

# 환율변동추이 분석 및 예측

WEB PROGRAMMING PRESENTATION

You & I – Team Portfolio

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## ❖ Used Technology & Reference

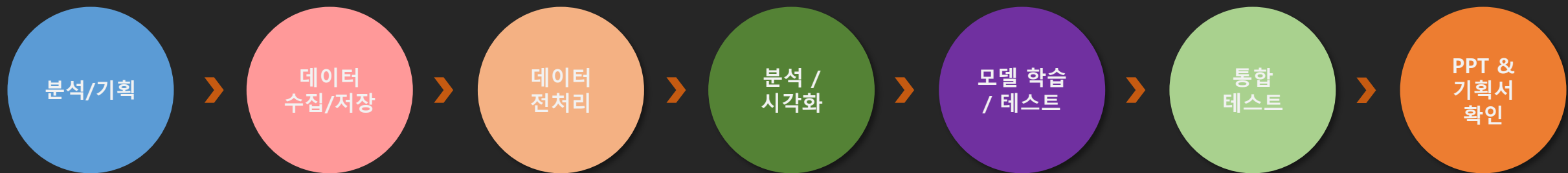
### Technology

- ✓ Python
- ✓ Streamlit
- ✓ pandas, matplotlib
- ✓ sklearn.linear\_model
- ✓ ez-bot
- ✓ C#

### Reference

- ✓ smbz.biz ( 서울 외환 중계소 )
- ✓ tistory.com
- ✓ codetorial.net/matplotlib
- ✓ wikidocs.net
- ✓ blog.naver

# ❖ Time Table

[illegible]

# ❖ Information Structure Diagram



# ❖ Code Review



## ➤ Code Review

장지 목록

RPA\_Project\_환율변동추이.zml

찾기

Main

- Do (1. 설정)
  - Set url.SMBS to "http://www.smbs.biz/ExRate/TodayExRate.jsp"
  - Set date.Today to DateTime.Now.ToString("yyyyMMdd")
  - Set date.Today2 to DateTime.Now.ToString("yyyy-MM-dd")
  - Set path.Down to "C:Users + @user.Name:string@ + Downloads"
  - Set user.Name to System.Security.Principal.WindowsIdentity.GetCurrent().Name.Split("\\")[1]
  - Set path.Down to "C:Users302-05Downloads"
  - Set path.Base to "D:RPABase"
  - Set file.20 to @path.Base:string@ + "0200.환율CodeTable.xlsm"
- Do (365일 반복)
  - Loop 1 times (99로 나중에 수정)
    - Do (Selenium.Chrome)
      - Set data.50 to { //css\_ref WebDriver.dll; //using OpenQA.Selenium; //using OpenQA.Selenium.Chrome; string r...
      - Set data.Excel to { // List to String data.51 string ret = ""; var list = (List<string>)@data.50@; ...
      - Set data.10 to { // List to Array data.52 string ret = ""; var list = (List<string>)@data.50@; ...
    - Do (A. ExRate Table)
      - Do (1. open)
        - Write "({LWin}R)" on current focus
        - Sleep 1000 milliseconds
        - MatchAndWrite "({LeftCtrl}A)" + @file.20:string@ + "{Enter}" on (98, 10)
        - Sleep 1000 milliseconds
        - Sleep 1000 milliseconds
      - Do (2. 기존자료삭제)
        - MatchAndClickL on (15, 8)
        - Write "{F5}" + "일일환율(A2:B2)" + "{Enter}" on current focus (cell 선택)
        - Sleep 1000 milliseconds
        - Write "({LeftCtrl}{LeftShift}{Down})" on current focus (맨 밑으로 블록)
        - Sleep 1000 milliseconds
        - Write "({Delete})" on current focus (Copy)
        - Sleep 1000 milliseconds
      - Do (3. Paste(data.Excel))
        - MatchAndClickL on (15, 8)
        - SetClipboardText @data.Excel:string@
        - Write "{F5}" + "A2" + "{Enter}" on current focus (cell 선택)
        - Write "({LeftCtrl}V)" on current focus (Paste)
        - Write "{F5}" + "A1" + "{Enter}" on current focus (cell 선택)

속성

실행 상세 결과 캐시 삭제

노드 식별 번호 bhafdahiahbie00b3

설명

2) 공통 인수

결과 파일에 이미지 저장	True
명령 수행 실패 시 종료 여부	True

3) 검색

예외 처리 사용	False
예외 처리 상위 노드 전파	True
예외 처리 참조 노드명	

4) A2O 서비스 배포 정보

서비스 이름	default
서비스 소개	
기능명	

기타

Result	0
TreeNode	TreeNode: Main

로그

[2024-02-13 11:57:03.127] OSVersion : Windows 10 Pro (64bit) / Screen : 1920 x 1200

[2024-02-13 11:57:03.130] Program: ezbot, Build: 4.12.14.20211001 (64bit)

로그 변수 리스트 테이블 트리노드 에러 목록

Line: 1 Idle

## ➤ Code Review

RPA\_Project\_환율변동추이.zml

Main

- Do (1. 설정)
  - Set url.SMBS to "http://www.smbs.biz/ExRate/TodayExRate.jsp"
  - Set date.Today to DateTime.Now.ToString("yyyyMMdd")
  - Set date.Today2 to DateTime.Now.ToString("yyyy-MM-dd")
  - Set path.Down to "C:\\Users\\@user.Name:string@\\Downloads\\@date.Today2:string@"
  - Set user.Name to System.Security.Principal.WindowsIdentity.GetCurrent().Name.Split("\\")[1]
  - Set path.Down to "C:\\Users\\@user.Name:string@\\Downloads\\@date.Today2:string@"
  - Set path.Base to "D:\\RPA\\Base\\@date.Today2:string@"
  - Set file.20 to @path.Base:string@ + "0200.환율CodeTable.xlsm"
- Do (365일 반복)
  - Loop 1 times (99로 나중에 수정)
    - Do (Selenium.Chrome)
      - Set data.50 to { //css\_ref WebDriver.dll; //using OpenQA.Selenium; //using OpenQA.Selenium.Chrome; string r...
      - Set data.Excel to { // List to String data.51 string ret = ""; var list = (List<string>)@data.50@; ...
      - Set data.10 to { // List to Array data.52 string ret = ""; var list = (List<string>)@data.50@; ...
    - Do (A. ExRate Table)
      - Do (1. open)
        - Write "([LWin]R)" on current focus
        - Sleep 1000 milliseconds
        - MatchAndWrite "([LeftCtrl]A)" + @file.20:string@ + "{Enter}" on (98, 10)
        - Sleep 1000 milliseconds
        - Sleep 1000 milliseconds
      - Do (2. 기존자료삭제)
        - MatchAndClickL on (15, 8)
        - Write "{F5}" + "일일환율!A2:B2" + "{Enter}" on current focus (cell 선택)
        - Sleep 1000 milliseconds
        - Write "([LeftCtrl]{LeftShift}{Down})" on current focus (맨 밑으로 블록)
        - Sleep 1000 milliseconds
        - Write "([Delete])" on current focus (Copy)
        - Sleep 1000 milliseconds

