

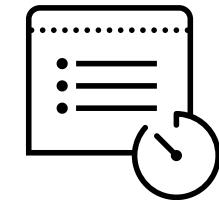
Stock Price Prediction System



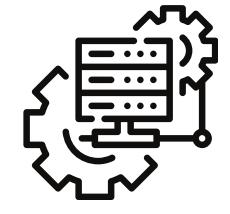
Contents



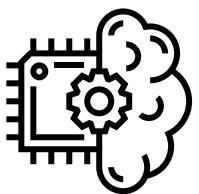
OBJECTIVE



SCOPE



SYSTEM WORKFLOW
DIAGRAM



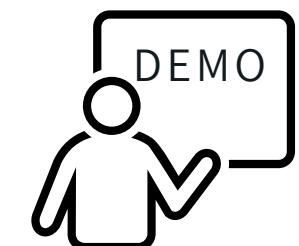
DEVELOP SVM
MODEL



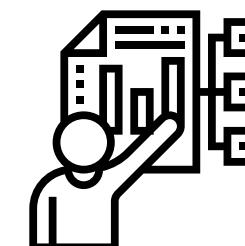
USER INTERFACE



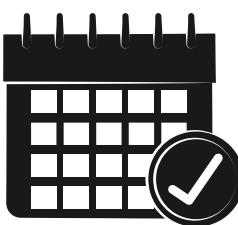
DATABASE &
WEB HOSTING



DEMO



CONCLUSION



WORK PLAN &
RESPONSIBILITY

Objective



OBJECTIVE

ONE
DAY
STOCK

NOWADAY



MACHINE LEARNING



PREDICTION FINANCIAL TREND

Objective



Crude oil Price

ปัจจัยทางเศรษฐกิจที่มีผลต่อการเคลื่อนไหวของดัชนีราคากลุ่มอุตสาหกรรม

ในตลาดหลักทรัพย์แห่งประเทศไทย

The Impact of Economic Factors on Industry Group Index
in the Stock Exchange of Thailand

สุพิชชา ติรพัฒน์* และ เจียมจิต ขาวกร**

Supitcha Tiraphat and Jiamjit Javakorn

ผลการวิเคราะห์แบบจำลองดัชนีราคากลุ่มพลังงานและสารานุปโภค



OBJECTIVE

ONE
DAY
STOCK

$$\text{ENERG} = 230.283 + 0.018\text{FOR} + 62.522\text{OIL} + 0.709\text{GOLD}$$

(1.303)^{ns} (3.343)** (2.778)** (-2.720)**

Objective

OBJECTIVE

ONE
DAY
STOCK

WHAT DID WE DO?



