Relative Strength Strategy

Importing Required Libraries

You start by importing the necessary Python libraries for your project. These libraries include data manipulation (pandas, numpy), data visualization (matplotlib, seaborn, plotly.express), financial data retrieval (yfinance), web scraping (jugaad_data.nse), streamlining (streamlit), and file handling (pickle).

Extracting Data

You define a function extract_zip to extract files from a zip archive. You then extract a zip file containing stock data from a specified directory. You load the extracted data files and concatenate them to create a data DataFrame. You filter the data based on market cap and remove unwanted columns.

Data Analysis

You perform some data analysis on the extracted stock data. You create a dictionary stocks_list containing stock symbols categorized by industry sectors. You then download historical stock data using the yfinance library, calculate daily returns, and perform various computations on the stock data.

Relative Strength Analysis

You define a function return_analysis to analyze the relative strength of stocks in a sector. The function calculates various metrics such as weekly, monthly, and quarterly returns, market capitalization, weights, and weighted returns. You apply this function to different sectors and store the results in the sector_analysis list.

Nifty Index Analysis

You define a function nifty_ret to analyze the returns of the Nifty index. The function downloads Nifty index data, calculates returns, and returns the results.

Stock Selector

You define a function stocks_selector to select stocks based on their relative strength scores. The function compares the returns of stocks with sector-specific thresholds and the Nifty index returns. It returns a DataFrame with selected stocks.

Sector Analysis

You iterate through different sectors, apply the stocks_selector function, and store the results in the sector_returns list. You also collect sector-wise index returns in the sector_indices dictionary.

Saving Data

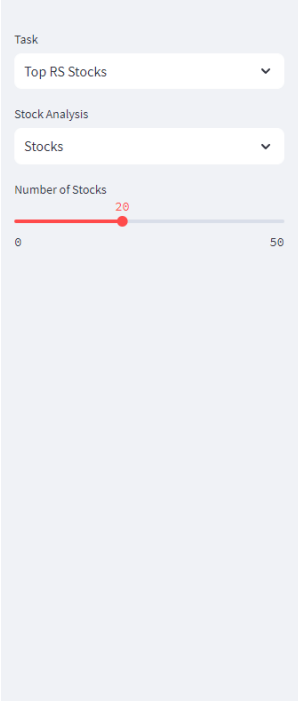
You save the analysis results using the pickle library.

Streamlit Web App

You load the saved data and create a Streamlit web app interface for users to interact with. The app provides three main options:

Top RS Stocks:

Allows users to analyze top-performing stocks.



Relative Strength Strategy

Top RS Stocks

	sector	stock_name	RS
0	Steel/Sponge Iron/Pig Iron	JAIBALAJI.NS	2.8129
1	IT - Software	ZENTEC.NS	1.6198
2	Cement & Construction Materials	SANGHIIND.NS	1.4433
3	Printing And Publishing	MPSLTD.NS	1.4019
4	Engineering - Construction	PATELENG.NS	1.362
5	Engineering - Construction	INDIANHUME.NS	1.3353
6	Engineering - Construction	MANINFRA.NS	1.0187
7	IT - Software	XCHANGING.NS	0.9503
8	Engineering - Construction	DBL.NS	0.946
9	IT - Software	NINSYS.NS	0.9405
10	Pharmaceuticals & Drugs	NEULANDLAB.NS	0.9378
11	Engineering - Construction	VASCONEQ.NS	0.9314
12	Finance - Stock Broking	ARIHANTCAP.NS	0.9306
13	Finance - Stock Broking	DHANI.NS	0.9123
14	Logistics	RITCO.NS	0.8869