## Description

1. Ez-bot 변수설정
2. Smbs.biz -> Crawling 및 데이터 설정
3. Excel.file Open
4. Sheet 1번의 기존자료 삭제

## ➤ Code Review

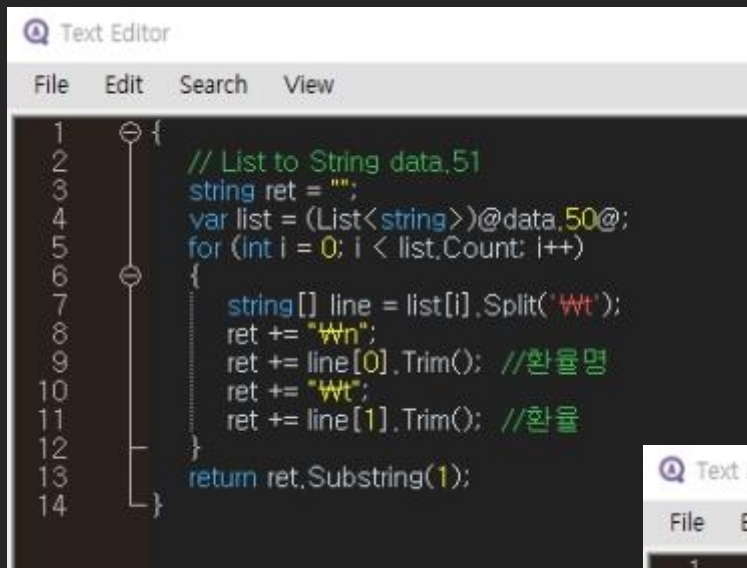
2번  
Description

1. Snbz.com Site Open
2. 환율정보 기간 설정
3. 설정된 기간의 페이지 Crawling
4. Chrome Driver 종료

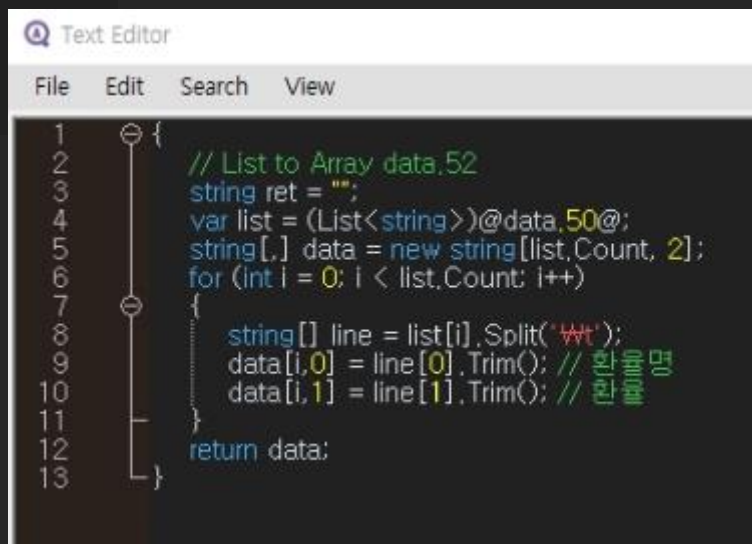
```
1 {
2 //css_ref WebDriver.dll;
3 //using OpenQA.Selenium;
4 //using OpenQA.Selenium.Chrome;
5 string ret = "";
6 string row = "";
7 string urlStr = "";
8 urlStr = "http://www.smbz.biz/ExRate/TodayExRate.jsp";
9
10 var list = new List<string>();
11
12 ChromeOptions options = new ChromeOptions();
13 //options.AddArgument("headless");
14 // 처리속도를 빠르게 하기위해서 headless 즉, 크롬창을 띄우지 않고 실행한다.
15 // 장점 : 처리속도가 빠르다 // 단점 : 크롬창이 필요한 크롤링에서는 사용이 불가능하다.
16
17 ChromeDriverService driverService = ChromeDriverService.CreateDefaultService();
18 driverService.HideCommandPromptWindow = true;
19
20 var driver = new ChromeDriver(driverService, options);
21 driver.Url = urlStr;
22 var input = driver.FindElement(By.Id("searchDate"));
23 input.SendKeys(OpenQA.Selenium.Keys.Backspace);
24 input.SendKeys(OpenQA.Selenium.Keys.Backspace);
25 input.SendKeys(OpenQA.Selenium.Keys.Backspace);
26 input.SendKeys(OpenQA.Selenium.Keys.Backspace);
27 input.SendKeys(OpenQA.Selenium.Keys.Backspace);
28 input.SendKeys(OpenQA.Selenium.Keys.Backspace);
29 input.SendKeys(OpenQA.Selenium.Keys.Backspace);
30 input.SendKeys(OpenQA.Selenium.Keys.Backspace);
31 input.SendKeys(@date, Today:string@);
32
33 driver.FindElement(By.XPath("/html/body/div/div[4]/div[2]/div/div[7]/div/button[1]")).Click();
34 driver.FindElement(By.XPath("/html/body/div/div[4]/div[2]/div/form/p[2]/a[2]/img")).Click();
35
36
37
38
39 var e10= driver.FindElements(By.ClassName("table_type7"));
40 foreach(var e11 in e10)
41 {
42     var e12 = e11.FindElements(By.TagName("tr"));
43     foreach(var e13 in e12)
44     {
45         row = "";
46         var e14 = e13.FindElements(By.TagName("td"));
47         foreach(var e15 in e14){
48             row += "Wt" + e15.Text;
49         }
50         if(row.Length>5) list.Add(row, Substring(1));
51     }
52 }
```

```
50
51     if(row.Length>5) list.Add(row, Substring(1));
52 }
53
54 // return e10.Count;
55 // if(e10 !=null)
56 //     return "100";
57 // else
58 //     return "000";
59
60 driver.Close();
61 driver.Quit();
62 return list;
63 }
```

## Fifth Editor



```
1 {  
2     // List to String data,51  
3     string ret = "";  
4     var list = (List<string>)data,50@;  
5     for (int i = 0; i < list.Count; i++)  
6     {  
7         string[] line = list[i].Split('Wt');  
8         ret += "Wn";  
9         ret += line[0].Trim(); //환율명  
10        ret += "Wt";  
11        ret += line[1].Trim(); //환율  
12    }  
13    return ret.Substring(1);  
14 }
```



```
1 {  
2     // List to Array data,52  
3     string ret = "";  
4     var list = (List<string>)data,50@;  
5     string[,] data = new string[list.Count, 2];  
6     for (int i = 0; i < list.Count; i++)  
7     {  
8         string[] line = list[i].Split('Wt');  
9         data[i,0] = line[0].Trim(); // 환율명  
10        data[i,1] = line[1].Trim(); // 환율  
11    }  
12    return data;  
13 }
```

Second  
Editor

## Description

1. Crawling Date List 로 변경
2. List를 2차원 배열로 변경



## Description

```
Do (3. Paste(data.Excel))
  MatchAndClickL on (15, 8)
  SetClipboardText @data.Excel:string@
  Write "{F5}" + "A2" + "{Enter}" on current focus (cell 선택)
  Write "({LeftCtrl}V)" on current focus (Paste)
  Write "{F5}" + "A1" + "{Enter}" on current focus (cell 선택)

Do (4. 저장)
  MatchAndWrite "({LeftCtrl}S)" on (17, 8)

Do (5. 최근20일 환율 1일 ShiftRight)
  MatchAndClickL on (15, 8)
  Write "{F5}" + "최근20일환율!B1:CV1" + "{Enter}" on current focus (cell 선택)
  Write "({LeftCtrl}{LeftShift}{Down})" on current focus (맨 밑으로 블록)
  Write "({LeftCtrl}C)" on current focus (Copy)
  Write "{F5}" + "C1" + "{Enter}" on current focus (cell 선택)
  Write "({LeftCtrl}V)" on current focus (Copy)
  Write "{F5}" + "일일환율!A1" + "{Enter}" on current focus (cell 선택)

Do (6. 일자넣기)
  MatchAndClickL on (15, 8)
  Write "{F5}" + "최근20일환율!B1" + "{Enter}" on current focus (cell 선택)
  Sleep 1000 milliseconds
  Write @date.Today2:string@ + "{Tab}" on current focus (날짜 입력)
  Sleep 1000 milliseconds
```