Stock Price



Crude oil Price



Support Vector Machine



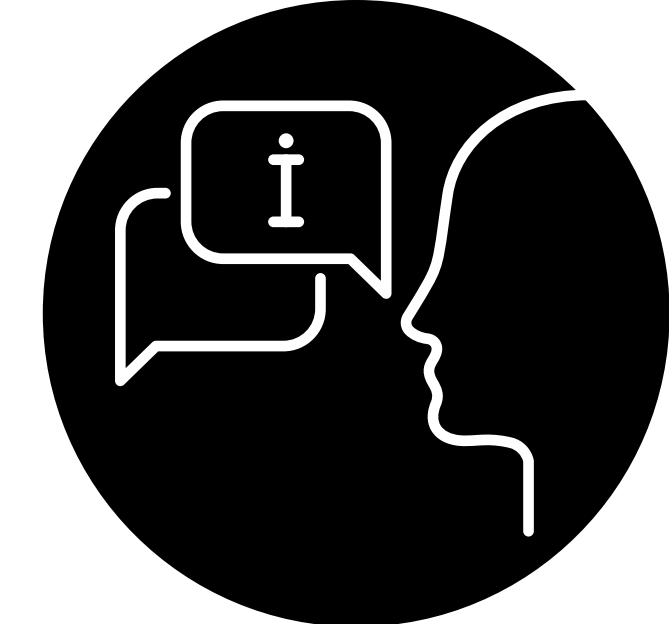
Webapplication

Objective



OBJECTIVE

ONE
DAY
STOCK



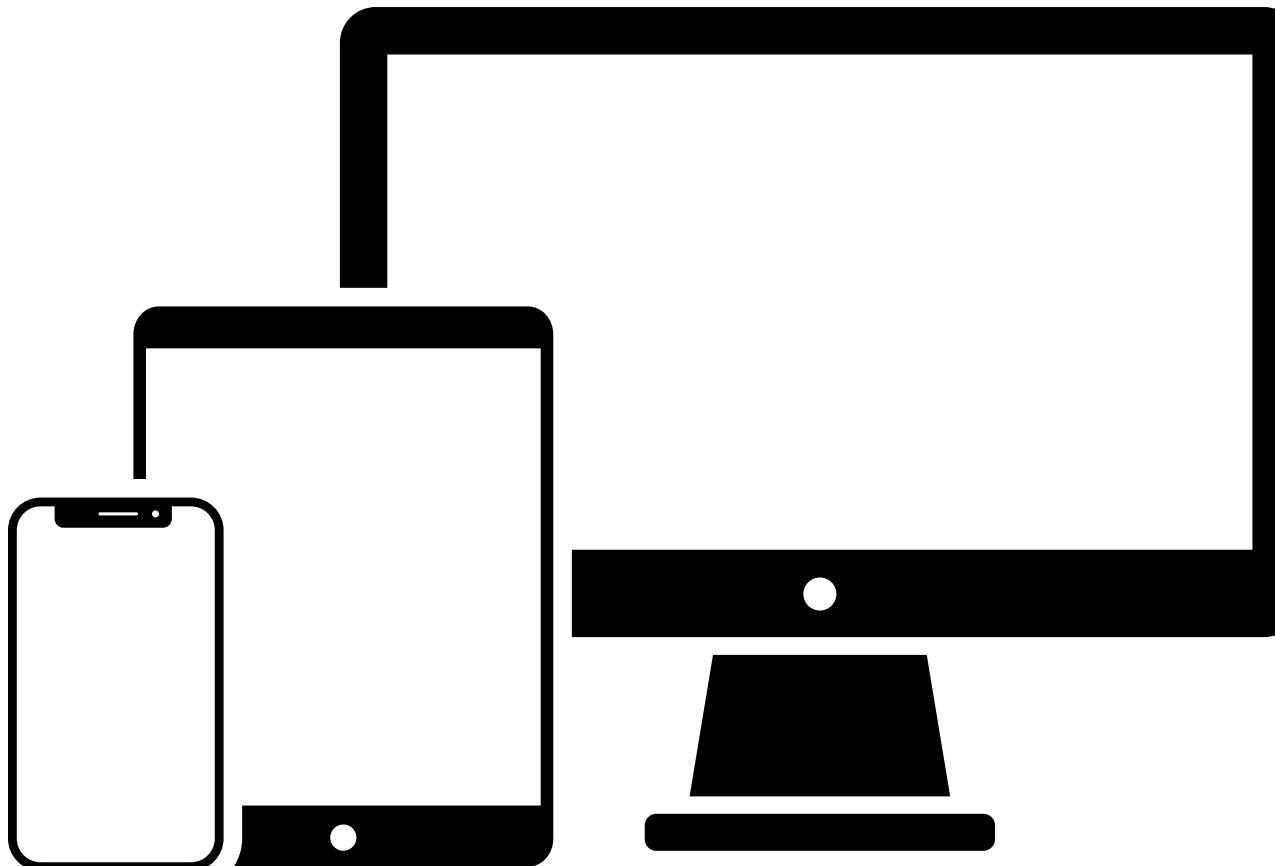
Scope



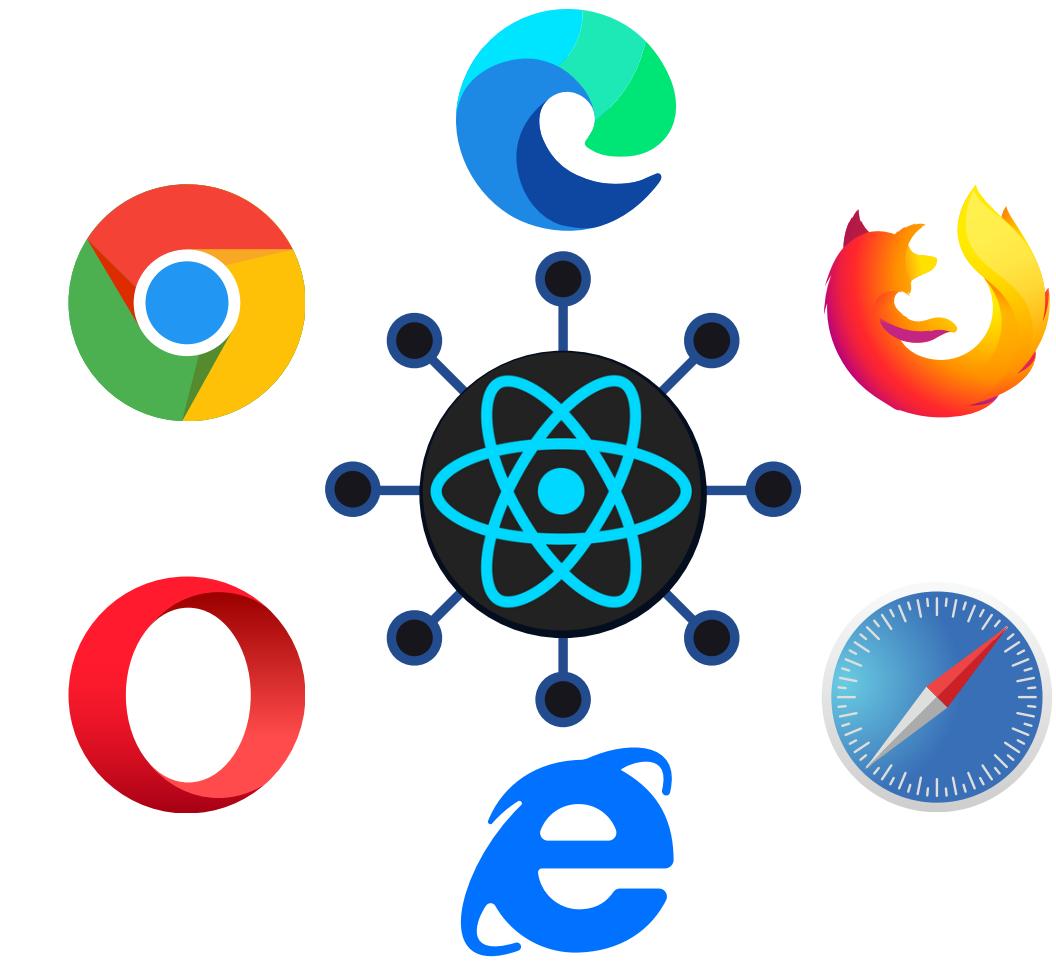
SCOPE

ONE
DAY
STOCK

HARDWARE

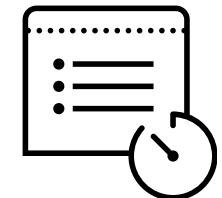


Every device



Every browser

Scope



SCOPE

ONE
DAY
STOCK

OPEC Crude Oil Price



Quandl

Data from 2003 - 2020

SOFTWARE

5 Company in Energy Stocks

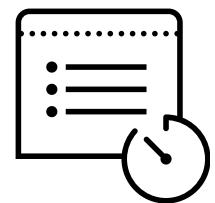


iRPC



YAHOO!

Scope



SCOPE

ONE
DAY
STOCK

SOFTWARE



Support Vector Machine

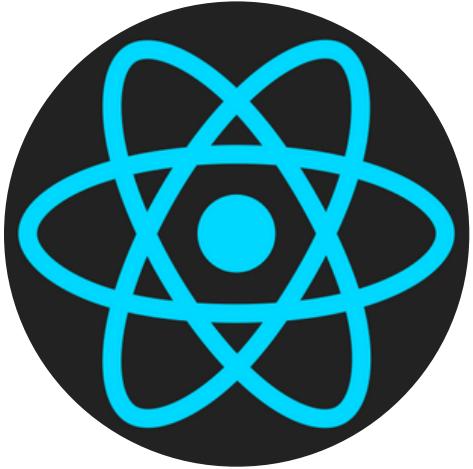


Prediction stock price
in next day at 6 a.m.

Scope

TECHNOLOGY

Frontend



- Support every browser

Backend

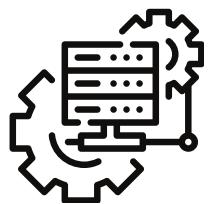


- Web Hosting up to 10GB
- Download data up to 10GB per month
- Stored 1 GB

SCOPE

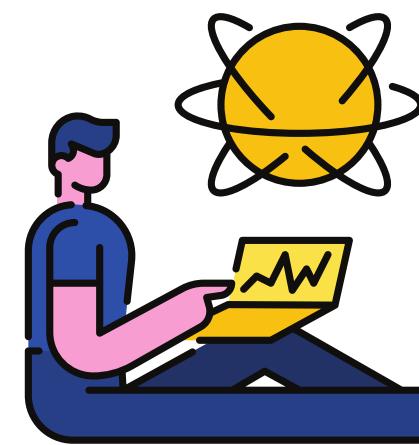
ONE
DAY
STOCK

System Workflow Diagram

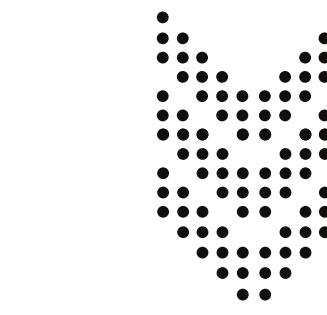


SYSTEM WORKFLOW
DIAGRAM

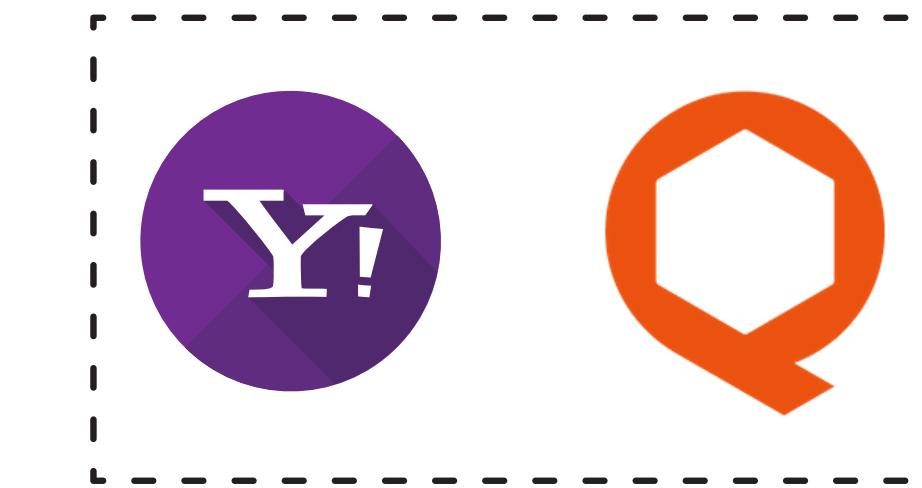
ONE
DAY
STOCK



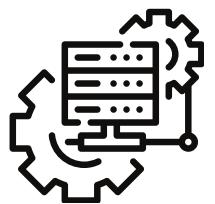
User



SVM

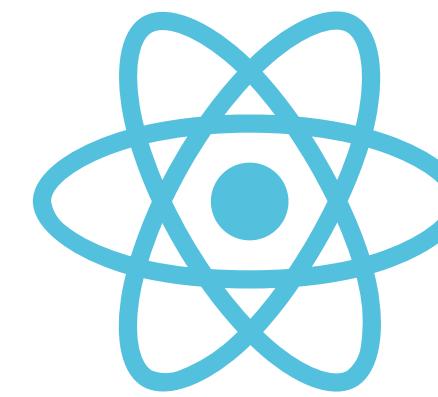


System Workflow Diagram



SYSTEM WORKFLOW
DIAGRAM

ONE
DAY
STOCK

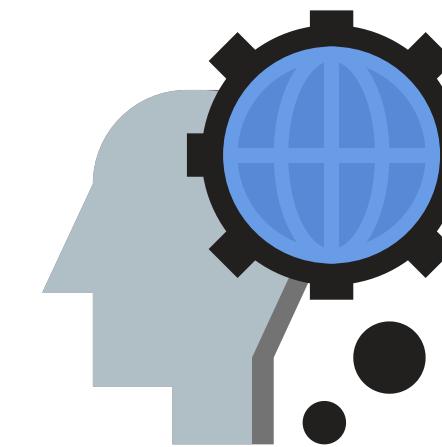


React

Show Request

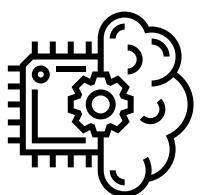


Result



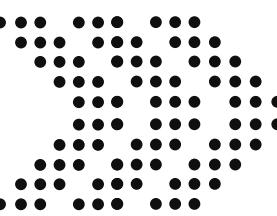
SVM

Develop SVM Model

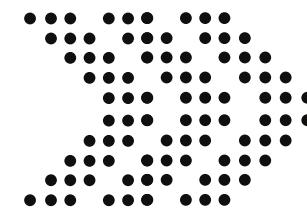


DEVELOP SVM
MODEL

ONE
DAY
STOCK



Feature = [Stock.High, Stock.Low, Stock.Open, Stock.Close, Stock.Volume, Oil.Value]



