Data
Delete Report
Download CSV
Download txt
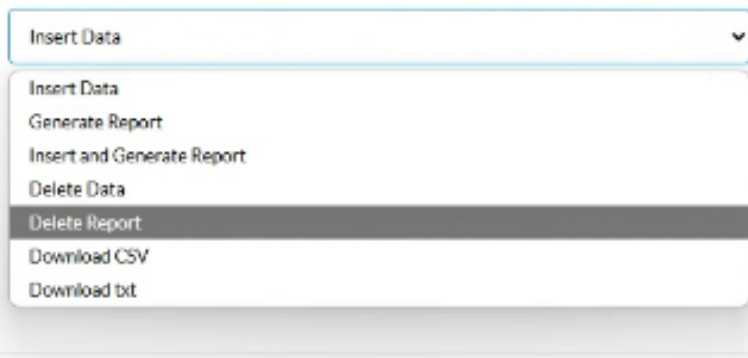
1. Insert Data
   Add the Fb files data In fb file we have 3 files on daily basis
   Example:
   FB0101202101→Format(FB0Date0MonthYear01)
   FB0101202102→Same format 02rd file
   FB0101202103→Same format 03rd file

   Completed: Insert data processing successful

2. Generate Report - generates the various reports such as,
   a. Main reports - EPS, EERS, SMR, FRS, MFOHLC, OHLC, index_ohlc, split_bonus, PE, PRS, IRS

b. Reports that depend on Main reports - IndexCloseChange, BTTIndex, CombinedRank, perstock_offhighlow, perstock_change, index_offhightlow
c. MF analysis - RTprocess - Daily, weekly, monthly, EMA50 - Daily, weekly, monthly, MarketQualityNSE500, MarkerQualityNIFTY.

After Inserting the data in Generate report It will pop up the message
Completed: Insert data processing successful

Holiday: ☐

In generating reports it has features like Holiday .We can choose this feature when we have leave on weekdays.
When we choose a holiday we can only insert the data we won't generate the report for that day.

3. Insert and Generate Report
It combines both Insertion and Report generation.

4. Delete Data
It removes FB data from the database

5. Delete Report - will delete reports that are generated such as EPS, PRS, IRS etc.

Traditional Delete
Traditional Delete
EPS
EPS_StandAlone
EPS_Consolidated
PRS
SMR
IRS
FRS-NavRank
CombinedRS
BTT

6. Download CSV has

All Reports
All Reports
EPS
Standalone EPS
Consolidated EPS
EERS
Standalone EERS
Consolidated EERS
PRS
SMR
IRS
FRS-NavRank
FRS-MFRank
FRS-NAVCategoryAvg
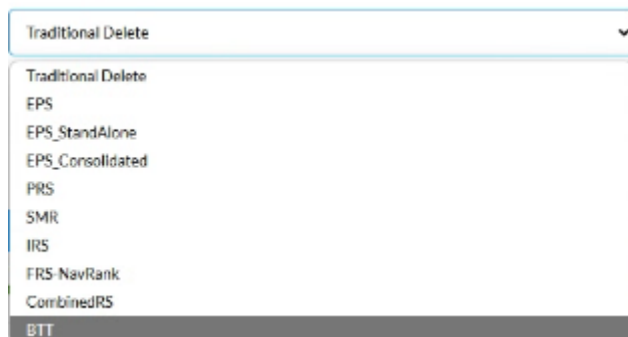
7. Download txt - gives us the ability to download txt files which are in the format specified by Bravisa team.

All files
All files
NSE
BSE
IRSOHLC
MFOHLC

Daily updates

IndexNames which are 14 letter special symbols provided by Bravisa team, can be added for the missing IndexNames which are present in the IRS report for specifying the particular industry.

This section also shows the number of new IndustryCode in the BackgroundInfo table which doesn't have IndustryMapping, use the get list button to download the template for IndustryMapping which contains all the missing codes.

Create a Index name for it which are all missing

After Submitting the data it shows New IndexMapping data added Successfully

New IndexMapping data added successfully.

The data will stored in the Database

Switch between pages to refresh the count of missing IndexNames.

New Industries will show up in the backgroundInfo table in order to map them with the appropriate industry details they need to be explicitly added through the IndustryMapping upload feature.

Use the getlist button for the missing InustryCodes to get the list of codes in the format of IndustryMapping table.