1. Sheet 1번, 현재매매 기준환율 설정
2. Sheet 2번, 기존환율 데이터 밀어넣기
3. Sheet 2번, 오늘날짜 집어넣기

```

☒ Do (6. 일자넣기)
  ☒ MatchAndClickL on (15, 8)
  ☒ Write "{F5}" + "최근20일환율!B1" + "{Enter}" on current focus (cell 선택)
  ☒ Sleep 1000 milliseconds
  ☒ Write @date.Today2:string@ + "{Tab}" on current focus (날짜 입력)
  ☒ Sleep 1000 milliseconds
☒ Do (7. 일일환율입력)
  ☒ Unset "data.30" (종료여부 : False)
  ☒ MatchAndClickL on (15, 8)
  ☒ Write "{F5}" + "A2:B2" + "{Enter}" on current focus (cell 선택)
  ☒ Write "{(LeftCtrl){LeftShift}{Down}}" on current focus (맨 밑으로 블록)
  ☒ Write "{(LeftCtrl)C}" on current focus (Copy)
  ☒ Sleep 1000 milliseconds
  ☒ GetClipboardText into "data.Excel"
  ☒ Write "{Delete}" on current focus (copy)
  ☒ Set data.30 to { //2자원 배열 string[] data = @data.Excel:string@.Split(new char[]{'#n'},StringSplitOptions.Remove...
  ☒ Set data.30 to { //환율Merge string[,] data10 = (string[,])@data.10@; string[,] data30 = (string[,])@data...
  ☒ Set data.Str to { //Array->String string ret = ""; string str = ""; string[,] data = (string[,])@dat...
  ☒ SetClipboardText @data.Str:string@
  ☒ Write "{F5}" + "A2" + "{Enter}" on current focus (cell 선택)
  ☒ Write "{(LeftCtrl)V}" on current focus (copy)
  ☒ Write "{F5}" + "A1" + "{Enter}" on current focus (cell 선택)
☒ Do (8. 저장)
  ☒ MatchAndWrite "{(LeftCtrl)S}" on (17, 8)
☒ Do (9. 닫기)
  ☒ MatchAndWrite "{(LeftAlt){F4}}" on (17, 8)
☐ KillProcessByName "Chrome.exe", force=True

☒ Exceptions
☒ Nodes
  
```

## Description

1. Sheet 2번, 오늘날짜 집어넣기
2. Sheet 2번, 기존 통화명과 Crawling한 통화명과 같은지 비교 이후 최신 환율 데이터 붙여넣기
3. Excel 저장 및 닫기 / Chrome 닫기

## ➤ Code Review

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	A	B	C	D
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2		매매기준환율		
3		기준일자	10월 24일	
4		통화명	환율(원)	
5		미국 달러 (USD)	1353.20	
6		위안 (CNH)	184.48	
7		일본 엔 (JPY) (100)	903.97	
8		유로 (EUR)	1443.73	
9		영국 파운드 (GBP)	1657.47	
10		캐나다 달러 (CAD)	988.46	
11		스위스 프랑 (CHF)	1518.83	
12		호주 달러 (AUD)	857.18	
13		뉴질랜드 달러 (NZD)	791.62	
14		홍콩 달러 (HKD)	172.95	



	A	B	C	D	E	F	G	H	I	J	K	L
1	통화명	01-31	01-30	01-29	01-28	01-27	01-26	01-25	01-24	01-23	01-22	01-21
2	미국 달러 (USD)	1330.60	1336.90	1336.60	1336.60	1336.60	1335.70	1339.10	1336.00	1334.70	1336.50	1336.50
3	위안 (CNH)	185.15	185.85	186.12	186.12	186.12	186.45	186.65	186.00	185.11	185.35	185.35
4	일본 엔 (JPY) (100)	901.89	906.74	902.62	902.62	902.62	905.04	907.34	900.82	901.52	901.91	901.91
5	유로 (EUR)	1443.10	1448.73	1449.34	1449.34	1449.34	1448.43	1457.61	1450.63	1452.35	1456.25	1456.25
6	영국 파운드 (GBP)	1689.60	1699.60	1696.35	1696.35	1696.35	1697.14	1703.74	1695.85	1696.00	1697.89	1697.89
7	캐나다 달러 (CAD)	992.95	997.02	993.53	993.53	993.53	991.06	990.09	992.83	990.06	995.01	995.01
8	스위스 프랑 (CHF)	1544.07	1552.28	1546.45	1546.45	1546.45	1540.24	1551.95	1536.25	1535.55	1539.21	1539.21
9	호주 달러 (AUD)	878.20	884.36	878.28	878.28	878.28	879.29	880.86	879.56	876.63	881.96	881.96
10	뉴질랜드 달러 (NZD)	816.26	820.32	813.59	813.59	813.59	816.05	818.59	815.23	810.70	817.54	817.54
11	홍콩 달러 (HKD)	170.21	171.10	171.05	171.05	171.05	170.84	171.29	170.81	170.73	170.94	170.94
12	대만 달러 (TWD)	42.67	42.87	42.77	42.77	42.77	42.63	42.77	42.52	42.53	42.56	42.56
13	몽골 투그릭 (MNT)	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
14	카자흐스탄 텡게 (KZT)	2.97	2.97	2.97	2.97	2.97	2.98	3.00	3.00	2.98	2.97	2.97
15	태국 бат (THB)	37.61	37.72	37.52	37.52	37.52	37.35	37.47	37.42	37.47	37.61	37.61
16	싱가포르 달러 (SGD)	993.47	997.95	996.24	996.24	996.24	996.46	1000.19	996.23	994.67	996.83	996.83
17	인도네시아 루피아 (IDR) (100)	8.43	8.46	8.45	8.45	8.45	8.44	8.52	8.55	8.54	8.56	8.56
18	말레이시아 링깃 (MYR)	281.46	282.40	282.73	282.73	282.73	282.30	283.02	282.63	282.39	283.31	283.31
19	필리핀 페소 (PHP)	23.59	23.70	23.73	23.73	23.73	23.64	23.80	23.77	23.72	23.87	23.87
20	베트남 동 (VND) (100)	5.45	5.45	5.43	5.43	5.43	5.43	5.44	5.44	5.43	5.44	5.44
21	브루나이 달러 (BND)	993.47	997.95	996.24	996.24	996.24	996.46	1000.19	996.23	994.67	996.83	996.83
22	인도 루피 (INR)	16.01	16.08	16.08	16.08	16.08	16.06	16.11	16.07	16.06	16.08	16.08
23	파키스탄 루피 (PKR)	4.76	4.79	4.78	4.78	4.78	4.78	4.79	4.78	4.77	4.84	4.84
24	방글라데시 타카 (BDT)	12.12	12.18	12.18	12.18	12.18	12.17	12.20	12.17	12.16	12.18	12.18
25	캄보디아 리엘 (KHR)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
26	마카오 파타카 (MOP)	165.17	166.01	166.00	166.00	166.00	165.78	166.21	165.75	165.68	165.88	165.88
27	네팔 루피 (NPR)	10.01	10.05	10.05	10.05	10.05	10.04	10.07	10.04	10.04	10.06	10.06
28	스리랑카 루피 (LKR)	4.20	4.21	4.21	4.21	4.21	4.20	4.21	4.18	4.17	4.17	4.17
29	우즈베키스탄 솜 (UZS)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
30	미얀마 샣 (MMK)	0.63	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
31	멕시코 페소 (MXN)	77.57	77.61	77.83	77.83	77.83	77.59	77.68	77.18	77.66	78.20	78.20
32	브라질 헤알 (BRL)	268.80	269.97	271.82	271.82	271.82	271.65	271.40	269.68	267.49	271.02	271.02
33	아르헨티나 페소 (ARS)	1.61	1.62	1.62	1.62	1.62	1.62	1.63	1.63	1.62	1.63	1.63
34	칠레 페소 (CLP)	1.43	1.44	1.45	1.45	1.45	1.47	1.47	1.47	1.47	1.47	1.47
35	콜롬비아 페소 (COP)	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34

