RPA Specialization

Course 6: UiPath Orchestrator and Capstone Projects

# Capstone Project-Stock Price Trend Comparison

# Contents

# 1. Introduction

You learned different automation skills throughout all the courses in the RPA Specialization. Now, it's time to test your skills through this project which uses different automation techniques. This document contains all the information required to build this project. Go through all the sections of this document to understand the requirements of the project.

# 2. Project Background

You are expected to build a project to automate the stock price trend comparison for an organization. Every day, the organization wants to record the rise and fall in the stock prices of two companies called Exxon RPA Corp. and WEX Academy Inc. and compare the prices of both the companies using a graph. It wants to send a report containing the stock prices and the comparison graph to a customer after the trading time is over. A trading time is when actual trading is in progress. For example, in the USA, the trading time is between 9:30 AM to 4 PM.

# 3. Problem Statement

Build a project in Studio that extracts the share prices of 'Exxon RPA Corporation' and 'WEX Academy Inc' from a website, following a fixed time interval. Create a graphical representation of the data in an excel file and email the file to the customer at the end of the day.

- Open www.rpachallenge.com and navigate to the RPA Stock Market webpage (https://www.rpachallenge.com/assets/rpaStockMarket/index.html).
- Extract the share price of 'Exxon RPA Corporation' every 30 minutes, from 9 AM till 4 PM.
    - Store the share prices under the third column header of an excel file with the header as 'Exxon RPA Corp'. Under the first and second columns, store the date and time of data extraction respectively.
- Extract the share price of 'WEX Academy Inc' every 30 minutes, till 4 PM.
    - Store the share prices under the fourth column header of the excel file with the header as 'WEX Academy Inc'.
- Create a double line graph of the collected data to show the changes in the share prices over time in the same excel sheet.
- Send the excel file in an email to the customer.

# 4. Expected Project Output

The project's final output should be an email to the customer containing an excel file with the share prices of 'Exxon RPA Corporation' and WEX Academy Inc, along with a graph.

# 5. Environment Prerequisites

Before beginning this project, you must ensure that your system environment is equipped with the prerequisites necessary to create and execute the project successfully. There are four types of prerequisites for this project:

1. System Applications/Software
2. UiPath Studio Packages
3. Initial data files
4. Others

## 5.1 System Applications/Software

Ensure that the applications/software listed in the table below are installed in your system.

| Applications/Software | Use |
|---|---|
| UiPath Studio Academic Alliance Version 2021.10 | Create automation using available project activities. |
| Microsoft Excel | Store data and create reports. |
| Microsoft Outlook | Send an email to the project owner |
| Browser – Microsoft Edge | Extract share price data from a website. |

## 5.2 UiPath Studio Packages

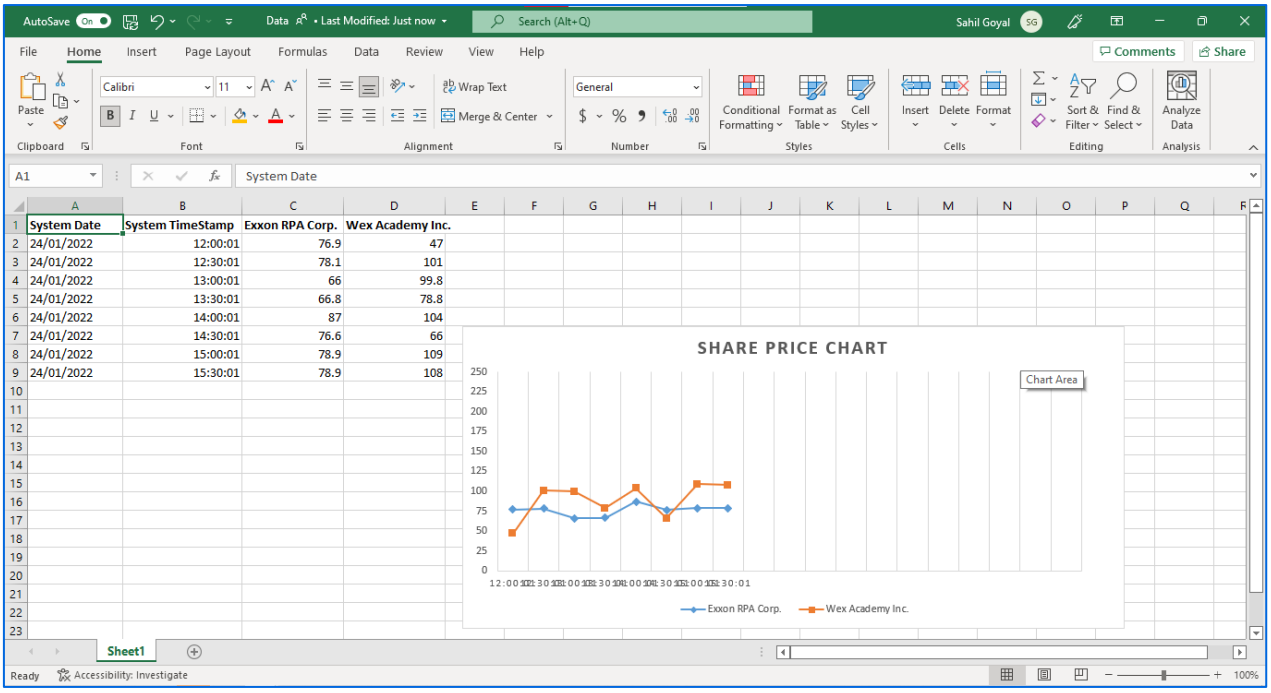
Ensure that the packages listed in the table below are installed in your Studio.