Number of missing IndustryCodes: 1   **get list**

New SchemeCodes in SchemeMaster : 51   **get list**

IndustryMapping: Choose File | No file chosen

Upload

mf_category_mapping :   Choose File | No file chosen

Upload   **ignore**

Data downloaded successfully.

Fill in the details and use the same file to upload, you can use any other file too but please make sure that the column names are the same and the template that was provided from the getlist file is the same as the file you are uploading.
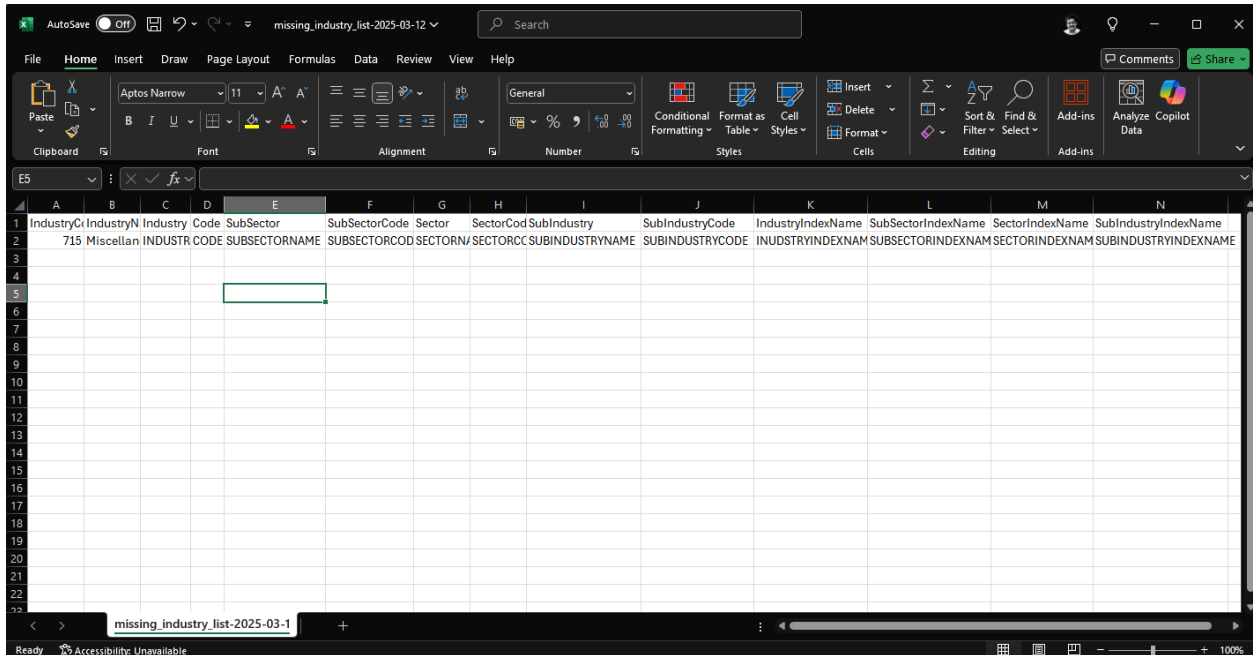
Use the IndustryMapping upload feature to insert all the missing IndustryMapping with all the details filled from the get list that you downloaded earlier.
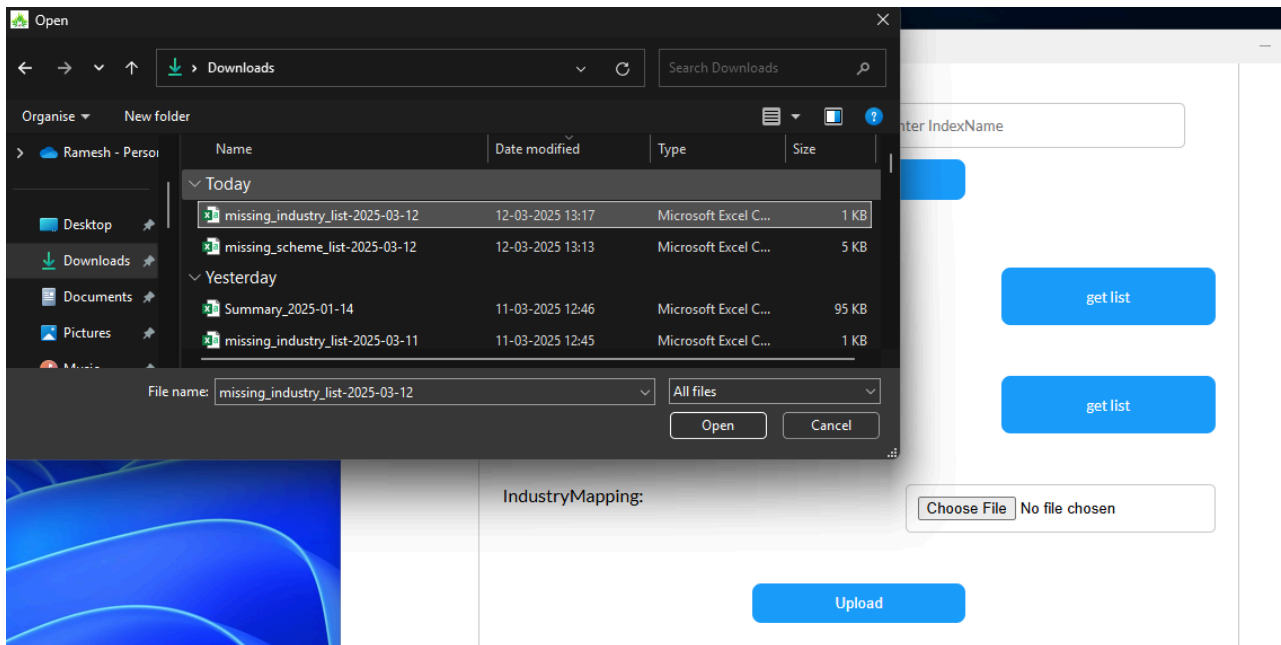
After successful insertion there will be a message from the software like this.

