

Trading Presentation

Capstone Project - Vision Team

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Hamad Alodah

Presentation Agenda

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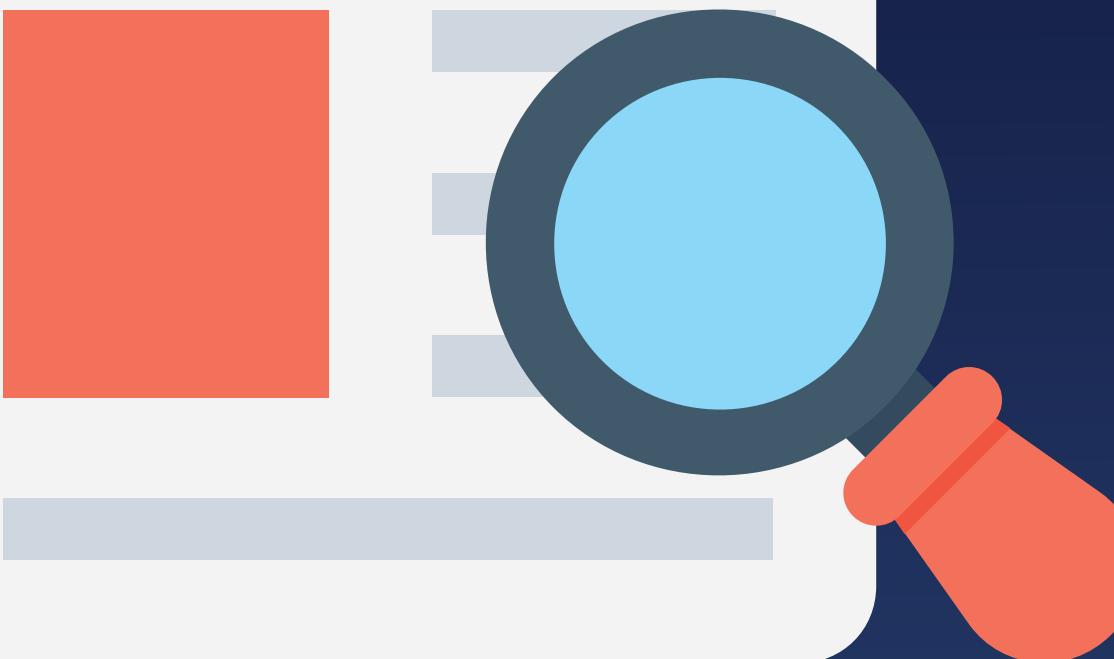
Break For A Minute



"A Creative Project is A Moving Target.
You Never End Up Where You Start "

- Evangelne Lilly

CASE STUDY



Case Study

- Think of a problem that needs to be solved.
- Research the domain of the dataset.
- Perform EDA on the dataset.
- Build a machine learning models.
- summary/overview Dashboard.
- Present your findings.



Business Problem



The predictions give businesses insights that result in tangible business value. And because Vision 2030 has a special program to develop the financial sector, we were interested in forecasting the data of the Tadawul market.

Saudi's 2030 vision

The [Financial Sector Development Program \(FSDP\)](#) is one of several executive programs developed to help achieve the objectives of Vision 2030.

The [Financial Sector Development Program](#) aims to develop a diversified and effective financial sector.



Tadawul Dataset

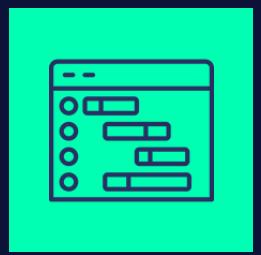


مجموعة تداول السعودية
Saudi Tadawul Group

Tadawul is the main stock exchange in the Kingdom of Saudi Arabia. The market value of shares of companies listed on the main market is estimated at 9.8 trillion Saudi riyals.