File Edit Selection View Go Run Terminal Help

STUDY\_Streamlit

EXPLORER

OPEN EDITORS

STUDY\_STREAMLIT

0200.환율CodeTable.xlsm

app01\_text.py

app02\_data.py

app03\_widget.py

app04\_status.py

app05\_layout.py

app06\_file.py

app07\_chart.py

app08\_chart.py

app09\_form.py

app10\_session.py

app11\_stock.py

app12\_candle.py

app13\_candle.py

app14\_predict.py

app15\_predict.py

app16\_predApp.py

app17\_predict\_가법승법.py

data\_iris.csv

OIP-1eSn\_DkdvhsY2h1nFyntvAHaJE.jpeg

requirements.txt

RPA\_Project\_test.py

RPA\_Project.py

RPA\_Project2.py

RPA\_Project3.py

RPA\_Project4.py

RPA\_Project5.py

RPA\_Project6.py

RPA\_TEST.py

OUTLINE

TIMELINE

RPA\_TEST.py

RPA\_Project\_test.py

RPA\_Project\_test.py > ...

1 #

2 # 주식가격 시계열 예측 앱.

3

4 # 필요한 라이브러리를 불러온다.

5 import streamlit as st

6 import pandas as pd

7 import numpy as np

8 import matplotlib

9 import matplotlib.pyplot as plt

10 import matplotlib.dates as mdates

11 import matplotlib.font\_manager as fm

12 from datetime import datetime, timedelta

13 from sklearn.linear\_model import LinearRegression # 선형회귀 모형.

14 import warnings

15 warnings.filterwarnings("ignore") # 성가신 warning을 꺼준다.

16

17 # # 나눔글꼴 경로 설정

18 font\_path = 'c:\\Users\\302-05\\AppData\\Local\\Microsoft\\Windows\\Fonts\\NanumGothic.ttf'

19 # # 폰트 이름 가져오기

20 font\_name = fm.FontProperties(fname=font\_path).get\_name()

21 # # 폰트 설정

22 plt.rc('font', family=font\_name)

23 # print(matplotlib.get\_cachedir())

24 # plt.rcParams['font.family'] = 'NanumGothic'

25 # plt.rcParams['font.family'] = 'Malgun Gothic'

26 # font\_list = [font.name for font in fm.fontManager.ttflist]

27 # print(font\_list)

28

29 df = pd.read\_excel('0200.환율CodeTable.xlsm', sheet\_name=['일일환율', '최근20일환율'], index\_col=0)

30 df1 = df[['일일환율']]

31 # df1 = df1.transpose()

32 print(df1)

33 print(df1.index)

34 #print(df1.reset\_index(drop=True))

35

36 df2 = df[['최근20일환율']]

37 # del df2['통화명'] # 통화명 인덱스 삭제

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Microsoft Windows [Version 10.0.18363.476]  
(c) 2019 Microsoft Corporation. All rights reserved.

(st) C:\STUDY\_Streamlit>

\* History restored

Microsoft Windows [Version 10.0.18363.476]  
(c) 2019 Microsoft Corporation. All rights reserved.

(st) C:\STUDY\_Streamlit>

cmd

Python

cmd

Ln 109, Col 22 Spaces: 4 UTF-8 CRLF Python 3.9.13 ('st': conda) Go Live Prettier

# ❖ Making Story

## 차트설정

종목 :

영국 파운드 (GBP)

데이터 기간(days) :

105

20

365

차트 스타일 :

default

☒ 현재 매매기준 환율

예측 기간(days) :

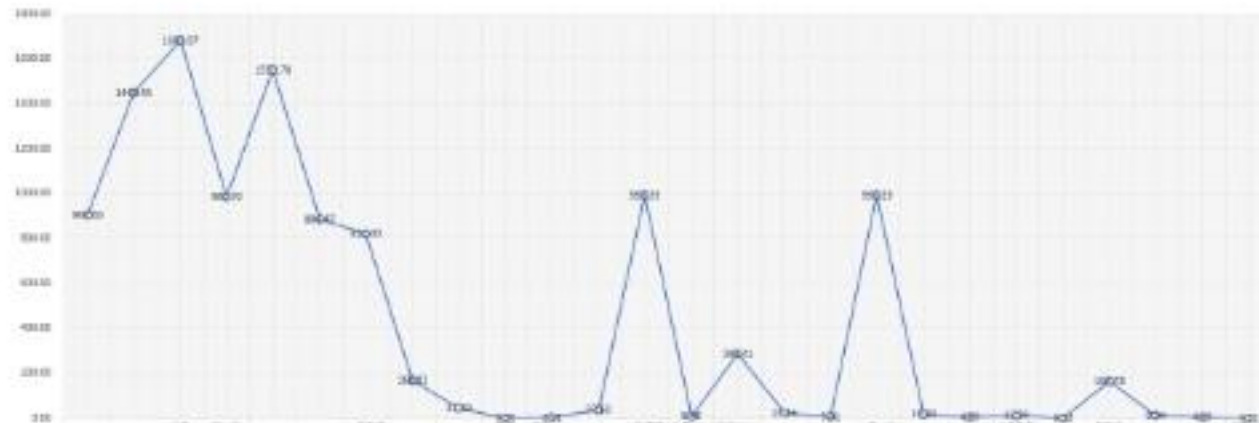
5

1

10

OK

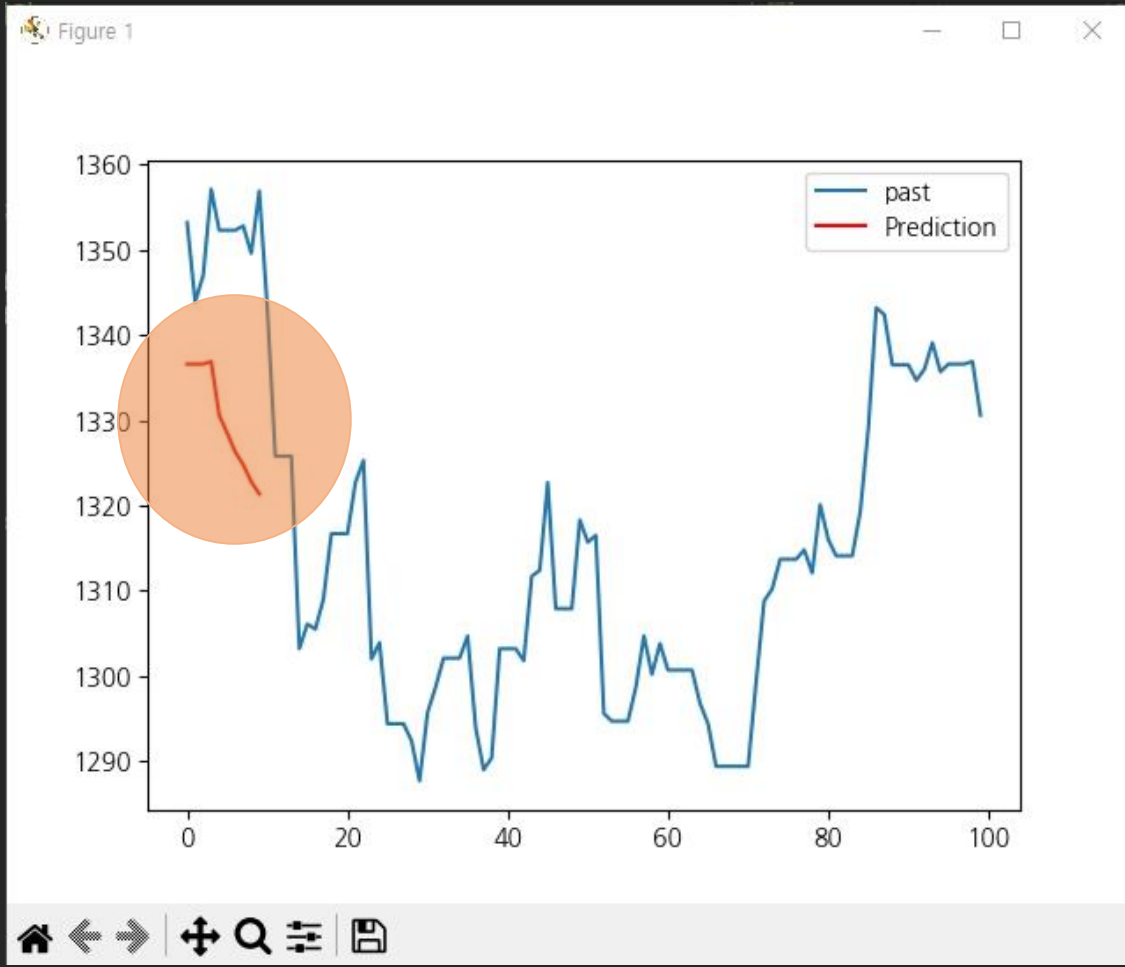
## 종목 : 영국 파운드 (GBP)