$$x = \frac{x - \bar{x}}{\sigma}$$

โดย x คือ ข้อมูลเดิม \bar{x} คือ ค่าเฉลี่ย และ σ คือ ค่าเบี่ยงเบนมาตรฐาน



Data Stock price

Date	High	Low	Open	Close	Volume	Adj Close
2003-01-01	4.225	4.225	4.225	4.225	0.0	2.034884
2003-01-02	4.300	4.225	4.225	4.250	18449000.0	2.046925
2003-01-03	4.275	4.225	4.250	4.225	15724000.0	2.034884
2003-01-06	4.250	4.225	4.250	4.250	11980000.0	2.046925
2003-01-07	4.275	4.250	4.250	4.275	22059000.0	2.058966
...
2020-12-24	41.500	40.750	40.750	41.250	45405500.0	40.424999
2020-12-25	42.250	41.250	41.250	42.000	32414000.0	41.160000
2020-12-28	42.750	41.000	42.250	41.000	60698100.0	40.180000
2020-12-29	42.500	41.000	41.250	42.500	41046600.0	41.650002
2020-12-30	43.250	42.250	43.250	42.500	67293300.0	41.650002



Data crude oil price

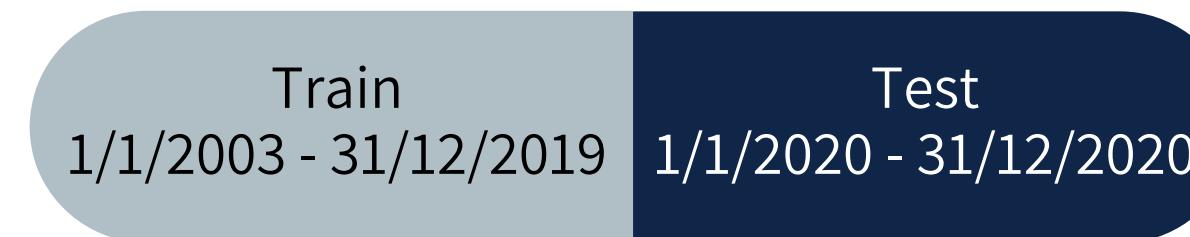
Date	value
2003-01-02	30.05
2003-01-03	30.83
2003-01-06	30.71
2003-01-07	29.72
2003-01-08	28.86
...	...
2020-12-24	50.31
2020-12-28	50.10
2020-12-29	50.16
2020-12-30	50.22
2020-12-31	50.24

Develop SVM Model

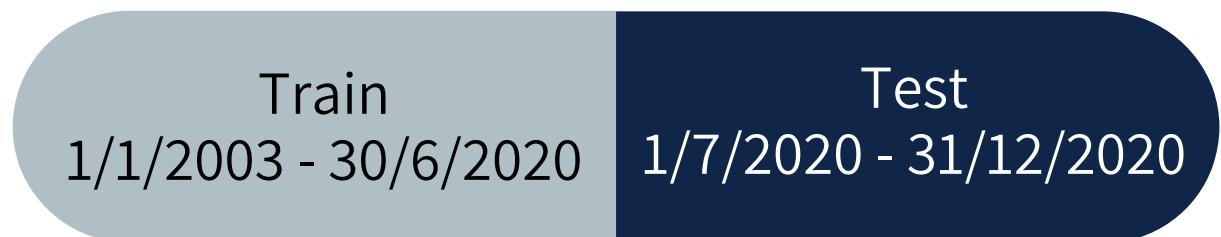
DEVELOP SVM
MODEL
ONE
DAY
STOCK

Data Stock price & Crude oil price 2003 to 2020

experiment 1



experiment 2



Past 1 day Feature



Past 3 day Feature



Past 7 day Feature



Past 1 day Feature

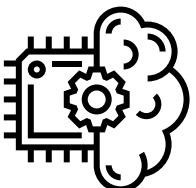


Past 3 day Feature



Past 7 day Feature

Develop SVM Model



DEVELOP SVM
MODEL

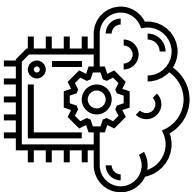
ONE
DAY
STOCK

หุ้น	จำนวนข้อมูลย้อนหลัง (วัน)		
	1	3	7
ชุดข้อมูล	R ²	R ²	R ²
BCP	1	0.971	0.970
	2	0.962	0.960
IRPC	1	0.688	0.050
	2	0.641	-0.066
PTT	1	0.932	0.928
	2	0.921	0.917
SUSCO	1	0.970	0.966
	2	0.913	0.905
TOP	1	0.955	0.943
	2	0.949	0.951

ตารางแสดงค่า R² ของการทดสอบแบบบอตไลแต่ละโมเดล

$$R^2 = 1 - \frac{\sum_{i=1}^n (Desire_i - Forecasting_i)^2}{\sum_{i=1}^n (Desire_i - \bar{Desire})^2}$$