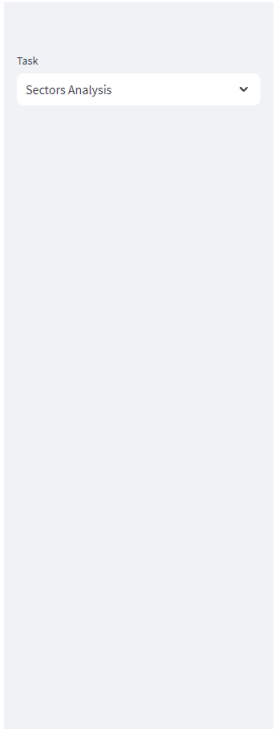
Relative Strength Strategy

Stocks Sector Distribution

	sector
Engineering - Construction	6
IT - Software	3
Cement & Construction Materials	2
Finance - Stock Broking	2
Finance - Others	2
Steel/Sponge Iron/Pig Iron	1
Printing And Publishing	1
Pharmaceuticals & Drugs	1
Logistics	1
IT - Hardware	1

Sectors Analysis:

Displays sector return analysis.



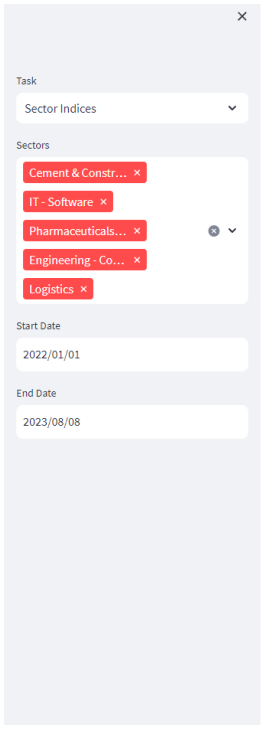
Relative Strength Strategy

Sector Return Analysis

sectors	week_ret	monthly_ret	quarterly_ret
Pharmaceuticals & Drugs	2.846950	11.850543	23.368011
Chemicals	1.355226	1.025937	1.412482
IT - Software	2.405730	4.683890	11.791896
Auto Ancillary	-1.590869	2.915162	19.766083
Engineering - Industrial Equipments	-0.941558	9.795222	29.881346
Steel & Iron Products	-1.698730	7.373398	20.338942
Construction - Real Estate	-3.275758	3.366979	24.856971
Textile	1.563624	4.068889	8.653692
Finance - NBFC	-1.452057	-0.359867	15.621760
Consumer Food	0.418067	1.337283	7.802057
Cement & Construction Materials	0.577999	3.378934	8.252490
Engineering - Construction	0.075482	9.977577	15.947249
Electric Equipment	-0.888976	4.343732	21.632955
Plastic Products	1.962526	10.868099	25.539944
Finance - Investment	-4.030767	-2.993311	11.130389
Pesticides & Agrochemicals	1.311487	-2.712348	2.637024
Fertilizers	-0.300091	0.998134	14.310621
Sugar	0.429033	6.085286	5.730633

Sector Indices:

Displays equity curves of selected sectors.



Top Stocks

Number of Stocks

5

0 20

		0	1	2
Cement & Construction Materials	stock_name	SANGHIIND.NS	ORIENTCEM.NS	KESORAMIND.NS
Cement & Construction Materials	RS	1.4433103809716226	0.8365690986781062	0.68789528223264
IT - Software	stock_name	ZENTEC.NS	XCHANGING.NS	NINSYS.NS
IT - Software	RS	1.6197560764124552	0.9502819358905001	0.94047376018785
Pharmaceuticals & Drugs	stock_name	NEULANDLAB.NS	RPGLIFE.NS	SMSPHARMA.NS
Pharmaceuticals & Drugs	RS	0.9378182935446433	0.7348458101763815	0.61912378342643
Engineering - Construction	stock_name	PATELENG.NS	INDIANHUME.NS	MANINFRA.NS
Engineering - Construction	RS	1.3620153841668148	1.3353202908580744	1.0187278847665

Summary

In summary, this project involves extracting stock data, analyzing relative strength, and creating a web app using Streamlit to visualize and analyze the performance of various sectors and stocks. Users can explore top-performing stocks, analyze sector returns, and compare sector indices through the interactive web app. The project aims to provide insights for making informed investment decisions based on relative strength analysis.