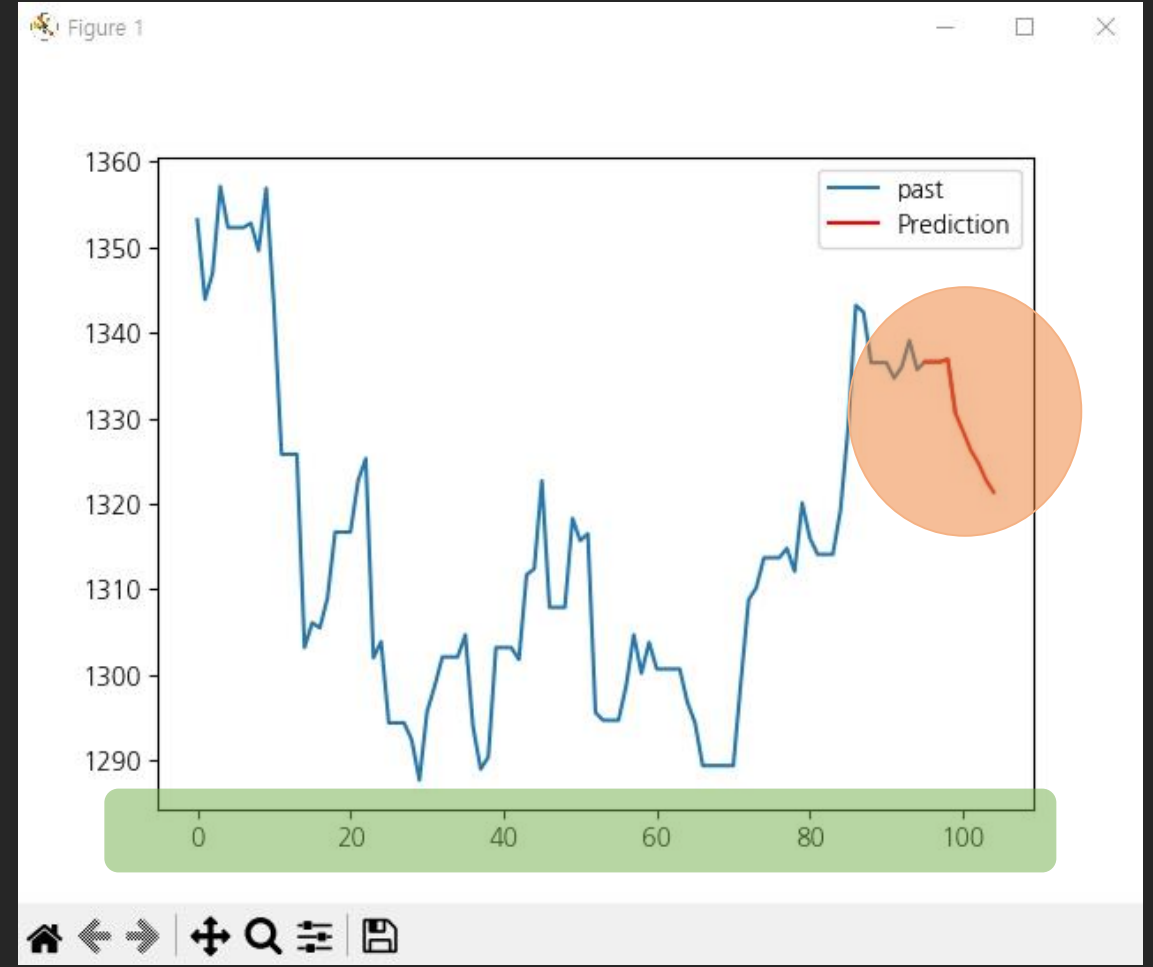
## 현재 매매기준 환율



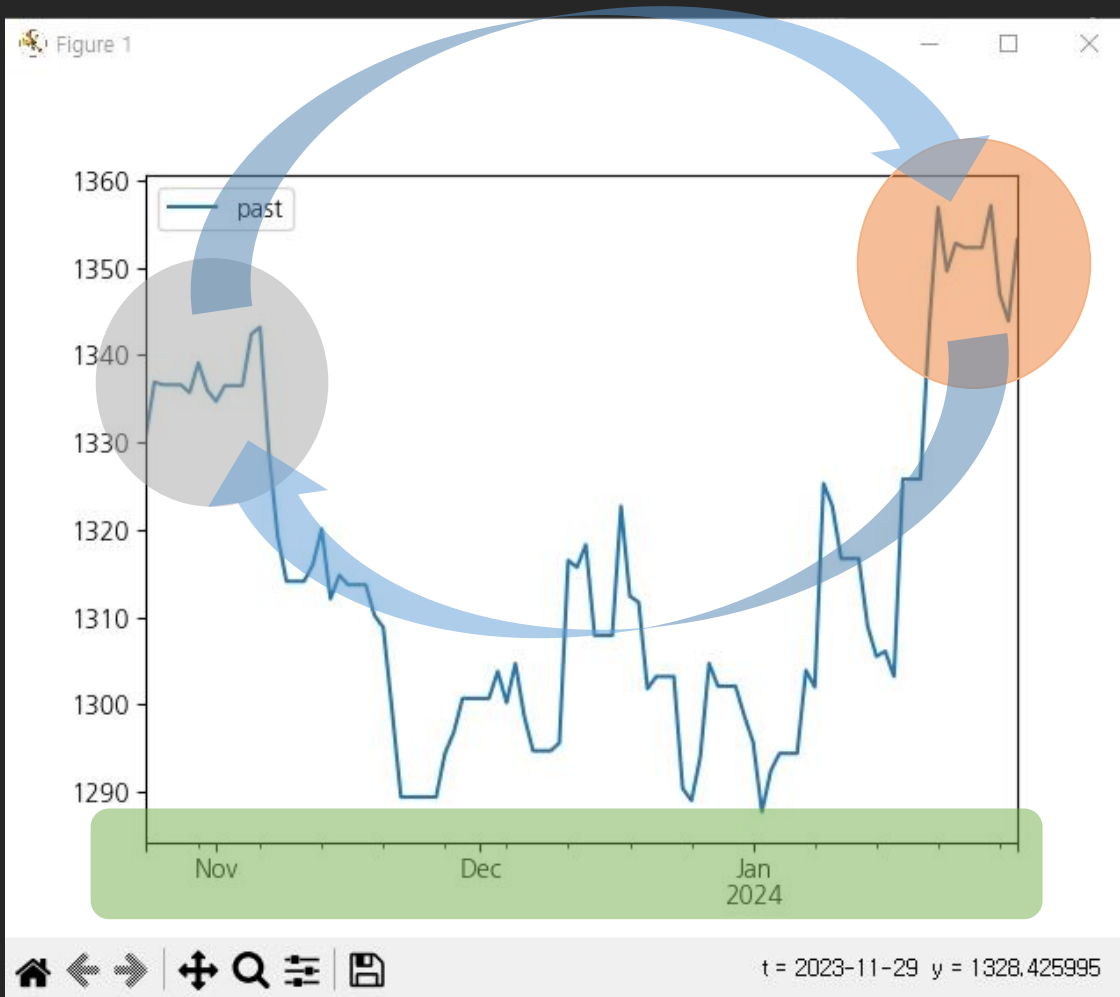
## ➤ Making Story



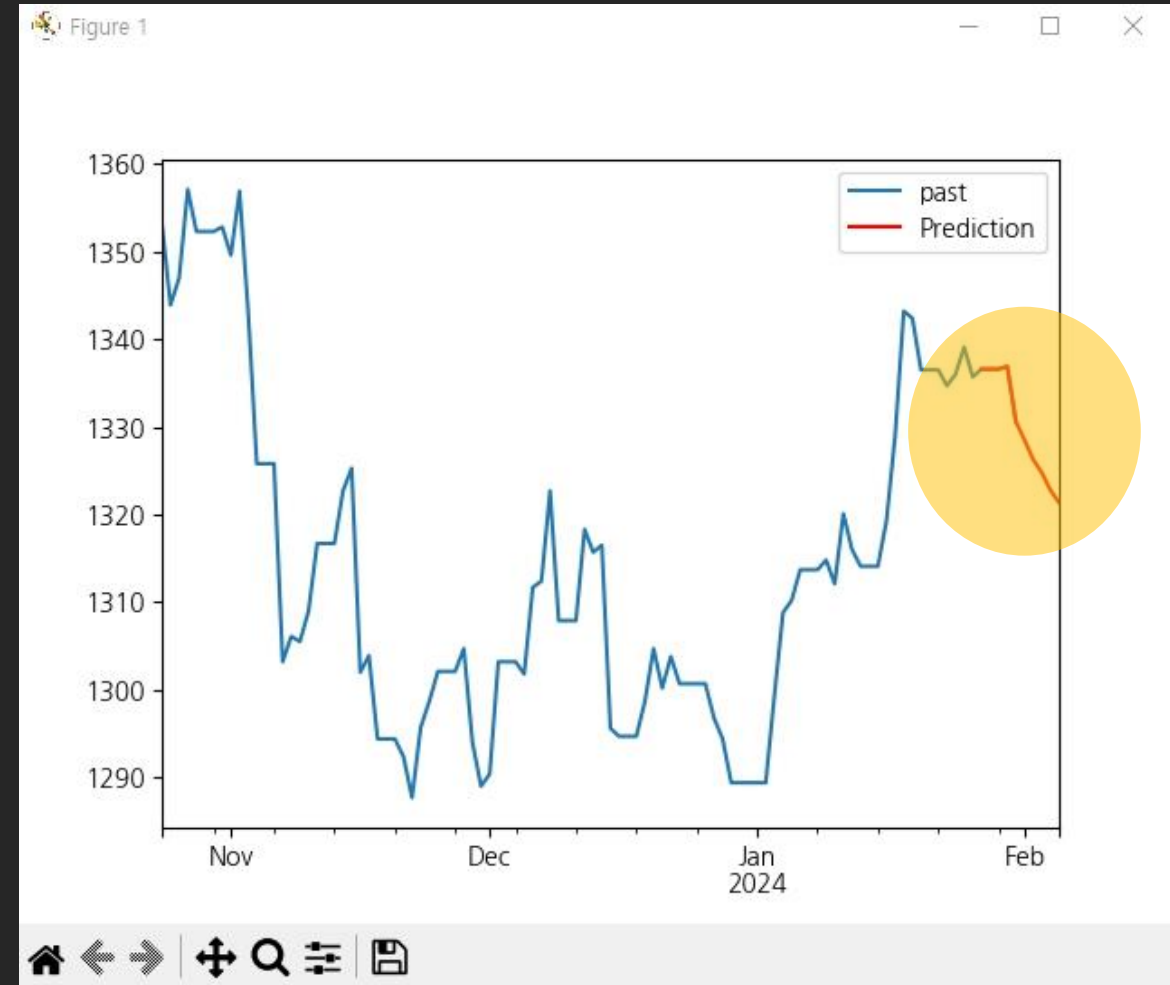
First Figure



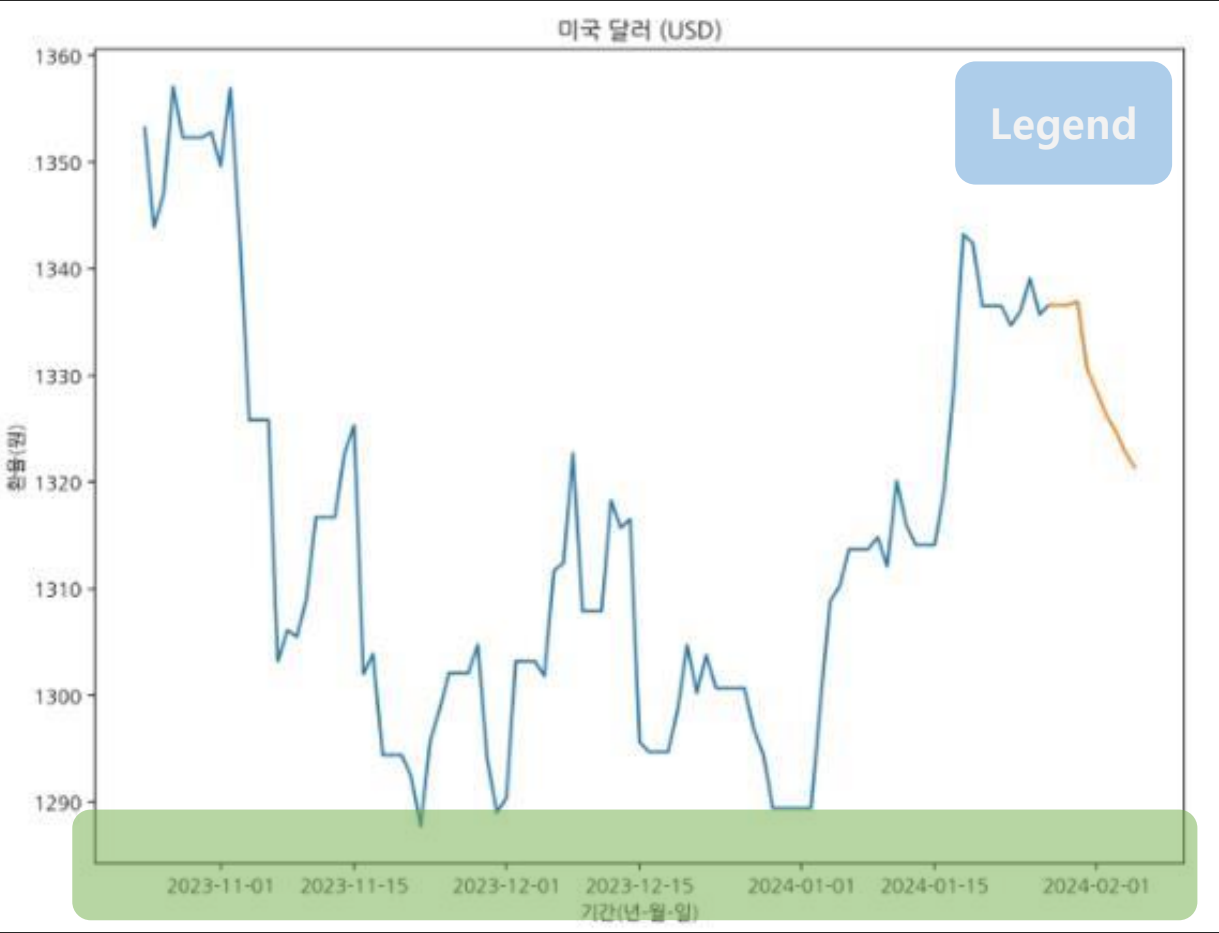
Second Figure



Third Figure