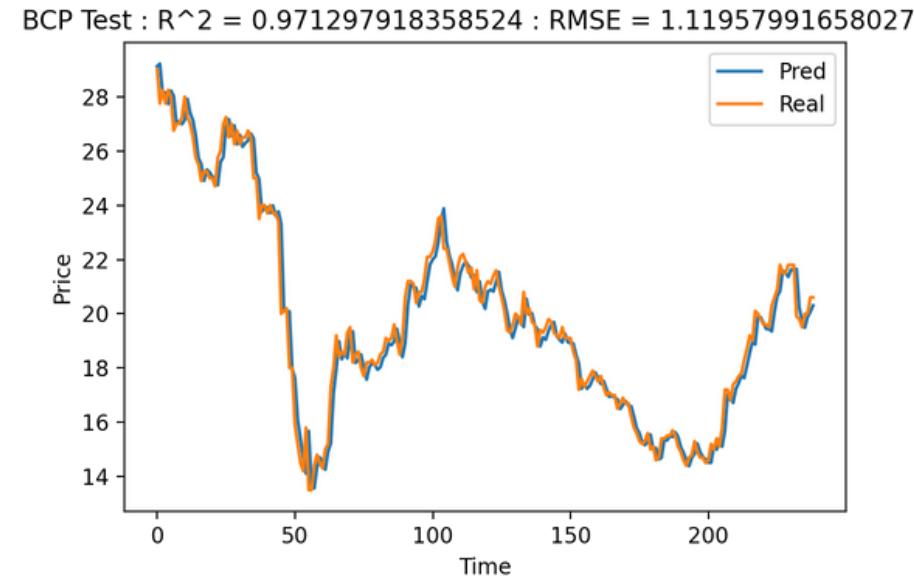
Develop SVM Model



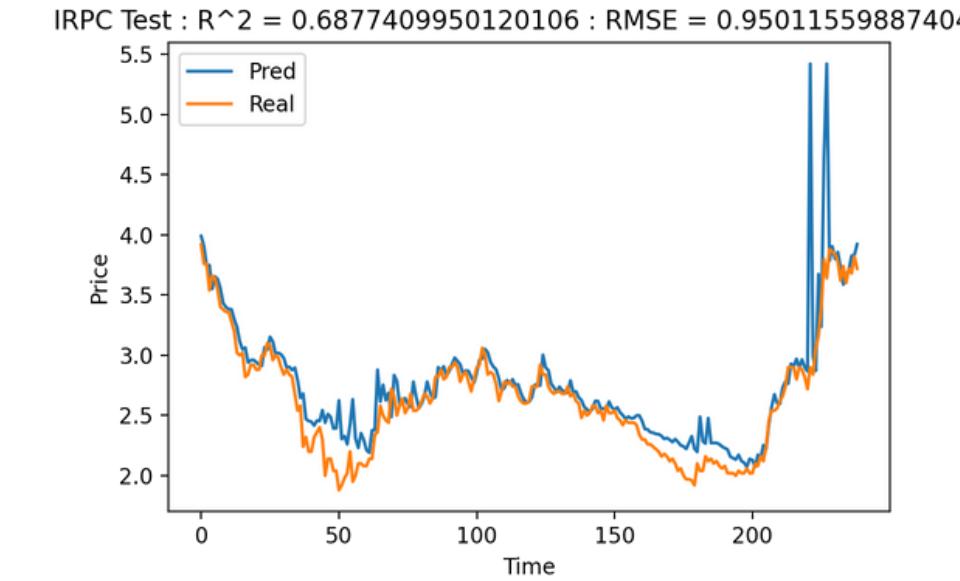
DEVELOP SVM
MODEL

ONE
DAY
STOCK

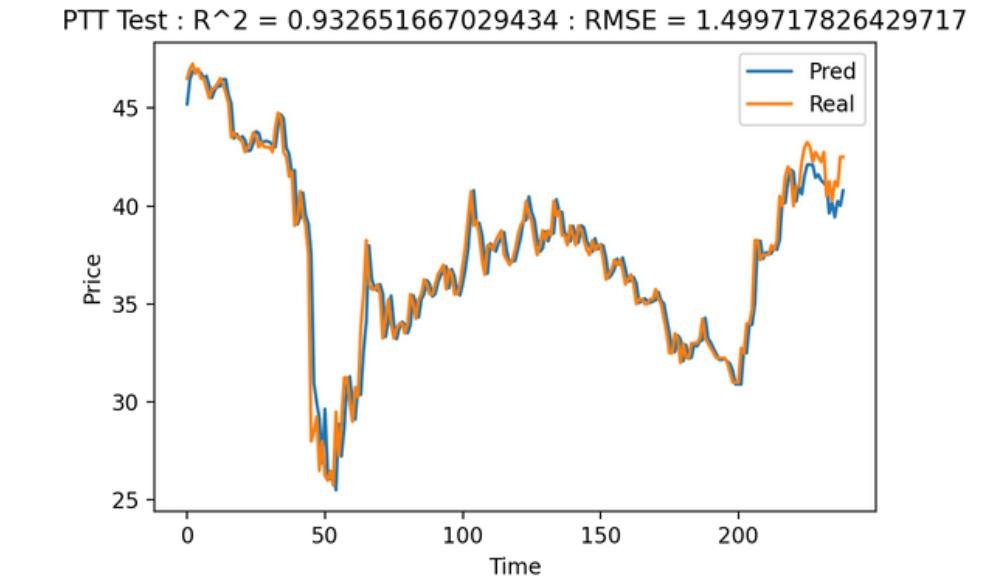
กราฟแสดงผลเทียบระหว่าง ค่าที่โมเดลคำนายและค่าจริง



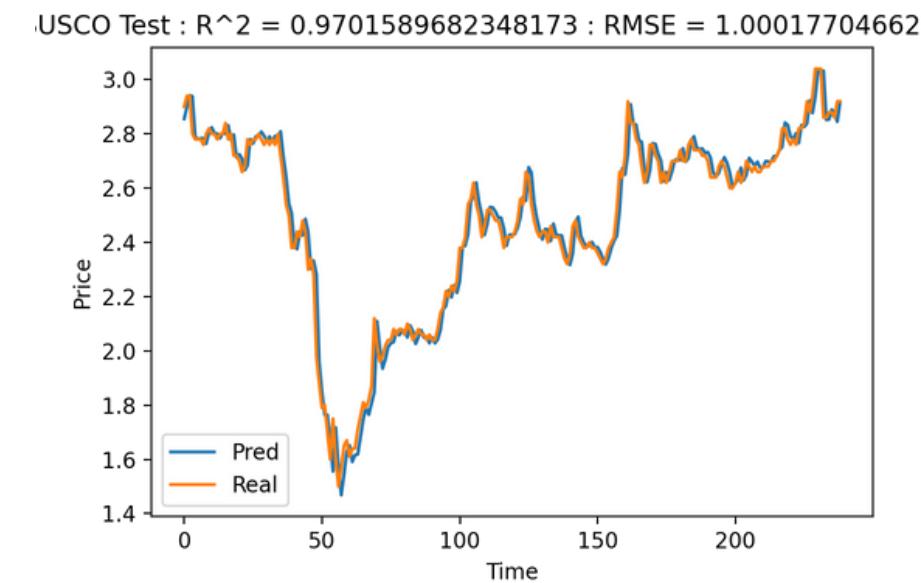
BCP



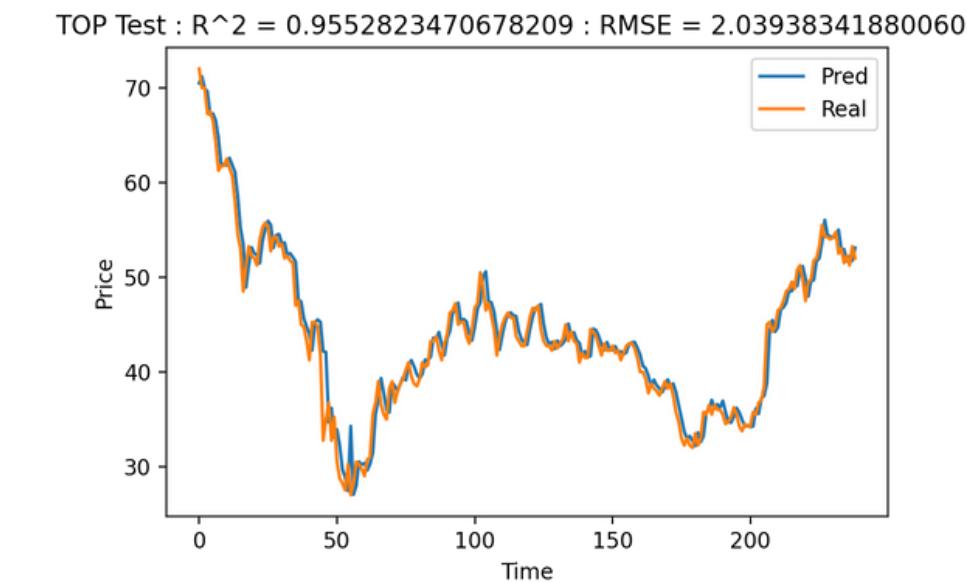
IRPC



PTT



SUSCO



TOP

User Interface



USER INTERFACE

ONE
DAY
STOCK

PC AND LAPTOP

Web Icon

light mode วันที่ xx/xx/xx
เวลา 00.00.00

SET **1,449.83** **+11.51**
+0.80% High 1,454.94 +16.62
Low 1,439.14 +0.82 Value 82,776.88 MB
▲ 843 ▼ 762 ▶ 513 SET : Open/Close

ค้นหาหุ้นทรัพย์ Filter ▾

ชื่อบริษัท	ราคาเปิด	ราคาปิด	ราคากสูงสุด	ราคาย่ำสุด	ปริมาณการซื้อขาย (หุ้น)	เปลี่ยนแปลง	%เปลี่ยนแปลง	ราคาทำนาย
BCP ▲	49.50	49.23	50.16	49.07	25,189	+0.67	+0.03%	50.67
IRPC ▼	49.34	47.90	49.45	46.70	123,456	-1.04	-0.12%	47.20
PTT ◀▶	48.75	48.76	49.60	46.59	25,189	+0.01	+0.00%	48.75
SUSCO ▲	48.34	48.90	48.45	48.70	130,596	-1.03	-0.11%	47.20
TOP ▼	47.34	46.90	47.45	46.70	123,456	-2.14	-0.19%	45.20

User Interface



USER INTERFACE

ONE
DAY
STOCK

PC AND LAPTOP



User Interface



USER INTERFACE

ONE
DAY
STOCK

PC AND LAPTOP

New!