Our Process



Gantt Chart



Perform EDA



**Build Machine
Learning Models**



Tableau Dashboard



Documentation

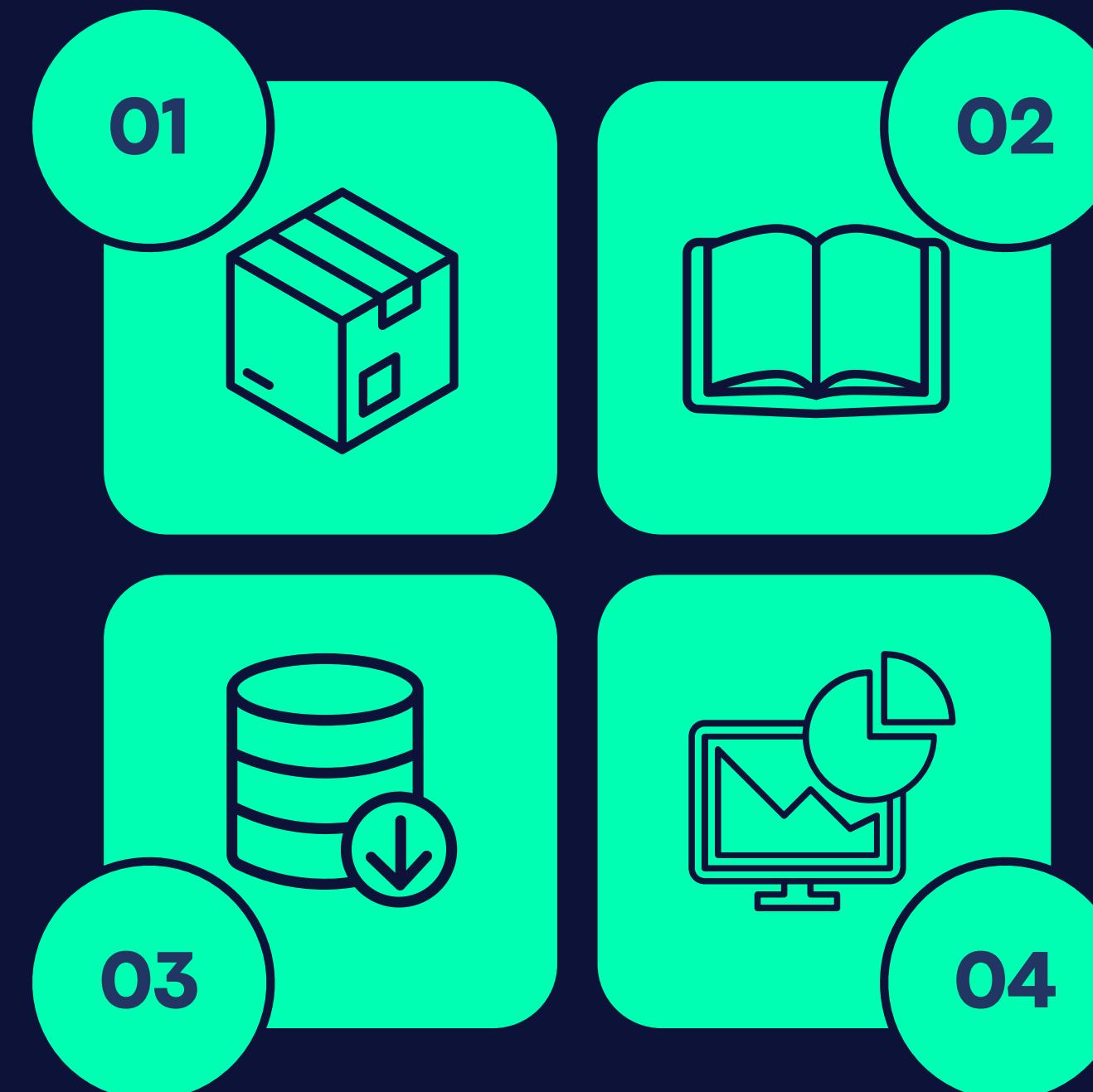


Publish Work

Part 1

Load Packages

Are a way of structuring Python's module namespace by using "dotted module names"



Import Dataset

A Dataset is the basic data container in PyMVPA

Load Libraries

A Python library is a collection of related modules.