IndustryMapping:

Choose File | missing_ind...25-03-12.csv

Upload

mf_category_mapping :

Choose File | No file chosen

Upload   ignore

missing_industry_mapping data inserted successfully.

Missing Scheme Master section shows the list of missing scheme codes that are new to the SchemeMaster table which does not have a mf_category_mapping, use the get list button to download the list of missing SchemeCodes in the mf_category_mapping template.
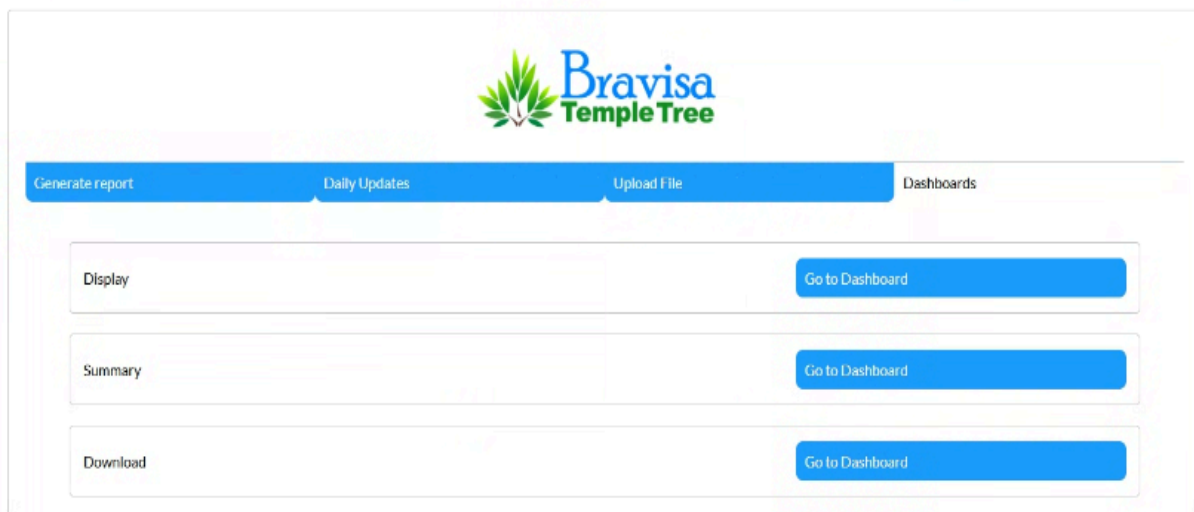

There is two options for handling missing SchemeMaster list,

1. Upload the downloaded list by filling all the columns, you can skip certain codes by removing the entire row from the table.
2. Ignore will add all the remaining codes to an ignore list which will ignore them from then, please be cautious while using the ignore button, make sure you have updated the mf_category_mapping by uploading all the codes that are important and then use the ignore button.