| Package Name | Version |
|---|---|
| UiPath.Excel.Activities | 2.11.4 |
| UiPath.System.Activities | 22.4.1 |
| UiPath.UiAutomation.Activities | 21.10.5 |
| UiPath.Mail.Activities | 1.12.3 |

## 5.3 Initial Data Files

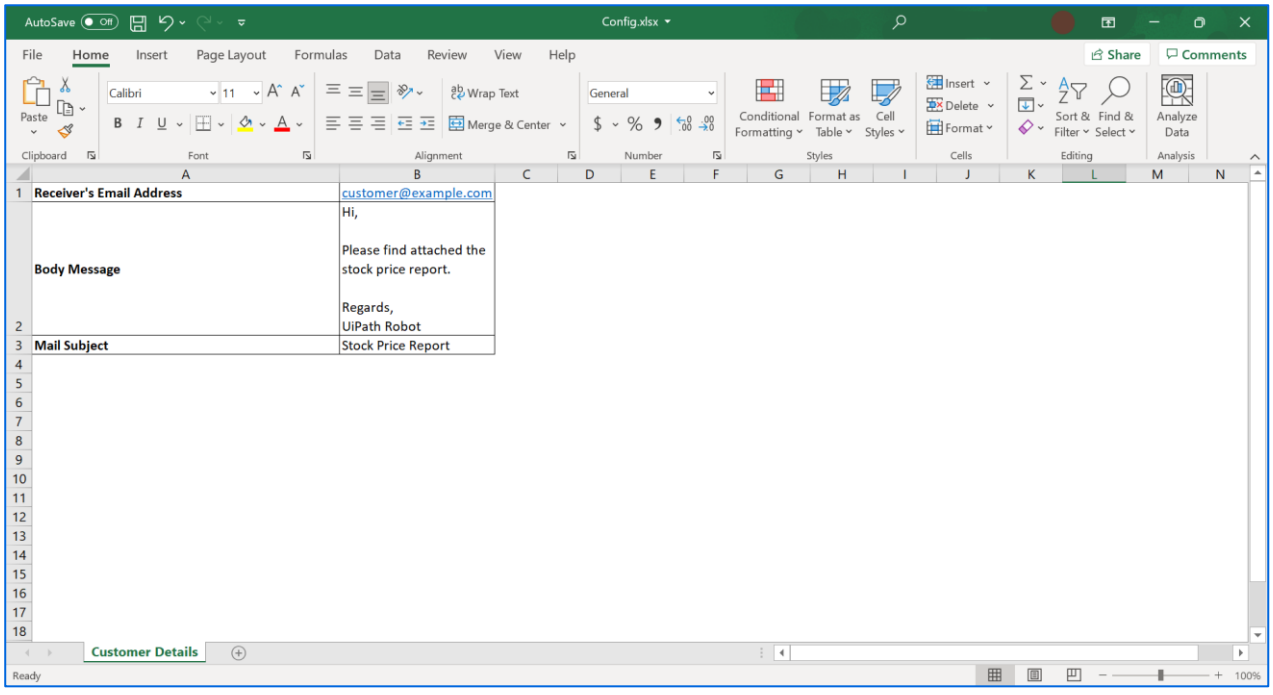
Ensure that you have the initial data files, as mentioned below:

1. Create a blank excel file named 'Data.xlsx', with pre-defined values as 'System Date' in cell A1, 'System TimeStamp' in cell B1, 'Exxon RPA Corp' in cell C1, and 'WEX Academy Inc' in cell D1 in a sheet. A double line graph should also be created in the same sheet, which would show the changes in the share prices over time. Initially, the chart should be empty, which would be built as the data is updated in the file during the process. Ensure that this excel file is empty and only has headers before running the process. It would be best if you also disable the 'Auto Save' option of excel. A sample Data.xlsx file has been provided along with this course. The screenshot of the file is shown below:




| System Date | System TimeStamp | Exxon RPA Corp. | Wex Academy Inc. |
|---|---|---|---|
| 24/01/2022 | 12:00:01 | 76.9 | 47 |
| 24/01/2022 | 12:30:01 | 78.1 | 101 |
| 24/01/2022 | 13:00:01 | 66 | 99.8 |
| 24/01/2022 | 13:30:01 | 66.8 | 78.8 |
| 24/01/2022 | 14:00:01 | 87 | 104 |
| 24/01/2022 | 14:30:01 | 76.6 | 66 |
| 24/01/2022 | 15:00:01 | 78.9 | 109 |
| 24/01/2022 | 15:30:01 | 78.9 | 108 |

2. Create a blank excel file named ‘Config.xlsx’. Enter ‘Receiver’s Email Address, ‘Body Message’, and ‘Mail Subject’ in Column A. In the adjacent cells of column B, enter the customer’s email address, a message that you want in the mail body, and ‘Stock Price Report’ as the subject of the email. A sample Config.xlsx file has been provided along with this course. The screenshot of the file is shown below:




| | |
|---|---|
| Receiver's Email Address | customer@example.com |
| Body Message | Hi,<br><br>Please find attached the stock price report.<br><br>Regards,<br>UiPath Robot |
| Mail Subject | Stock Price Report |

### 5.4 Others

There are some other prerequisites that should be ready before you start working with the project development. These are:

1. You should have a working internet connection to access the webpage for the project. The overview of the webpage is given in section 6.
2. Ensure that your computer stays on till the project is running. The project is expected to run every 30 minutes from 9 AM till 4 PM.

## 6. Process Overview

The points listed below give you a chronological overview of the actions that the robot will perform upon execution of the project:

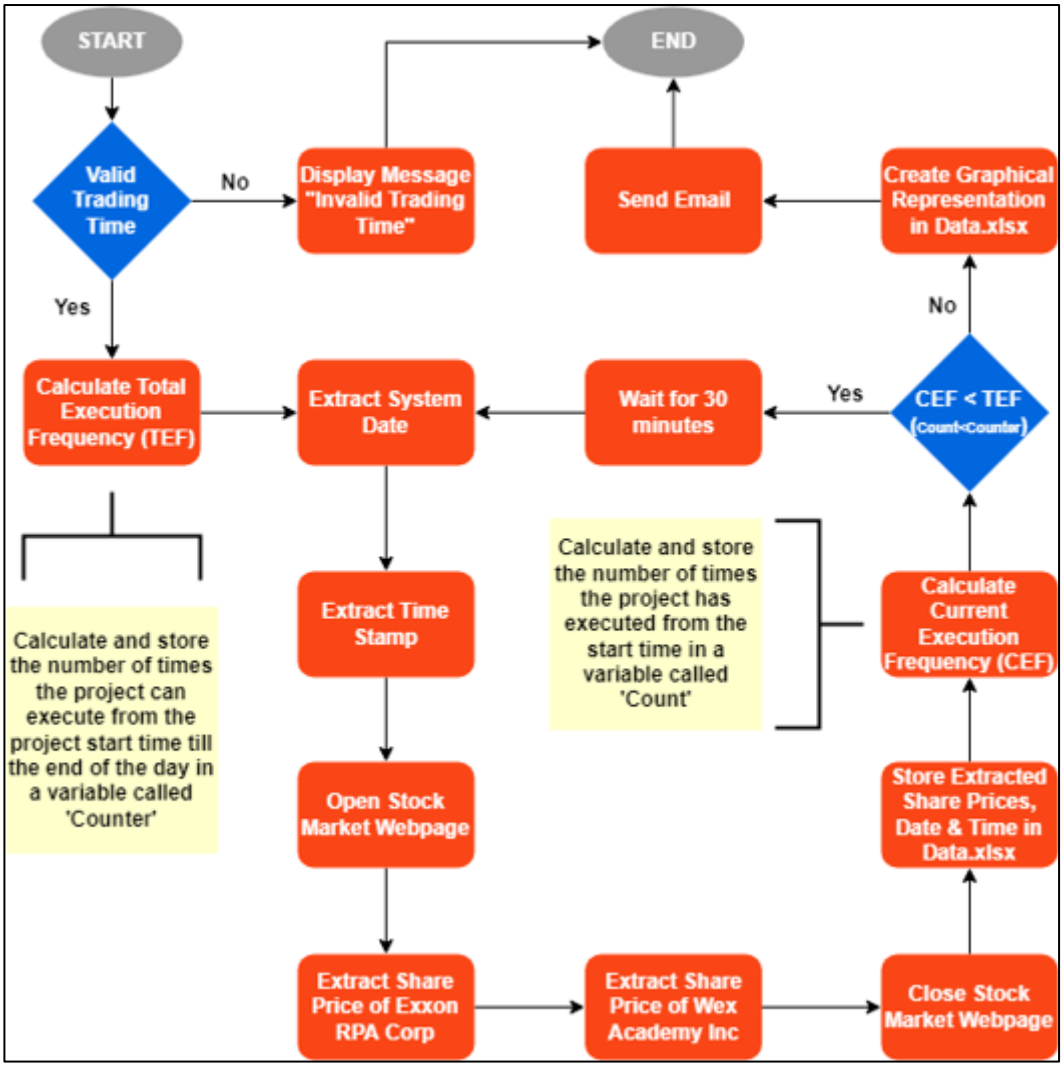
1. START.
2. The first action that the project should take is to check whether the current time is a valid trading time; that is, it is greater than 9 AM and less than 4 PM.
    i. If the trading time is not valid, the project should stop executing.
    ii. If the trading time is valid, the project should calculate its total execution frequency or the number of times it can run till 4 PM. If you want to run the project every 30 minutes and begin its execution at 2 PM, the project will execute four times.
3. After calculating the execution frequency, the project should extract the system date and timestamp.
4. After extracting the date and timestamp, the project should open the Stock Market Webpage on RPAChallenge.com.
5. After opening the webpage, the project should extract the share prices of Exxon RPA Corp and Wex Academy Inc and close the webpage.
6. After closing the webpage, the project should store the extracted date, timestamp, and share prices in the Data.xlsx file.
7. After storing the data in the excel file, the project should count the current execution frequency or the number of times it has run.
8. After calculating the current execution frequency, the project should check whether it is less than the total execution frequency.

i. If the current execution frequency is less than the total execution frequency, the project should wait for 30 minutes. After 30 minutes, the project should repeat extracting the date, timestamp, and stock prices of the companies and storing them in the Data.xlsx file.

ii. If the current execution frequency is not less than the total execution frequency, the project should create a graphical representation of the collected data in the excel file and email the customer. The email address, subject, and body message should be taken from the Config.xlsx file.

9. After sending the email, the project should stop executing.
10. STOP.

The process overview is visually represented in the flowchart below:



## 7. Webpage Overview

The webpage from where the stock prices will be extracted is RPA Stock Market on www.rpachallenge.com. On the left of the screen, you can see a drop-down box. In its drop-down menu, you will find the names of a few companies whose stock prices can be extracted (*highlighted square 1*). When you select a company and click the search icon, the section below displays its stock price (*highlighted square 2*) and the associated chart.