STANLEY BUILD-A-THON
ROBOTIC PROCESS AUTOMATION

TOPIC:
WEB AUTOMATION

TEAM SKYLINES:
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SABAVATH PREETHI

1. INTRODUCTION:

1.1 Overview

Robotic Process Automation (RPA) is a software technology that's easy for anyone to use to automate digital tasks, a technology used to build, develop, and manage software robots that emulate human actions interacting with digital systems and software. With RPA, software users create software robots or bots, that can learn, mimic, and then execute rules-based business processes.

Web Automation is a concept of letting robots or web automation tools perform tasks and processes on a web browser or web application. To perform repetitive and error-prone tasks, such as filling out long HTML forms, browser automation tools are used that automate your Web browser.
Example: filling long forms with multiple fields, scraping content from the web page, etc.

1.2 Purpose

Businesses and applications today are widely structured on web-based systems. Information that populates these systems is dense and demands extensive processing. Many of the tasks involved are repetitive, tedious and take up a lot of time and money. This is where web automation comes in. Form filling, screen scraping, data extraction and transfer between applications, websites testing and periodical report generation are major common tasks that can readily benefit from web automation.

Blue prism, one of the top most leading robotic process automation tools offers the most demanding users with scalability, flexibility, and governance requirements needed a planned application. The features of the RPA platform that supports you to transform your existing business processes and cause the differentiated customer as well as front-line experiences like Plug &Play Access, Work Queues, Digital Exchange, Dependency Tracking, Multi-Team Environments, Web API, Chrome Support, Firefox Browser Plug-in, New Outlook Email VBO, etc.

When RPA is married with AI technologies (aka Intelligent Automation), it enables us to reimagine how businesses operate by seamlessly integrating technology, work processes, and people.Advantages commonly attributed to automation include **higher production rates and increased productivity**, more efficient use of materials, better product quality, improved safety, shorter workweeks for labour, and reduced factory lead times.

2. LITERATURE SURVEY:

2.1 Existing Problem

People use their browsers to access information and perform a wide variety of tasks. Browser automation tools can automate your Web browser to perform repetitive and error-prone tasks, such as filling out long HTML forms. Various skill levels will need to be accommodated by the automation tool. A non-programmer might need to simply record some test scripts, while programmers and advanced testers need more sophisticated scripts and libraries.Web browser automation tools work by recording the series of steps that make up a specific transaction, and then play it back by injecting JavaScript into the target web pages, and then tracking the providing the results. These web automation tools resemble macros, but are much more flexible and sophisticated.

The result of the product testing stage for every product is the most determining factor for the product's performance and success in the market. For software products, the software must go through the testing stage to detect and fix any bugs in the code. Any bug that escapes the testing would end up reducing the quality service that the app produces. An effective testing process is only possible once you can find the most appropriate and obtainable tool for the job. There are lots of web automation tools are available for web applications, mobile application testing. Software testing tools make your work easy and save your lot of time. You can find free automation tools or Paid tools as per your needs. Two modes of testing are available: the manual and the automation testing. Selenium, Appium, Katalon Studio, Cucumber, HPE Unified Functional Testing (UFT), SoapUI, Test Complete, etc

2.2 Proposed solution

With Automation, Web automation has become very simple, it reduces manual errors; eliminates repetitive and time-consuming work. Moreover, it is ten times faster than other tools and does not require a screen. Automation executes at the backend without any software. It is a flexible tool which works with any spreadsheet format with different header styles and positions of columns. Even for many repetitive tasks like Data retrieval, extraction, migration, Import and Export, etc. automation is required to avoid this repetitiveness in any activities.Blue Prism RPA offers the workplace with an elastic, multi-talented and multi-faced digital workforce, supporting enterprise automate as well as scale business processes through machine learning, AI, sentiment analysis