Fourth Figure

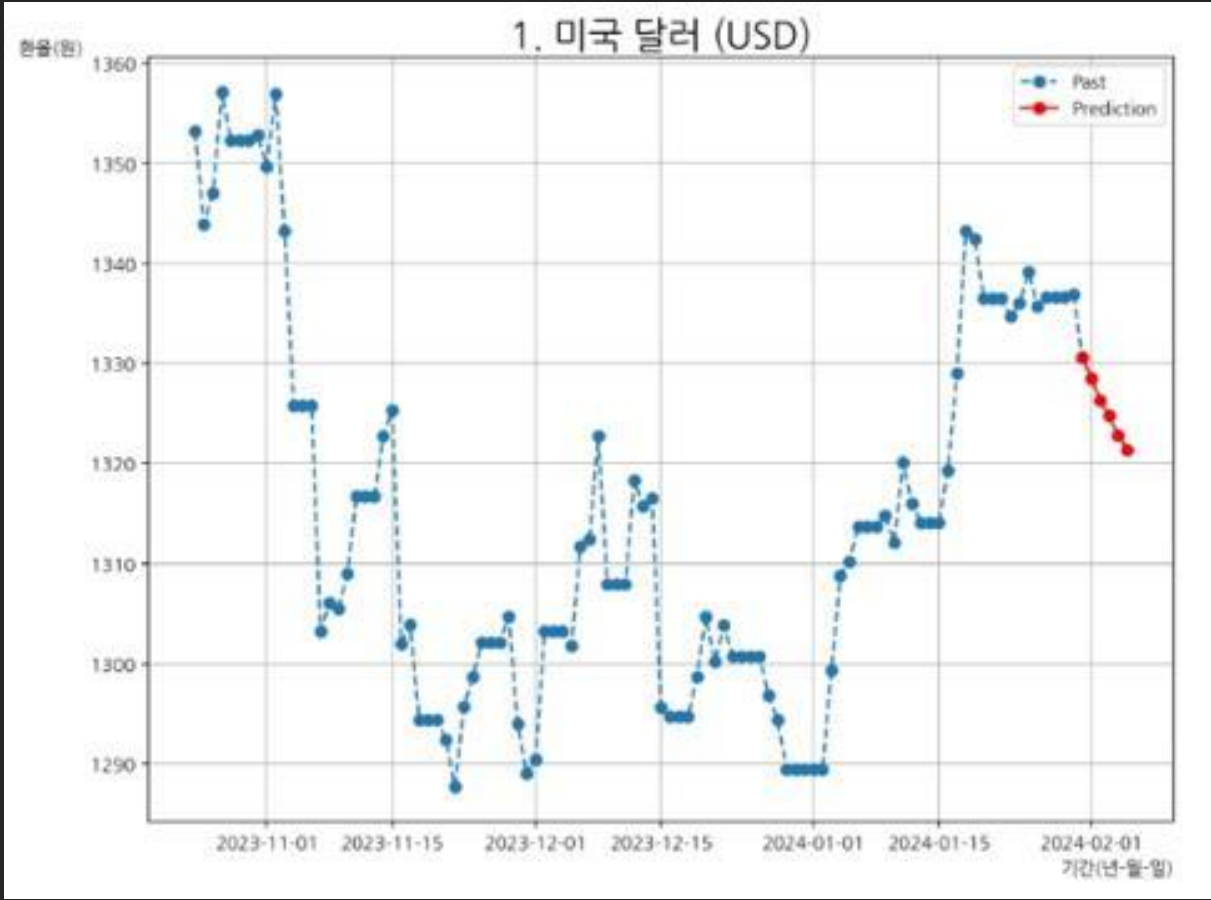


Fifth Figure



Sixth Figure





Fifth Figure



Sixth Figure



## ❖ Screen Description

# ➤ Screen Description

**가 나**

**차트 설정**

1-1. 통화명 & 데이터기간

통화명: 미국 달러 (USD)

데이터 기간 (days): 100

1-2. 차트 스타일

차트 색상: #1f77b4

라인 스타일: dashed

마커: (1, 2차트 적용) o

☒ Chart\_Grid (1, 2차트 적용)

1-3. 예측 기간

예측 기간 (days): 5

☒ 2\_예측값 상세보기

#. 예측기간이 0일때 비활성화

☒ 3\_현재 매매기준 환율

OK

**환율변동추이 분석 & 예측**

1

1. 미국 달러 (USD)

2

2. 예측값 상세보기 : 미국 달러 (USD)

