

# A data prediction framework

To visualize and predict any timeline data

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# Key features

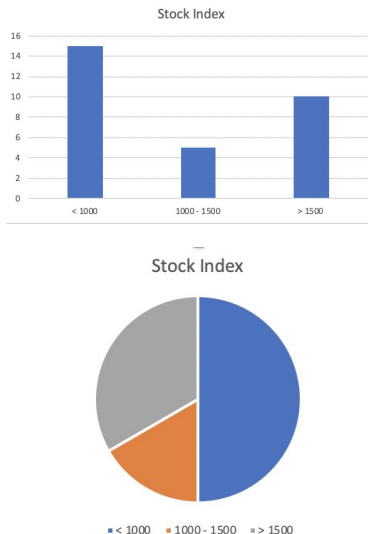
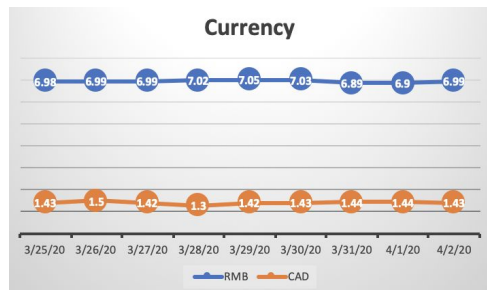
## Library:

**Org.apache.commons.math3:** The Apache Commons Mathematics Library which includes common machine learning methods (PolynomialCurveFitter, SimpleRegression...)

## Data plugin examples:

Stock price (by weekday), Unemployment rate (by month), Currency exchange rate (by weekday) ...

## Display plugin examples:



Group	RMB-USD	CAD-USD		
Mean	6.98222222	1.42333333		
SD	0.05449261	0.05220153		
N	9	9		
Median	6.99	1.43		
P-value	0.222			
Conclusion:	This difference is considered not statically significant.			

# Project Structure

## Framework

Main

### Core

Framework (interface)

Framework impl

ChangeListener (interface)

### Plugins

Data plugin (interface)

Display plugin (interface)