EDA

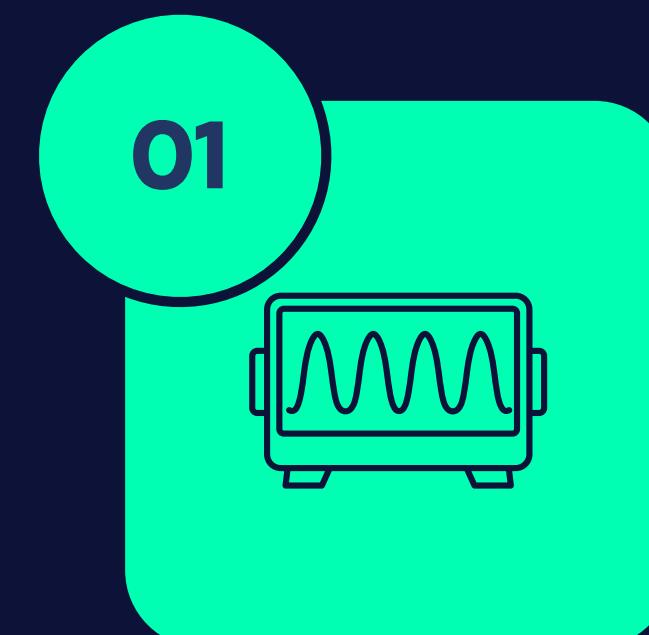
exploratory data analysis is an approach of analyzing data sets to summarize their main characteristics