3

3. 현재 매매기준 환율

통화명	현재 매매기준 환율
미국 달러 (USD)	1305.44
유로 (EUR)	128.51
일본 엔 (JPY)	175.80

## Description

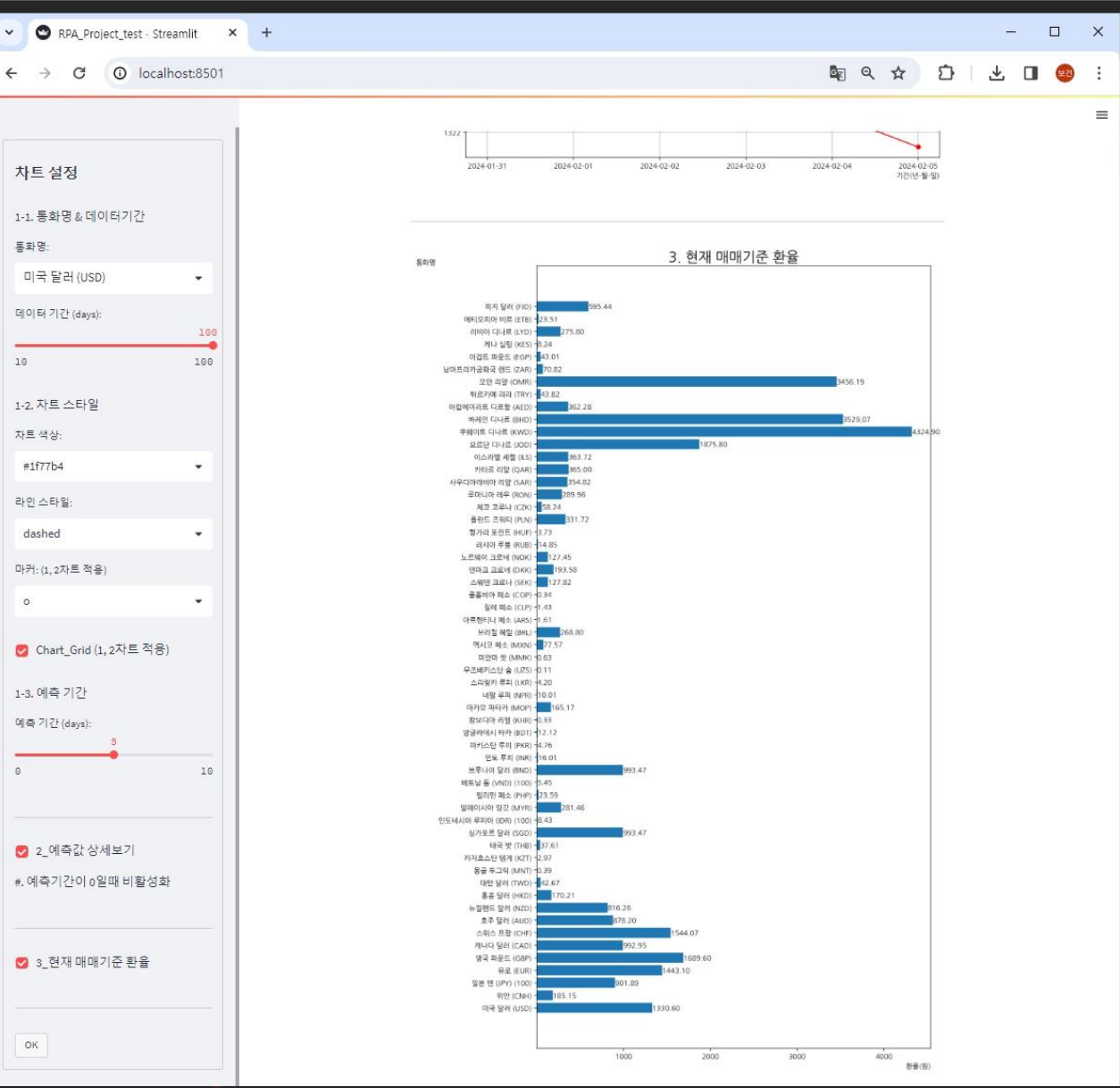
### 가. Side Bar

1. 통화명 설정 ( 57개 국가 )
2. 그래프에 보여질 데이터 기간 ( 100일 ) ( 23.10.24 ~ 24.01.31 )
3. 차트 스타일 ( 색상, 라인스타일, 마커 )
4. 차트 Grid 적용 ( 1, 2차트 동시적용 )
5. 데이터 예측기간 ( 0일 ~ 10일 )
6. 예측값 상세보기 ( 데이터 예측기간이 0일인 경우에 비활성화 )
7. 현재 매매 기준 환율 ( 57개 국가 )

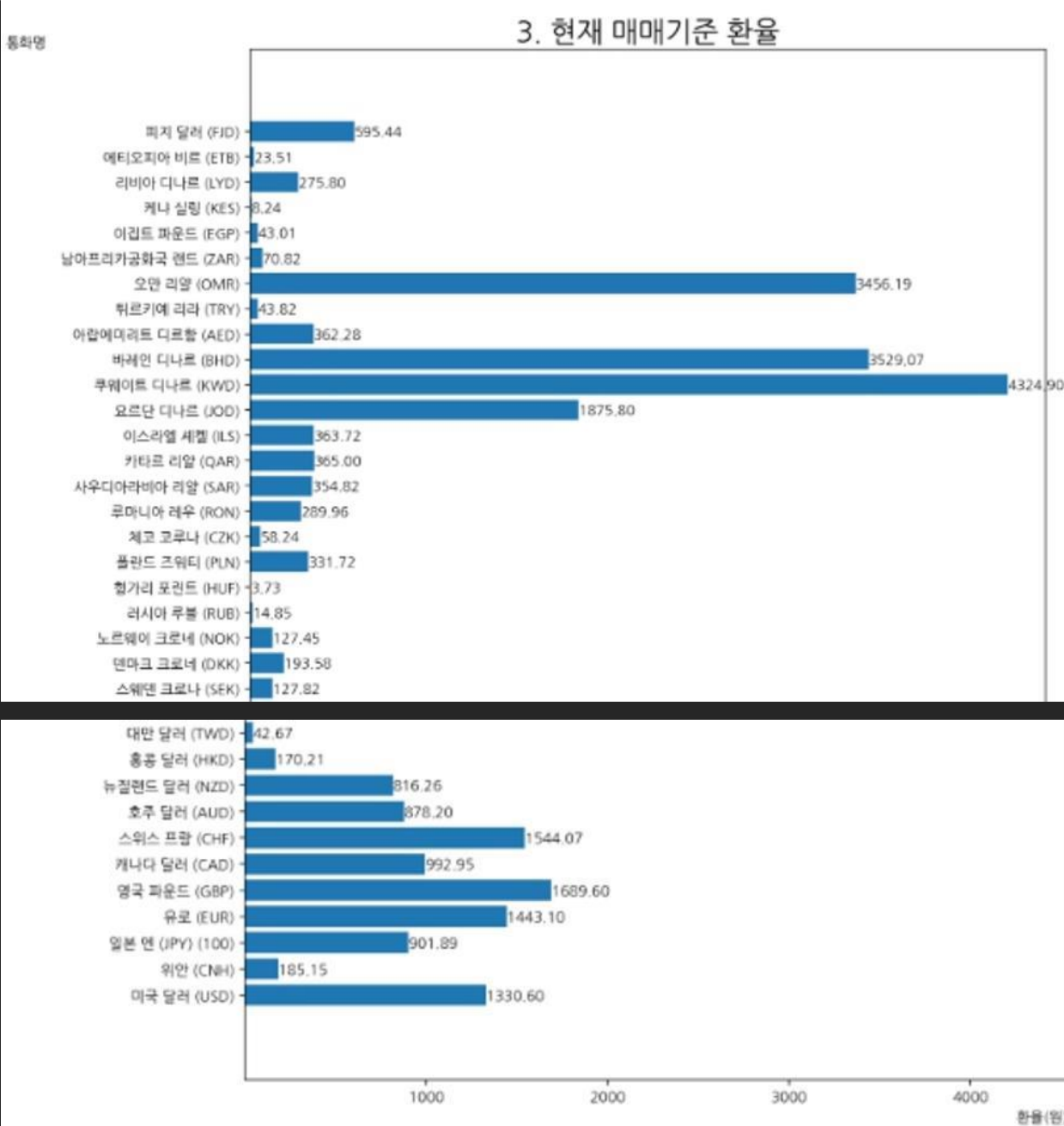
### 나. Main Page

1. 데이터 기간에 따른 현재 통화명의 환율과 예측기간에 따른 예측환율
2. 예측기간에 따른 예측환율 상세보기
3. 현재 매매 기준 환율 ( 57개 국가 )

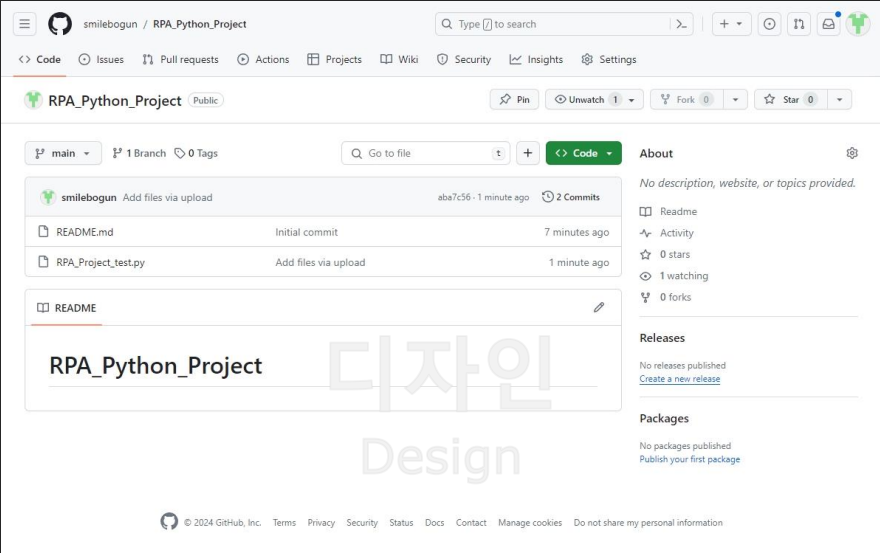
➤ Screen Description



<http://localhost:8501>



Git Hub



❖ Q & A

Streamlit.io



E N D