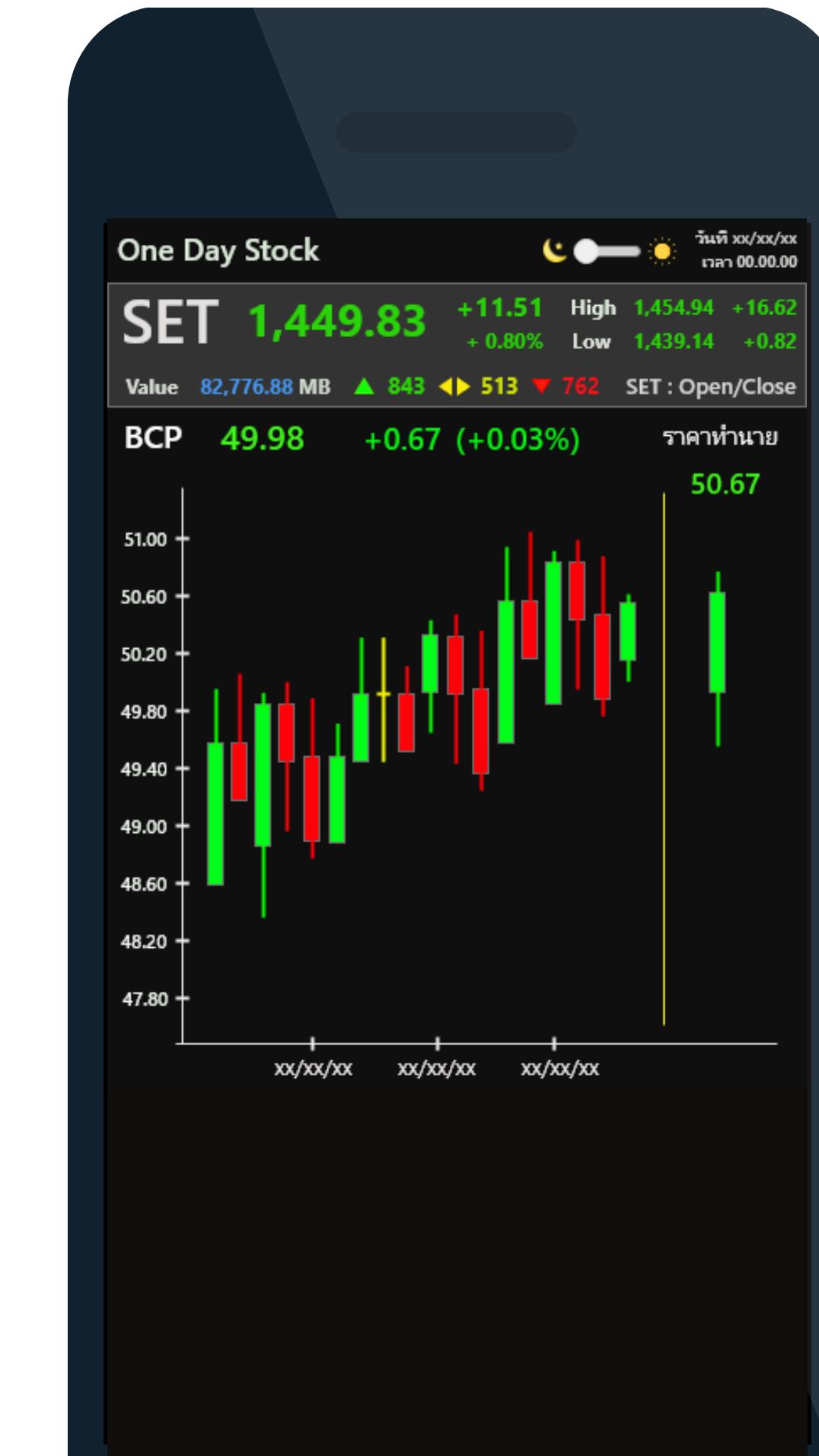
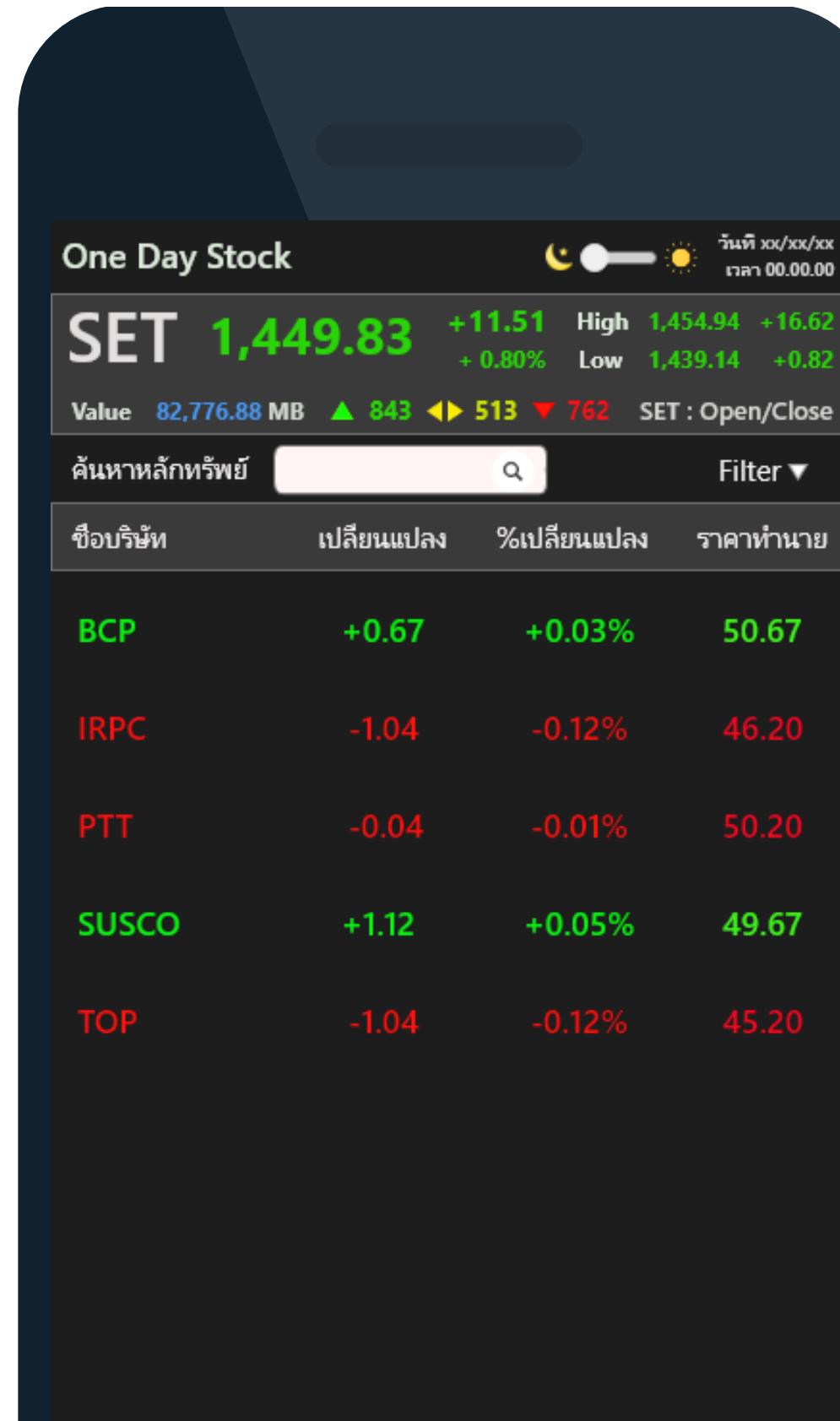
User Interface