Dashboards

It has options like Display,Summary and Dashboard pages.


Display Dashboard:

In the Display page provide NSE Code and Date.

The data will be displayed like this.

DISPLAY DASHBOARD

ARVIND | 18-12-2024 | Search

Industry: Textiles | Rank: 75.93

PRS : 84.27 | ERS : 27.78 | EERS : 23.18

Change %: 76.93 | RS 30 Days: 96.96 | RS 90 Days: 80.04

Consolidated EPS Data

QUATER	CONS EPS	GROWTH	SALE	SALE GROWTH	EERS	EERS GROWTH
Q1	0.23	-25.39	2200.18	13.79	0.89	6.92
Q2	null	null	null	null	0.62	-15.36
TTM1	null	-11.43	null	4.42	null	null
TTM2	null	-18.55	null	-15.04	null	null
TTM3	null	115.86	null	-8.74	null	null

Standalone EPS Data

QUATER	CONS EPS	GROWTH	SALE	SALE GROWTH	EERS	EERS GROWTH
Q1	0.04	-86.75	2037.11	14.92	0.83	11.02
Q2	0.15	-37.86	1702.14	-0.23	0.56	-15.07
TTM1	null	-48.26	null	-22.04	null	null
TTM2	null	32.84	null	-15.46	null	null
TTM3	null	-28.51	null	-30.48	null	null