Model and Machine Learning

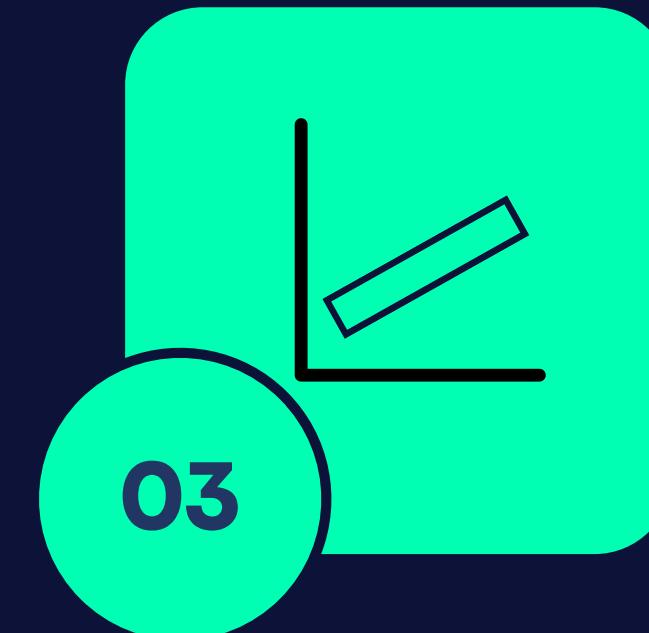
ARIMA model

Autoregressive integrated moving average



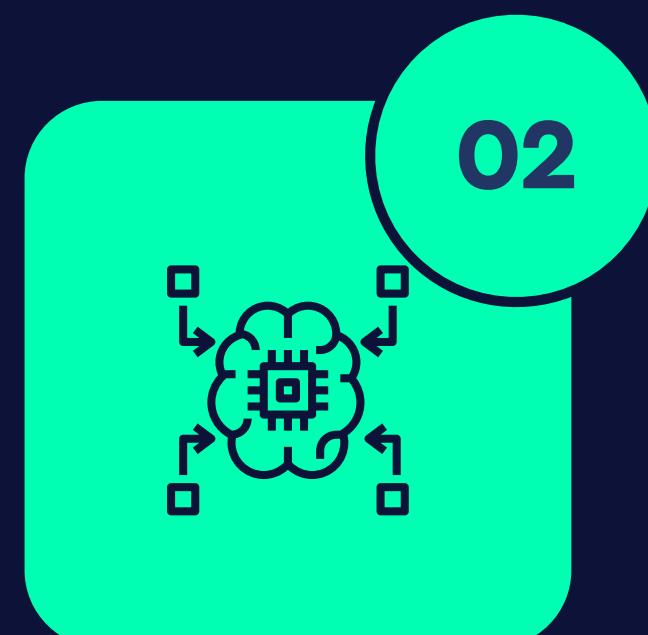
SVM Model

Support Vector Machine Model



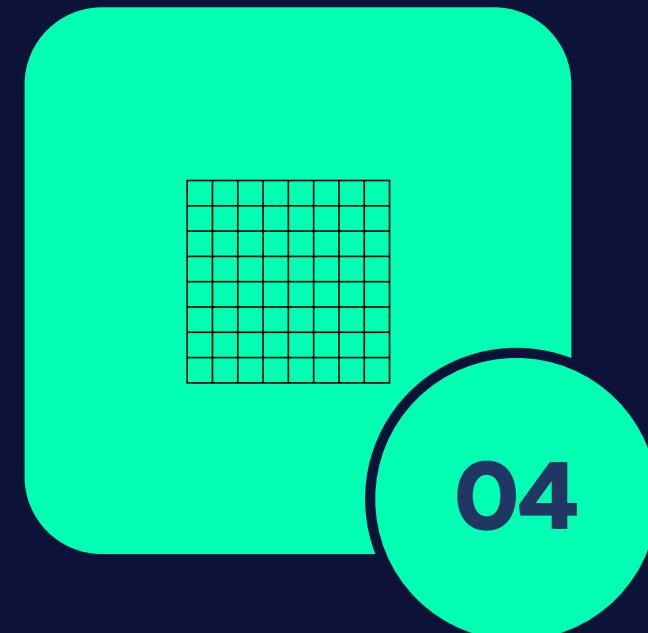
LSTM Model

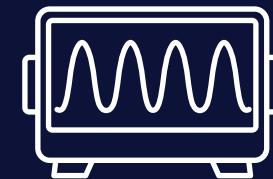
Long short-term memory



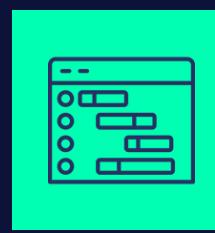
Grid search

To attempts to compute the optimum values of hyperparameters

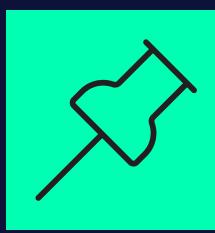




ARIMA model



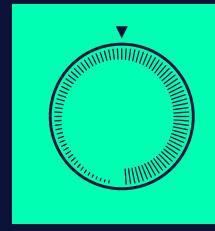
Preprocessing



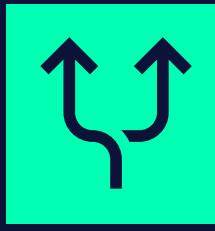
Stationarity



Differencing



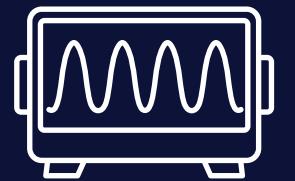
Checking The Min &
Max Date



Split



Apply ARIMA Model

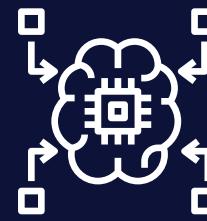


Result ARIMA model

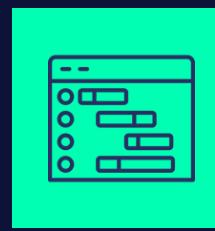
MAE = 32.815

MSE = 1101.555

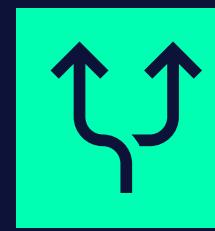
R2 = -43.486



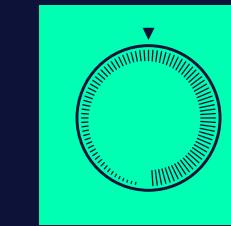
LSTM model



Preprocessing



Split



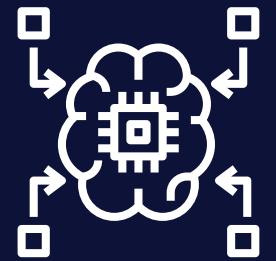
Checking The Min &
Max Date