USER INTERFACE

ONE
DAY
STOCK

MOBILE AND TABLET

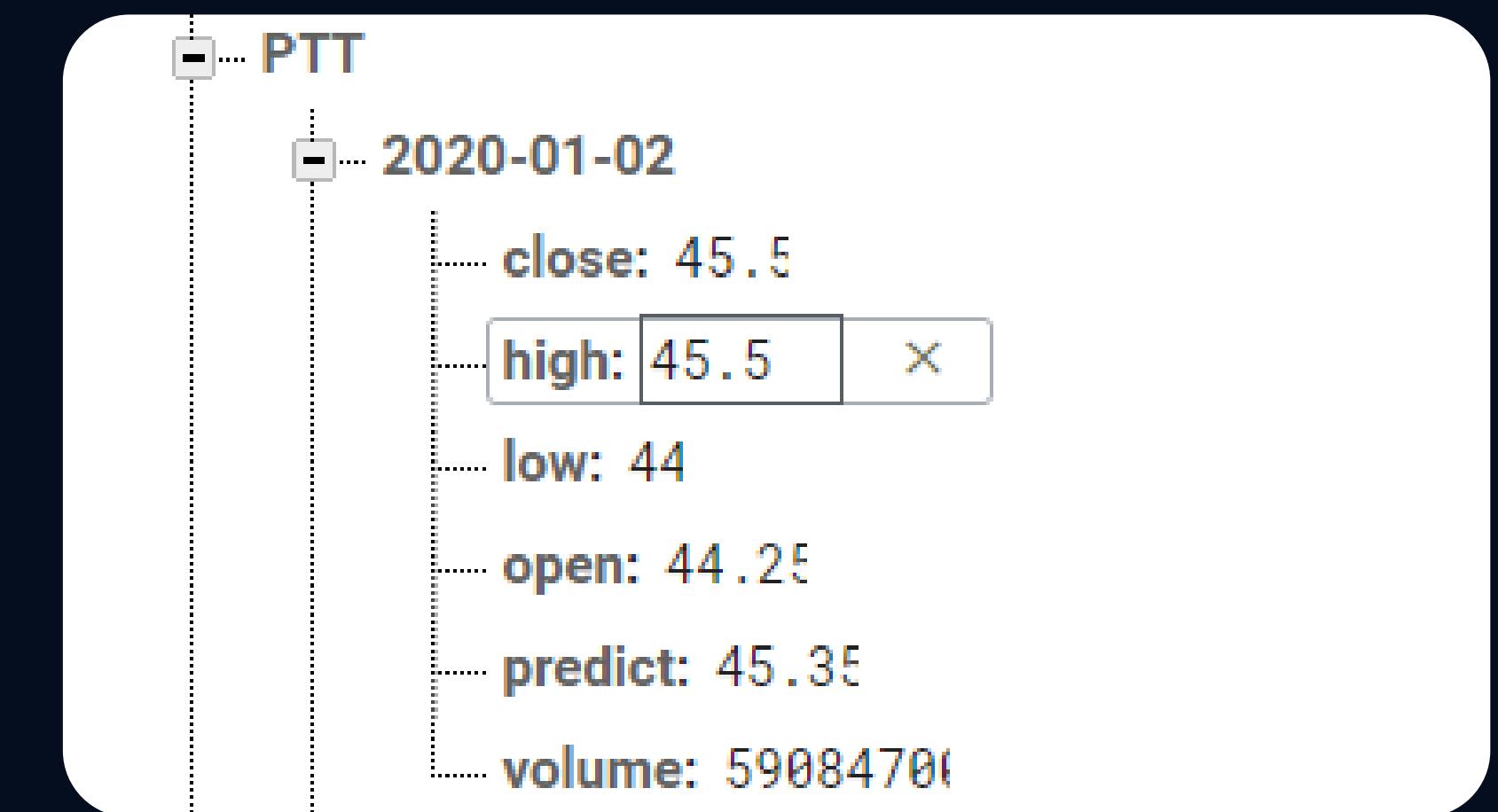
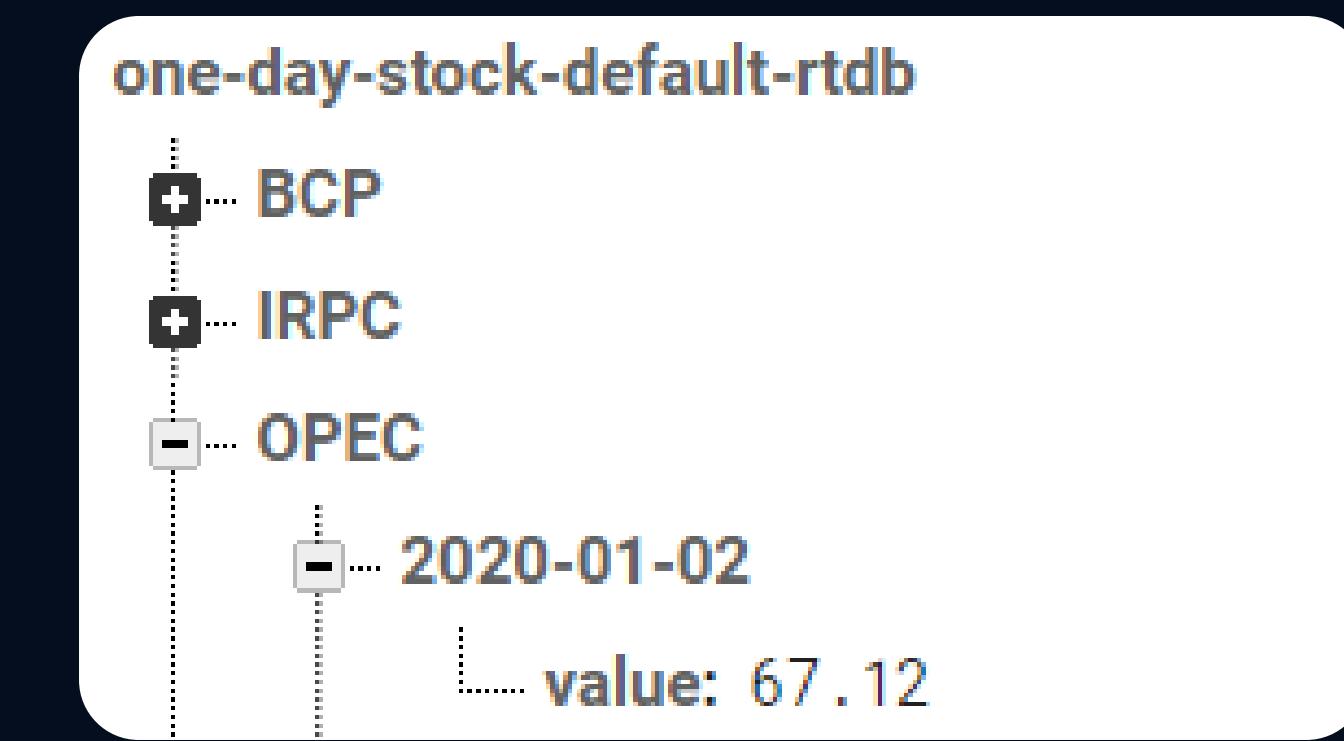
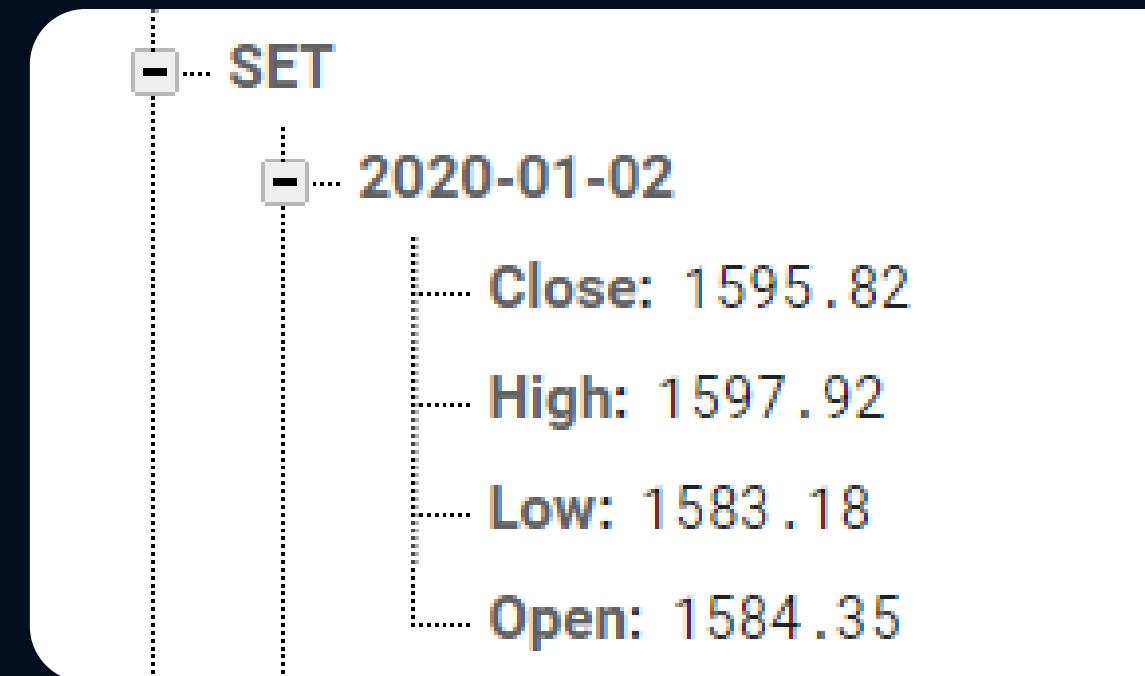


