

Group 6 - Stock Exchange



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Agenda

- ❏ Overview & Problem Statement
- ❏ Dataset Description
- ❏ Glimpse of Data
- ❏ Design Process
- ❏ Shiny App
- ❏ Demo
- ❏ Continuous Learning
- ❏ Observations

Stock Exchange Data

Problem Statement:

Analyze volatility of 13 stock indexes and its comparison and then predict future trend of stock market.



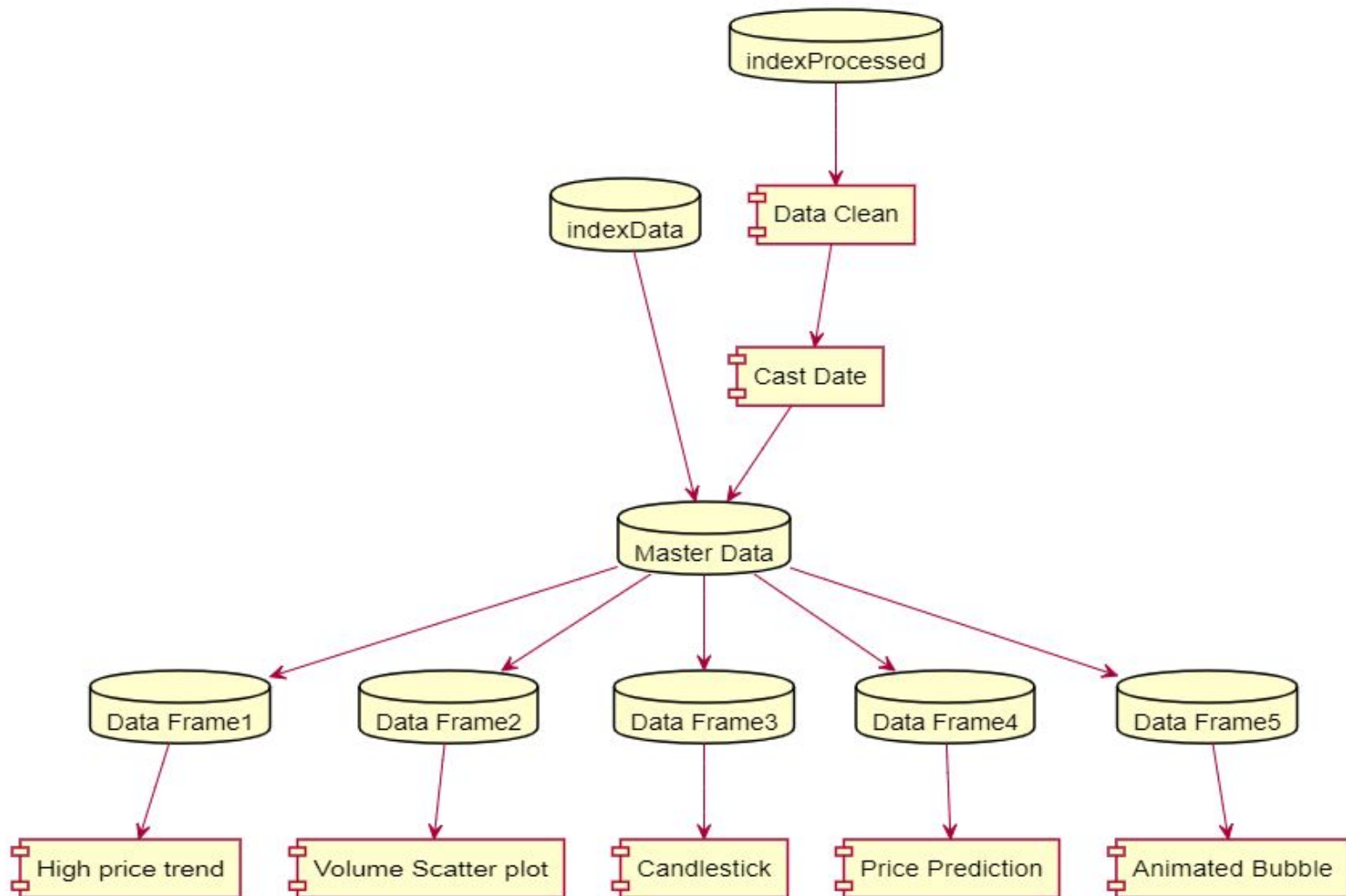
Dataset Description

Dataset	Description	Observations
1	indexData	112458
2	indexInfo	15
3	indexProcessed	104225

- indexData - Raw index price information, prices are quoted in each exchanges national currency
- IndexInfo - Stock exchange info including location, name of exchange, index ticker, and currency index is quoted in
- indexProcessed - index price information with null values removed and closing prices in USD added as a column