### Data

Data plugin impl 1

Data plugin impl 2

Data plugin impl 3

## Plugins (continued)

### Display

Display plugin impl 1

Display plugin impl 2

Display plugin impl 3

### Structure

DataSet

DisplayDataSet

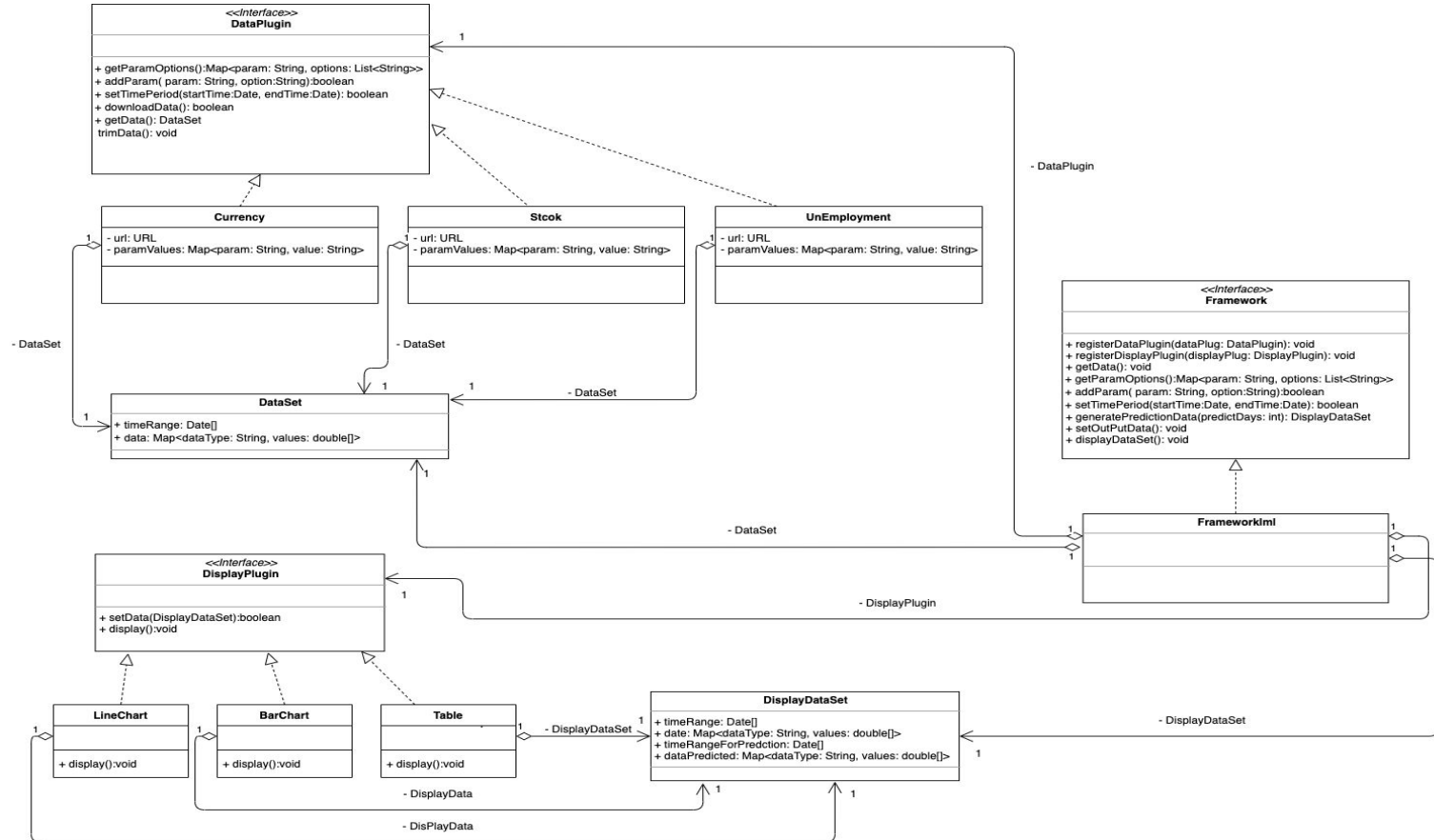
### GUI

FrameworkGUI

# Generality and Specificity

- Make predictions for the next time unit
- Reusable: Predict using the method as specified by user
- For Data plugins:
- Can generalize to various data types as long as it has a timeline
- For Display plugins:
- Can display multiple data on the same plot/chart

# UML Diagram



the framework is trying to get data from plugin

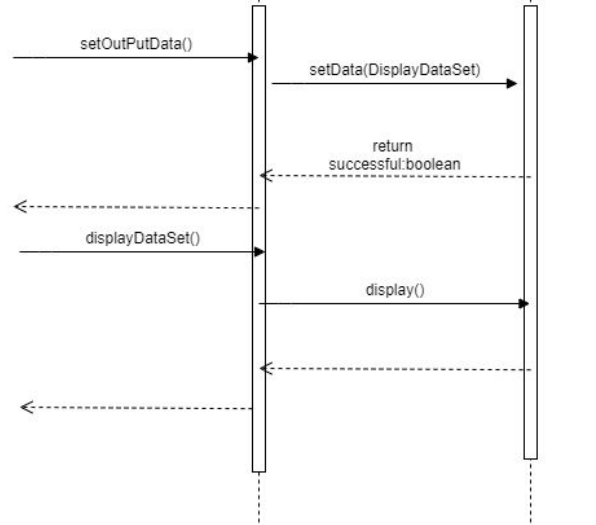
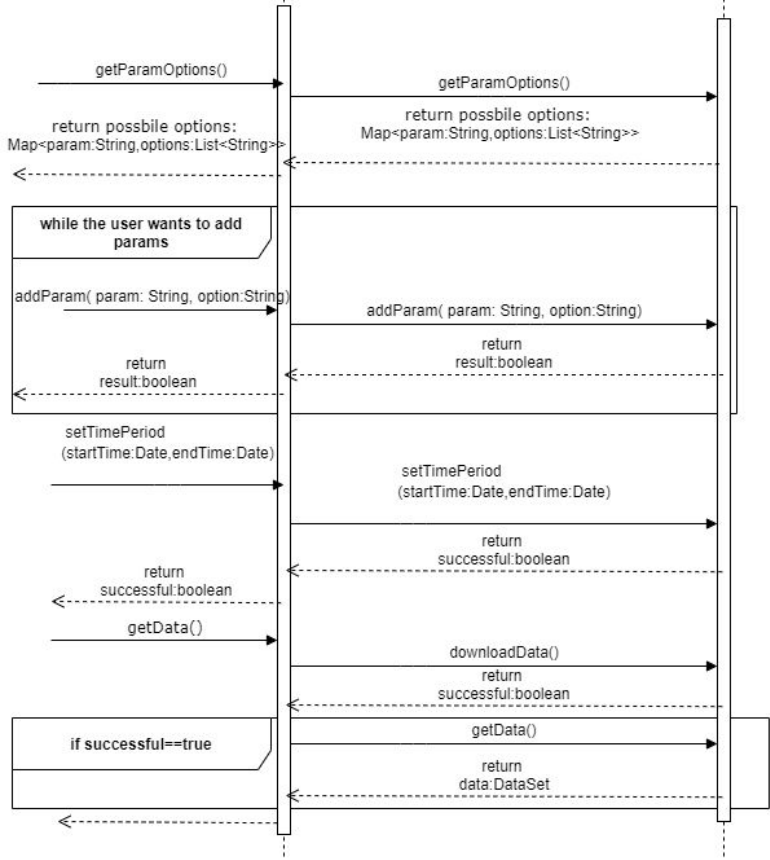
:Framework

:dataPlugin

the framework is trying to display data using plugin

:Framework

:display plugin



# Object level interaction