Database & Web hosting

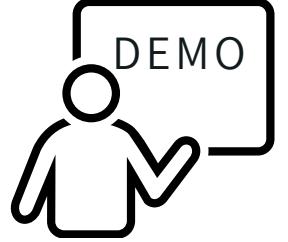


DATABASE &
WEB HOSTING

ONE
DAY
STOCK

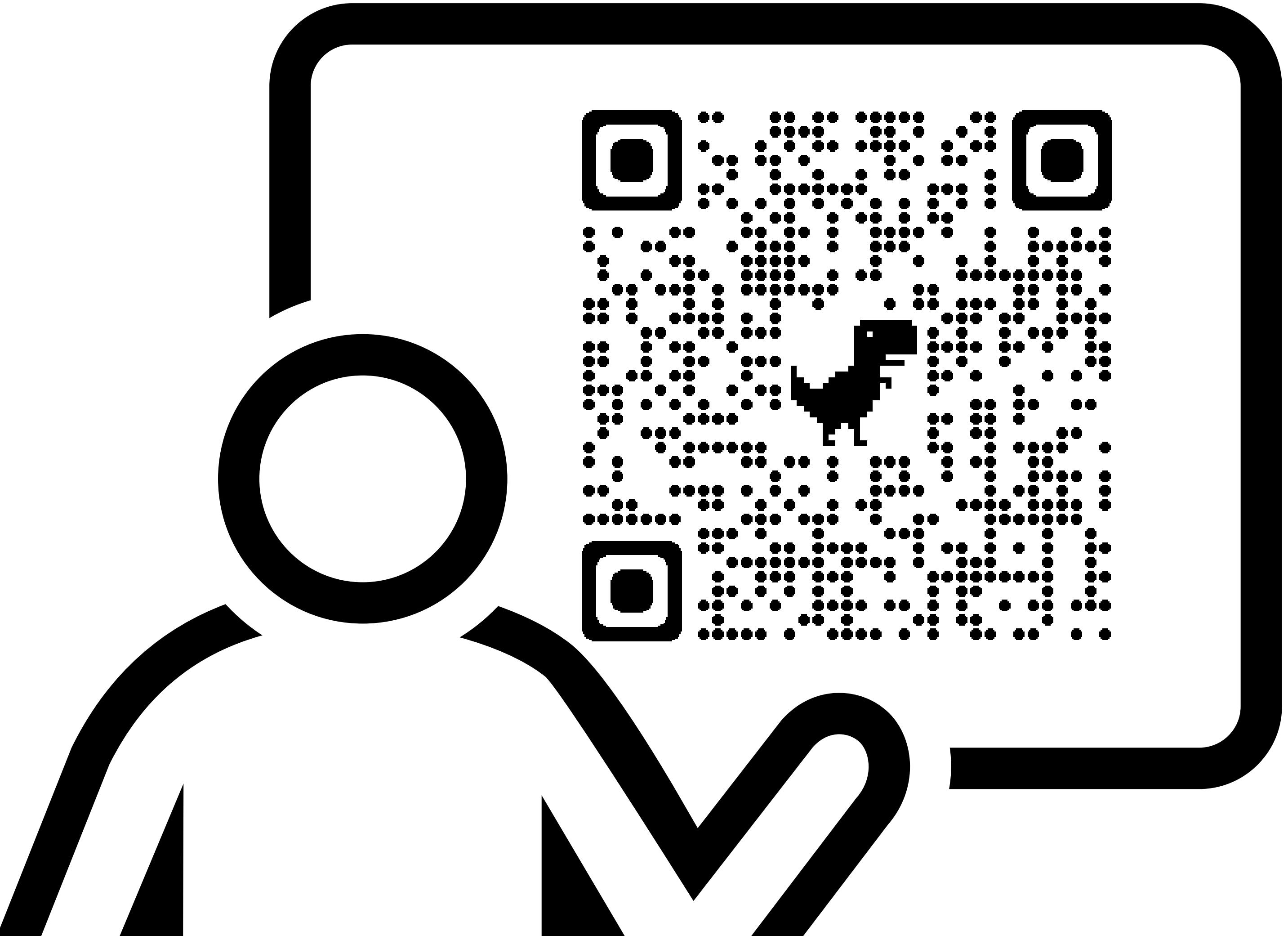


Demo

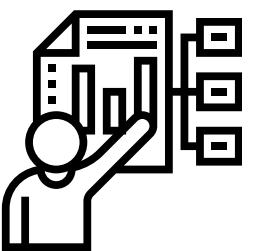


DEMO

ONE
DAY
STOCK

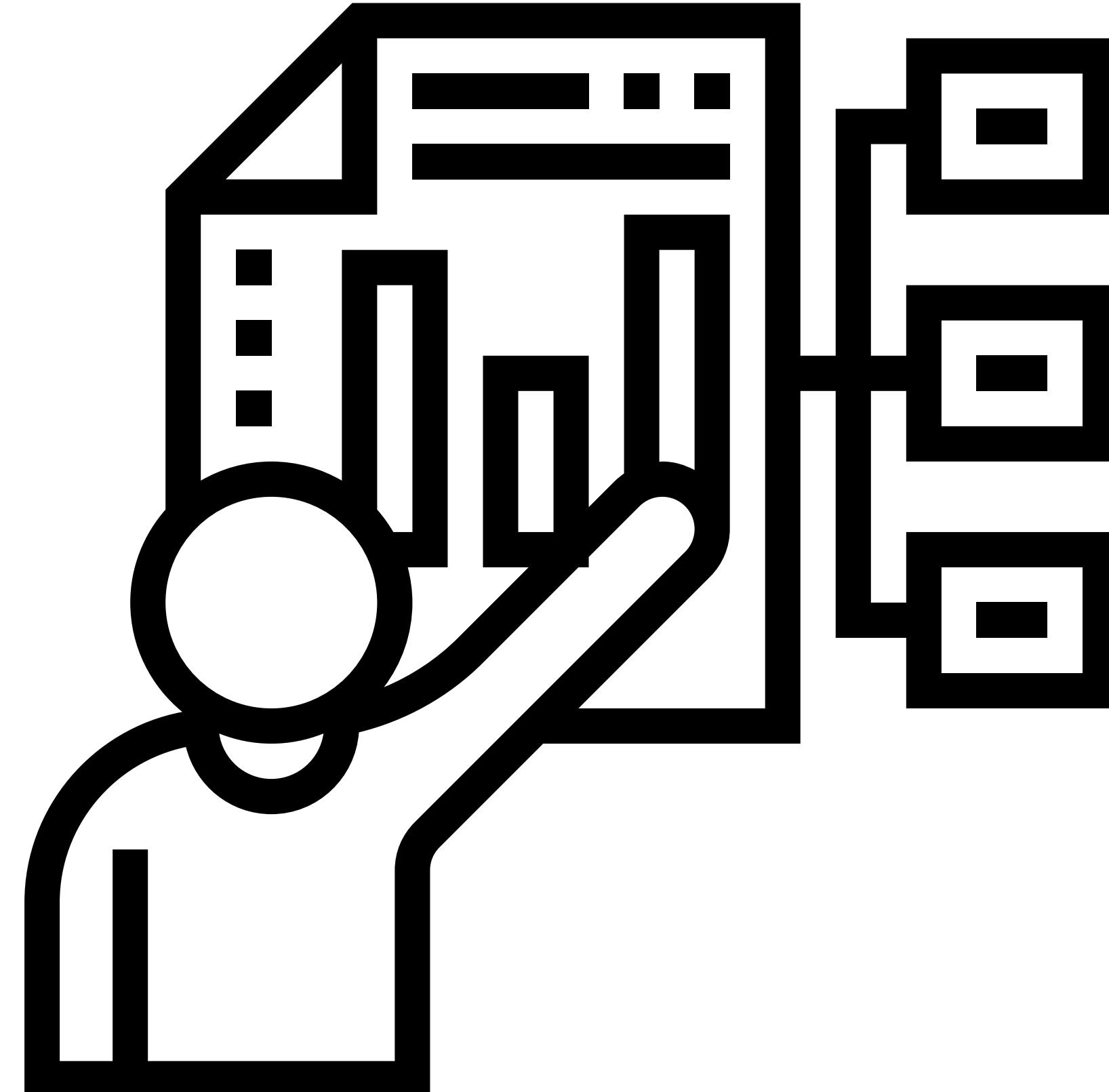


Conclusion

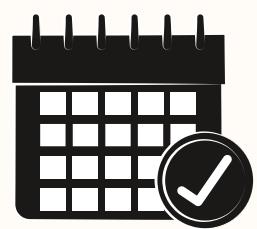


CONCLUSION

ONE
DAY
STOCK

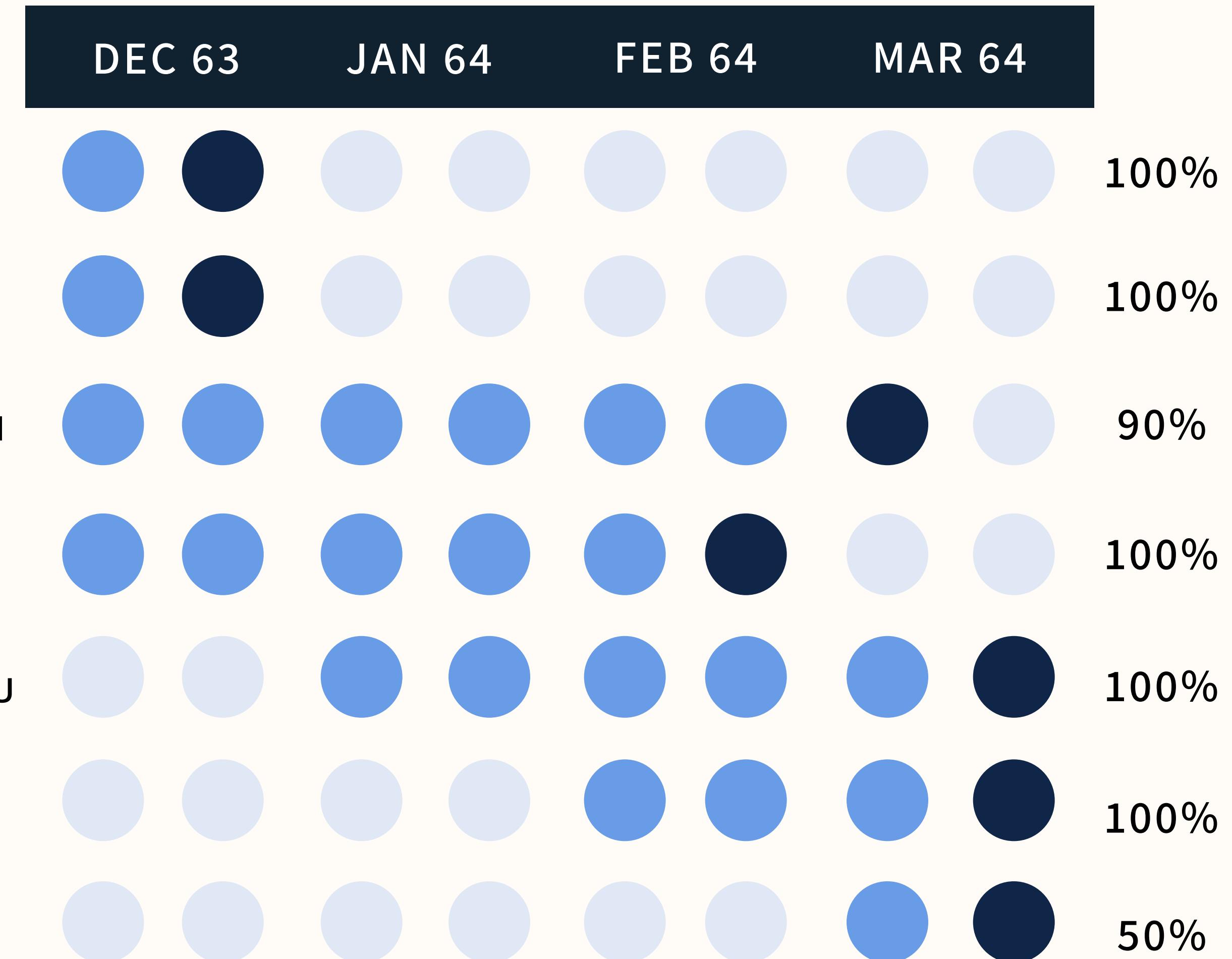


Work plan

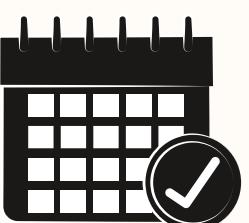


WORK PLAN &
RESPONSIBILITY

ONE
DAY
STOCK



Work plan



WORK PLAN &
RESPONSIBILITY

ONE
DAY
STOCK

Model

19 / 02 / 2021

First model completed

5 / 03 / 2021

Last model completed

Programming

10 / 02 / 2021

Development web application

4 / 03 / 2021