Summary Dashboard

Fill the Date for which you want to download the summary and click the download button.
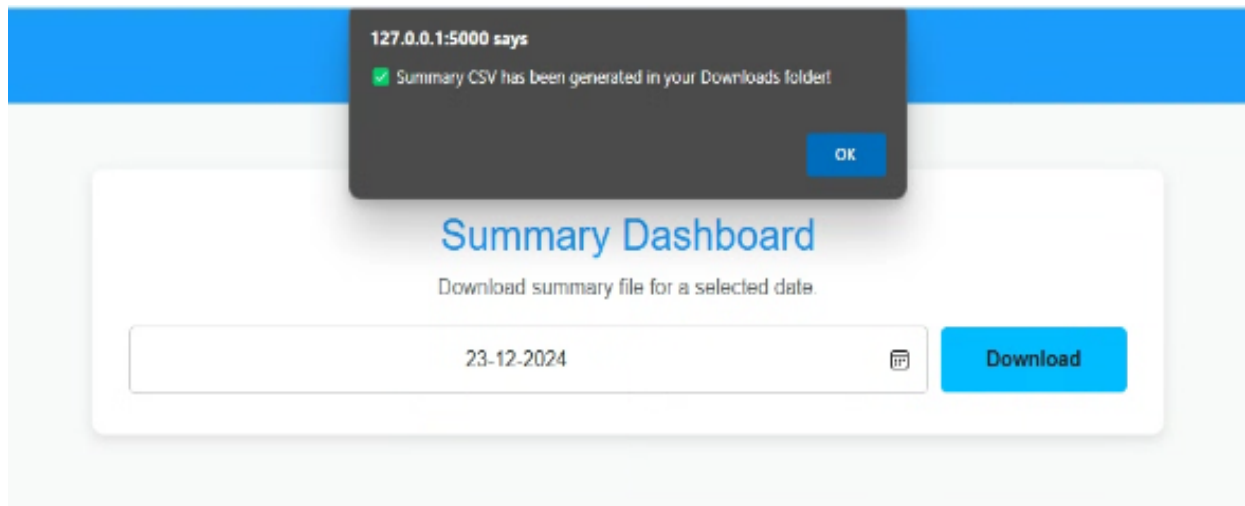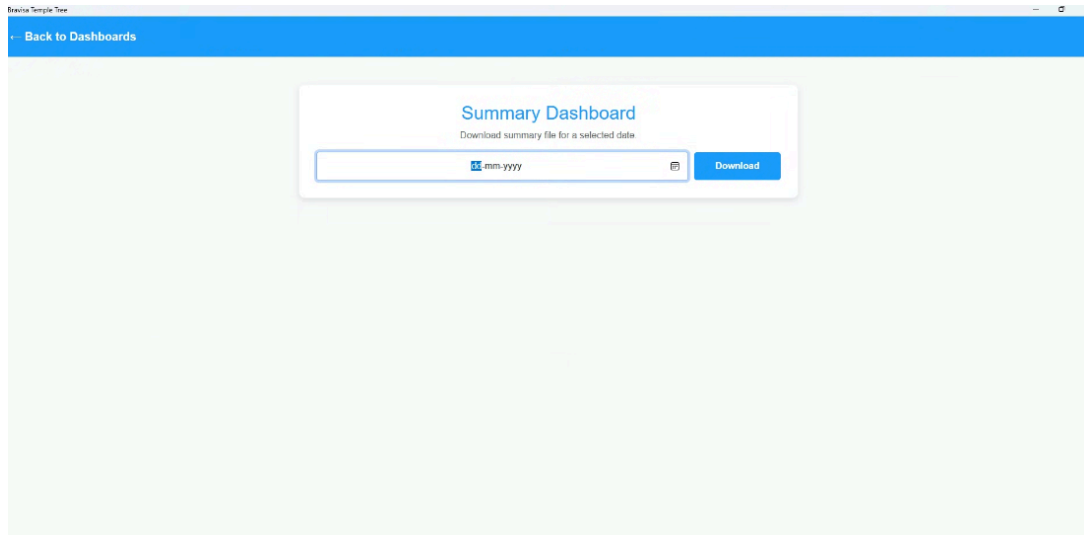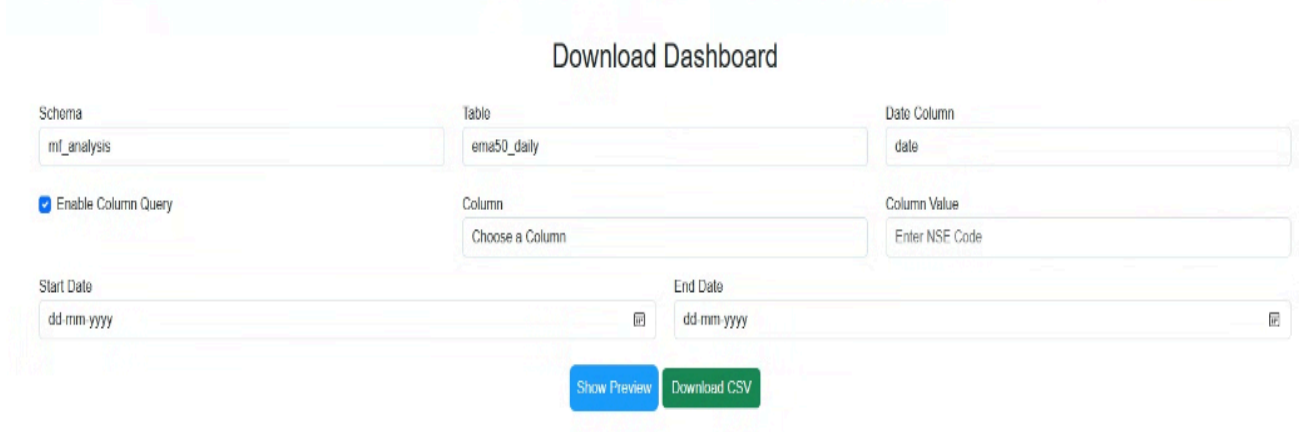

When we click download It will Popup the message Summary CSV has been generated in your Download folder
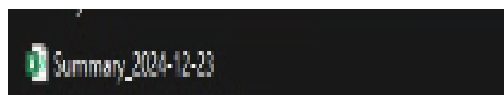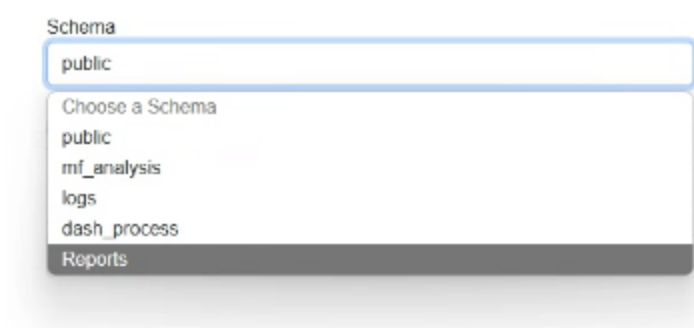
Download dashboard