Split Train



Apply LSTM Model

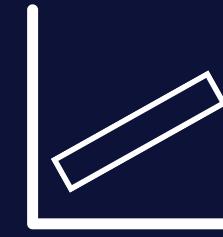


Result LSTM model

MAE = 0.045

MSE = 0.003

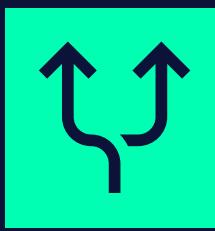
R2 = 0.939



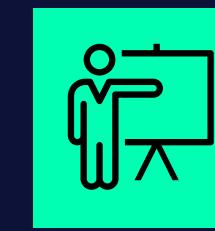
SVM model



Preprocessing



Split



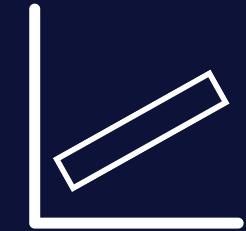
Split Train



Apply SVM Model



Evaluating

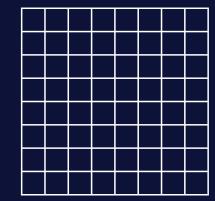


Result SVM model

MAE = 0.325

MSE = 0.325

R2 = 0.325

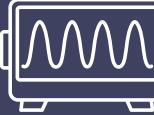
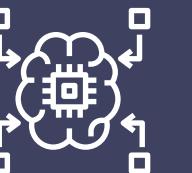
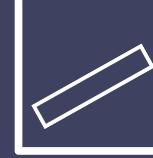


Grid Search Result

The Best Parameters of SVM Are:

{'C': 1000, 'gamma': 1, 'kernel': 'rbf'}

Result Compression

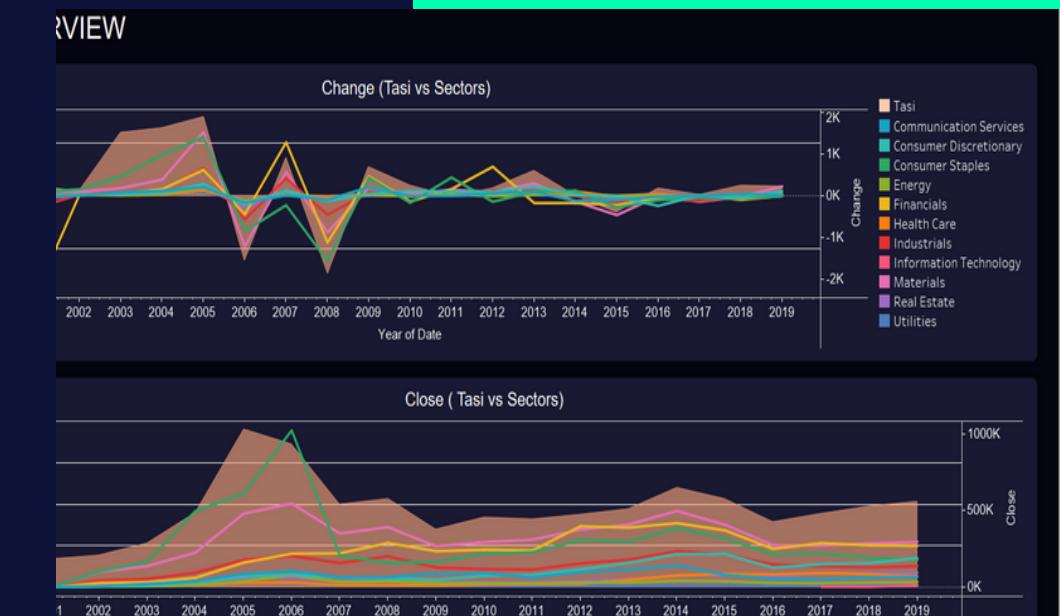
 Result ARIMA model	 Result LSTM model	 Result SVM model
MAE = 32.815	MAE = 0.045	MAE = 0.325
MSE = 1101.555	MSE = 0.003	MSE = 0.325
R2 = -43.486	R2 = 0.939	R2 = 0.325

Dashboard

Saudi Stocks from 2001 to 2020:



Overview Dashboard for all sectors



Energy Dashboard



Communication Technology Dashboard



[Dashboard Link](#)

Vision Team

Thank You