Completed read
information from database

8 / 03 / 2021

Change graph

Meeting

28 / 02 / 2021

Call meeting about
database function

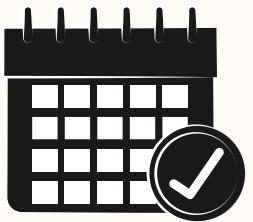
13 - 20 / 03 / 2021

Meeting to solve
problems together

20 / 03 / 2021

Last version web application

Responsibility



WORK PLAN &
RESPONSIBILITY

ONE
DAY
STOCK



นางสาวกิวสรา ศักดิ์บูรณะเพชร 600610719

ทำหน้าที่พัฒนาระบบในส่วนของการทดสอบระบบ และส่วนของ Front-End
ได้แก่ การพัฒนา Web application

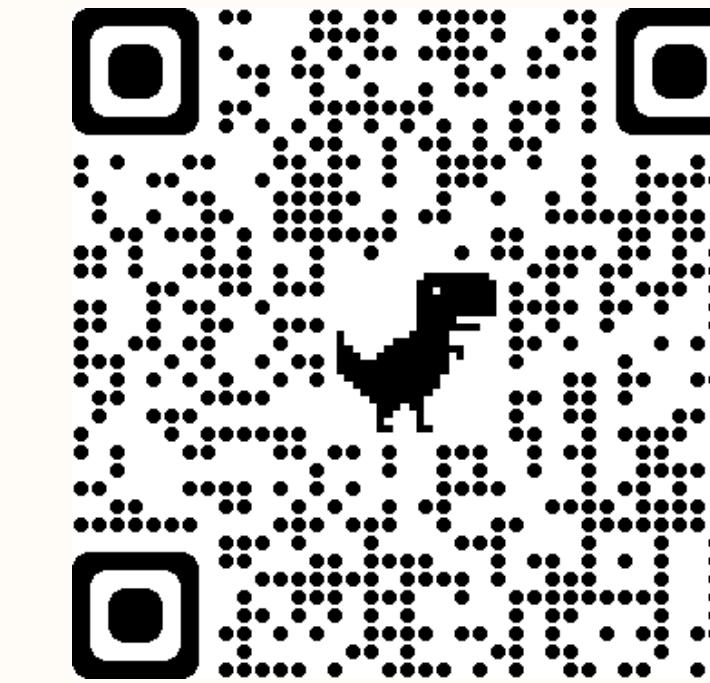
นายสุริยา เตชะลือ 600610790

ทำหน้าที่พัฒนาระบบในส่วนของ Back-End ได้แก่ การเตรียมข้อมูล
ในการพัฒนา model database การทดสอบระบบ และ Deployment



Q & A

Thank you



Scan to one-day-stock.web.app