Download dashboard provides you with the ability to download and table from the database where there exists a date column, Choose the schema, table, date column and mention that date range you want to preview or download.
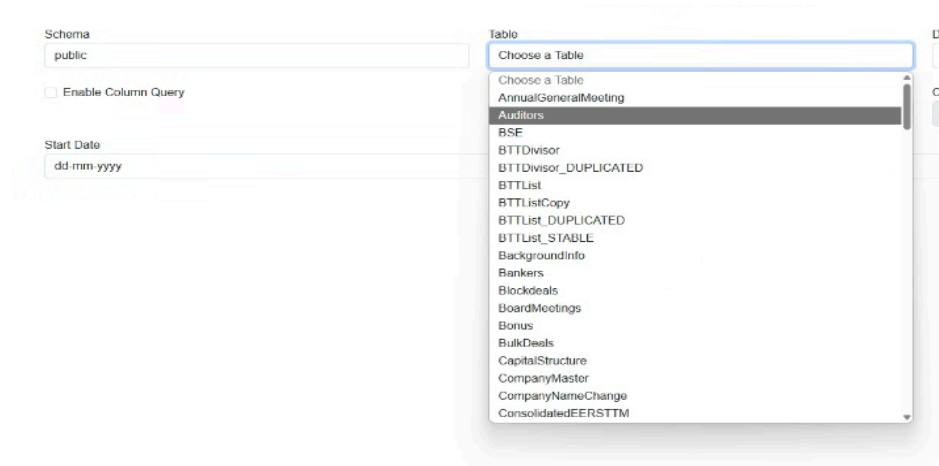

All schemas are available to be selected,

Select schema and Table

you can fetch all the data from the database from starting date to ending date

Download Dashboard

Schema	Table	Date Column
mf_analysis	indicators	gen_date

☐ Enable Column Query

Column	Column Value
Choose a Column	Enter NSE Code

Start Date	End Date
18-12-2024	12-02-2025

Show Preview Download CSV

Your desktop is currently shared with hanuraj11@gmail.com   Stop Sharing

Table Preview

company_code	company_name	nse_code	bse_code	open	high	low	close	volume	ema13	ema26	macd	macd_signal	macd_diff	atr	gen_date	ema12	ema50
14010688.0	360ONE	360ONE	542772	1255.05	1270.0	1226.15	1240.8	525759	nan	nan	nan	nan	nan	nan	2024-12-18	nan	nan
12520002.0	HINDUNILVR	HINDUNILVR	500696	2350.05	2383.0	2350.05	2359.2	988403	2407.91	2463.1	-59.24	-59.78	0.55	49.89	2024-12-18	2403.86	2538.23
15100034.0	HINDZINC	HINDZINC	500188	491.15	492.2	481.4	485.35	910000	498.56	503.01	-4.84	-4.19	-0.65	13.06	2024-12-18	498.17	511.66
13130037.0	POWERINDIA	POWERINDIA	543187	13199.05	13199.05	12666.0	12841.35	48855	nan	nan	nan	nan	nan	nan	2024-12-18	nan	nan
14094153.0	HOMEFIRST	HOMEFIRST	543259	1027.5	1051.8	1000.0	1004.6	396881	nan	nan	nan	nan	nan	nan	2024-12-18	nan	nan

Activate Windows
Go to Settings to activate Windows.
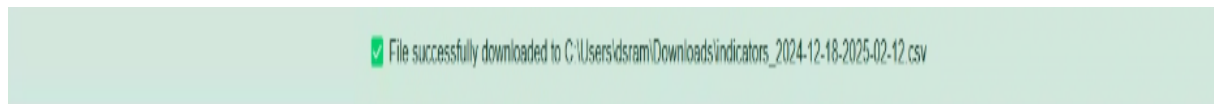
When you click preview .You can view the data