AutoSave		Off								indexProcessed - Read-Only			
File		Home		Insert		Draw		Page Layout		Formulas		Data Review View Developer	
A1													
Index													
Index		Date		Open		High		Low		Close		Adj Close	
Volume													
CloseUSD													
1		#####		2568.3		2568.3		2568.3		2568.3		2568.3	
2		1/2/1987		2540.1		2540.1		2540.1		2540.1		2540.1	
3		1/5/1987		2552.4		2552.4		2552.4		2552.4		2552.4	
4		1/6/1987		2583.9		2583.9		2583.9		2583.9		2583.9	
5		1/7/1987		2607.1		2607.1		2607.1		2607.1		2607.1	
6		1/8/1987		2603.3		2603.3		2603.3		2603.3		2603.3	
7		1/9/1987		2561.7		2561.7		2561.7		2561.7		2561.7	
8		1/12/1987		2614.9		2614.9		2614.9		2614.9		2614.9	
9		1/13/1987		2590.8		2590.8		2590.8		2590.8		2590.8	
10		1/14/1987		2578.2		2578.2		2578.2		2578.2		2578.2	
11		1/15/1987		2559.1		2559.1		2559.1		2559.1		2559.1	
12		1/16/1987		2542.6		2542.6		2542.6		2542.6		2542.6	
13		1/19/1987		2460.5		2460.5		2460.5		2460.5		2460.5	
14		1/20/1987		2449.9		2449.9		2449.9		2449.9		2449.9	
15		1/21/1987		2533.9		2533.9		2533.9		2533.9		2533.9	
16		1/22/1987		2536.9		2536.9		2536.9		2536.9		2536.9	
17		1/23/1987		2499.4		2499.4		2499.4		2499.4		2499.4	
18		1/26/1987		2484.4		2484.4		2484.4		2484.4		2484.4	
19		1/27/1987		2524		2524		2524		2524		2524	
20		1/28/1987		2553.3		2553.3		2553.3		2553.3		2553.3	
21		2/2/1987		2585.2		2585.2		2585.2		2585.2		2585.2	
22		2/3/1987		2606.4		2606.4		2606.4		2606.4		2606.4	
23		2/4/1987		2636.6		2636.6		2636.6		2636.6		2636.6	
24		2/5/1987		2672.4		2672.4		2672.4		2672.4		2672.4	
25		2/6/1987		2673.6		2673.6		2673.6		2673.6		2673.6	
26		2/9/1987		2713.7		2713.7		2713.7		2713.7		2713.7	
27		2/10/1987		2694.9		2694.9		2694.9		2694.9		2694.9	
28		2/11/1987		2739.5		2739.5		2739.5		2739.5		2739.5	
29		2/12/1987		2754.7		2754.7		2754.7		2754.7		2754.7	
30		2/13/1987		2740.5		2740.5		2740.5		2740.5		2740.5	
31		2/16/1987		2766.1		2766.1		2766.1		2766.1		2766.1	
32		2/17/1987		2792.1		2792.1		2792.1		2792.1		2792.1	
33		2/18/1987		2801.5		2801.5		2801.5		2801.5		2801.5	
34		2/19/1987		2775.8		2775.8		2775.8		2775.8		2775.8	
35		2/20/1987		2827.4		2827.4		2827.4		2827.4		2827.4	
36		2/23/1987		2879		2879		2879		2879		2879	
37		2/24/1987		2848.2		2848.2		2848.2		2848			

Design Process



Shiny App

The objective of Shiny App is to create interactive graphical representations of Stock Index. Here are the charts:

- High price trend
 - Overall Stock Index trend and their comparison on a given time.
- Scatter plot
 - Overall Stock Index volume and their comparison on a given time.
- Candlestick
 - Fluctuation of Stock Index on each day, month and year and their comparison
- ARIMA price prediction plot
 - Prediction of future months Fluctuation of Stock Index based on Closing price.
- Animation plot
 - Depicts overall closing price changed in comparison with other.

[Link to shiny app](#)

Continuous Improvement

- Include external factor like inflation, crude oil index, gold and silver index for prediction future stock index trend
- Include dollar index
- Include Country name in left navigation as oppose to index name
- Include more left navigation options to help predict future trend
- Include user friendly print and email options on these charts
- Include bootstrap as oppose to fluidpage for the charts so that it is responsive.

Observation Report

This report is developed using HTML based RMarkdown and bookdown. We created six sections to capture following:

- Introduction
- Data/Operation Design
- Encoding/Interaction
- Algorithm design
- User evaluation
- Future work
- Appendix

Navigate to bookdown report



Thank you