company_code	company_name	nse_code	bse_code	open	high	low	close	volume	ema13	ema26	macd	macd_signal	macd_diff	atr	gen_date	ema12	ema50
14010688.0	360ONE	360ONE	542772	1255.05	1270.0	1226.15	1240.8	525759	nan	nan	nan	nan	nan	nan	2024-12-18	nan	nan
12520002.0	HINDUNILVR	HINDUNILVR	500696	2350.05	2383.0	2350.05	2359.2	988403	2407.91	2463.1	-59.24	-59.78	0.55	49.89	2024-12-18	2403.86	2538.23
15100034.0	HINDZINC	HINDZINC	500188	491.15	492.2	481.4	485.35	910000	498.56	503.01	-4.84	-4.19	-0.65	13.06	2024-12-18	498.17	511.66
13130037.0	POWERINDIA	POWERINDIA	543187	13199.05	13199.05	12666.0	12841.35	48855	nan	nan	nan	nan	nan	nan	2024-12-18	nan	nan
14094153.0	HOMEFIRST	HOMEFIRST	543259	1027.5	1051.8	1000.0	1004.6	396881	nan	nan	nan	nan	nan	nan	2024-12-18	nan	nan

After clicking the download It shows file successfully downloaded with the path to where it is downloaded, usually the Downloads folder.

✅ File successfully downloaded to C:\Users\dsram\Downloads\indicators_2024-12-18-2025-02-12.csv

Fill in the details for the schema, table name, date column, start date, and end date, then click Preview to view the data.

You cannot change the table name within the selected schema. If you need to select a different table, you must first reselect the schema, then choose the desired table name. Alternatively, you can navigate Back to Dashboard, return to the Download Dashboard, and fill in the necessary details again.

You cannot enable the column query when only the schema, table, date column, start date, and end date are selected.

To perform a column query, you must first know the column name. To do this, preview the data to identify the column name and its values.

Download Dashboard

Only column which are not a date type will be shown in the column dropdown,

Columns which are of date types will be present in the Date column dropdown,

Apply the column query to retrieve the specific data in a table where you need to apply a filter for a specific value from a column of the desired table.

Download Dashboard

Schema	Table	Date Column
public	BSE	TRADING_DATE

☑ Enable Column Query

Column	Column Value
SC_CODE	531840.0

Start Date	End Date
16-10-2024	04-02-2025

Show Preview · Download CSV

Table Preview

SC_CODE	SC_NAME	SC_GROUP	SC_TYPE	OPEN	HIGH	LOW	CLOSE	LAST	PREVCLOSE	NO_TRADES	NO_OF_SHRS	NET_TURNOV	TDCLOINDI	ISIN_CODE	TRADING_DATE
531840.0	IECEDU	XT	None	23.21	23.21	23.21	23.21	23.21	22.76	1.0	10.0	232.0	None	INE172B01017	2024-12-04
531840.0	IECEDU	XT	None	23.67	23.67	23.67	23.67	23.67	23.21	2.0	60.0	1420.0	None	INE172B01017	2024-12-05
531840.0	IECEDU	XT	None	24.14	24.14	24.14	24.14	24.14	23.67	1.0	10.0	241.0	None	INE172B01017	2024-12-06
531840.0	IECEDU	XT	None	25.11	25.11	25.11	25.11	25.11	24.62	2.0	366.0	9190.0	None	INE172B01017	2024-12-10
531840.0	IECEDU	XT	None	25.61	25.61	25.61	25.61	25.61	25.11	1.0	10.0	256.0	None	INE172B01017	2024-12-11
531840.0	IECEDU	XT	None	26.12	26.12	26.12	26.12	26.12	25.61	3.0	320.0	8358.0	None	INE172B01017	2024-12-12
531840.0	IECEDU	XT	None	26.64	26.64	26.64	26.64	26.64	26.12	2.0	515.0	13719.0	None	INE172B01017	2024-12-13
531840.0	IECEDU	XT	None	27.17	27.17	27.17	27.17	27.17	26.64	5.0	1075.0	29207.0	None	INE172B01017	2024-12-16
531840.0	IECEDU	XT	None	27.71	27.71	27.71	27.71	27.71	27.17	2.0	620.0	17180.0	None	INE172B01017	2024-12-17

Do not try to download or preview the data without selecting the column and the column value while you have enabled the column query option.

Development and Testing

Development and testing is done with jupyter notebook files found throughout the directory, Every ipynb file is well documented with what every cell executes. Data flow for every report is documented in a flowchart manner and is available in the flow chart folder.