and intelligent automation. This RPA tool is being used by more than 1000 enterprises worldwide. This highly scalable digital workforce can be deployed in on-premise and cloud environments. This platform also enables intense performance, high availability, failover, and disaster recovery states and addresses potentially significant variations in operational demand.The architecture of the Blue Prism involves four main software elements. They are:
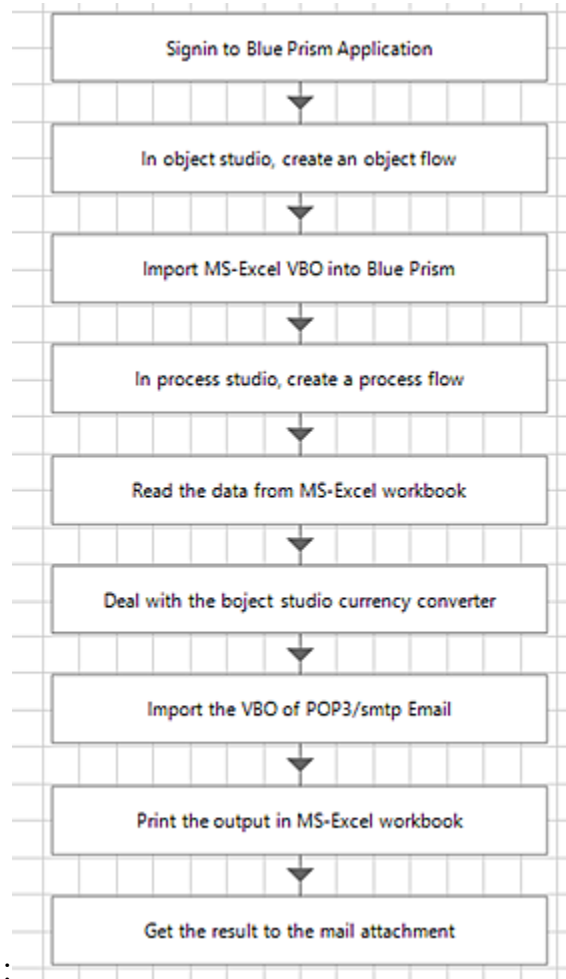
➤ **Object Studio** – Enables you to create a reusable Visual Business Object (VBO) for your business process.

➤ **Process Studio** – Enables you to design, create, edit as well as test business process, developed from reusable VBO.

➤ **Control Room** – Enables you to schedule, run and handle processes

➤ **Release Manager** – Streamlines and automates release as well as change management functions within the platform.

3.THEORITICAL ANALYSIS:

3.1 Block diagram


```
Signin to Blue Prism Application
        ↓
In object studio, create an object flow
        ↓
Import MS-Excel VBO into Blue Prism
        ↓
In process studio, create a process flow
        ↓
Read the data from MS-Excel workbook
        ↓
Deal with the boject studio currency converter
        ↓
Import the VBO of POP3/smtp Email
        ↓
Print the output in MS-Excel workbook
        ↓
Get the result to the mail attachment
```

3.2 Hardware/ Software Designing:

Hardware Requirements: The following is the Hardware required to complete this project:

- Windows 8.1 or 10 (64-bit version only) OR Cloud: Get started free, *Cloud account required.
- Minimum 10GB free disk space.
- Internet connection to download and activate.
- Administration access to install and run Blue Prism.
- Minimum System Requirements To run Office Excel 2013, your computer needs to meet the following minimum hardware requirements.

Software Requirement:

Blue Prism: The following are the pre-requirements for the project:

- Signup for the Blue Prism and create a new account from its official website.

- Login to Blue Prism Portal and install the software and get license for the same.

- Set up your software into our pc/laptop by applying the license key, and there we go with the installation of Blue Prism onto your system.

4. EXPERIMENTAL INVESTIGATIONS:

Use Case: Web Automation (Robotic Process Automation)

Solution: Currency is given in the excel sheet which is read by bot, the bot converts the currency into given respective currency and returns the value in excel sheet.We make use of Blue Prism software which is used for automating Excel, XML, csv, pdf, etc and prepare reports. The RPA Blue Prism tool offers flow chart like designer with drag and drop feature to automate each step of the business processes. This involves downloading reports and data from websites, followed by data massaging. Automation Anywhere is an RPA tool that is used to Automate any repeated simple/complex tasks with ease. Automation Anywhere is not perfect but it is still the best tool available in today's market. Here we make use of Blue Prism for automating Excel tasks and preparing reports.

Our aim for the project is to use the bots to read and extract information from Excel, transfer the data into url, then converting the value into allocated currency value. These are done step-by-step through loops, where we give the required values, data types, and task to be done. We have in-built loops according to our needs and uses in our Blue Prism software. We should manually pass the data in several steps with import and export of data to and from excel which is not efficient. Here the bots are doing the work for us. Through the software, we have been able to reduce the time that we spend on manual, repetitive tasks so that we can focus on activities that add value to the business or to ourpartners and customers. The most important things are saving time, increasing control, and increasing automation. Blue Prism software enables business operations to be agile and cost effective by automating, manual, rule-based, repetitive

back-office processes and improving accuracy by developing a "Digital Workforce".

5.FLOW CHART:
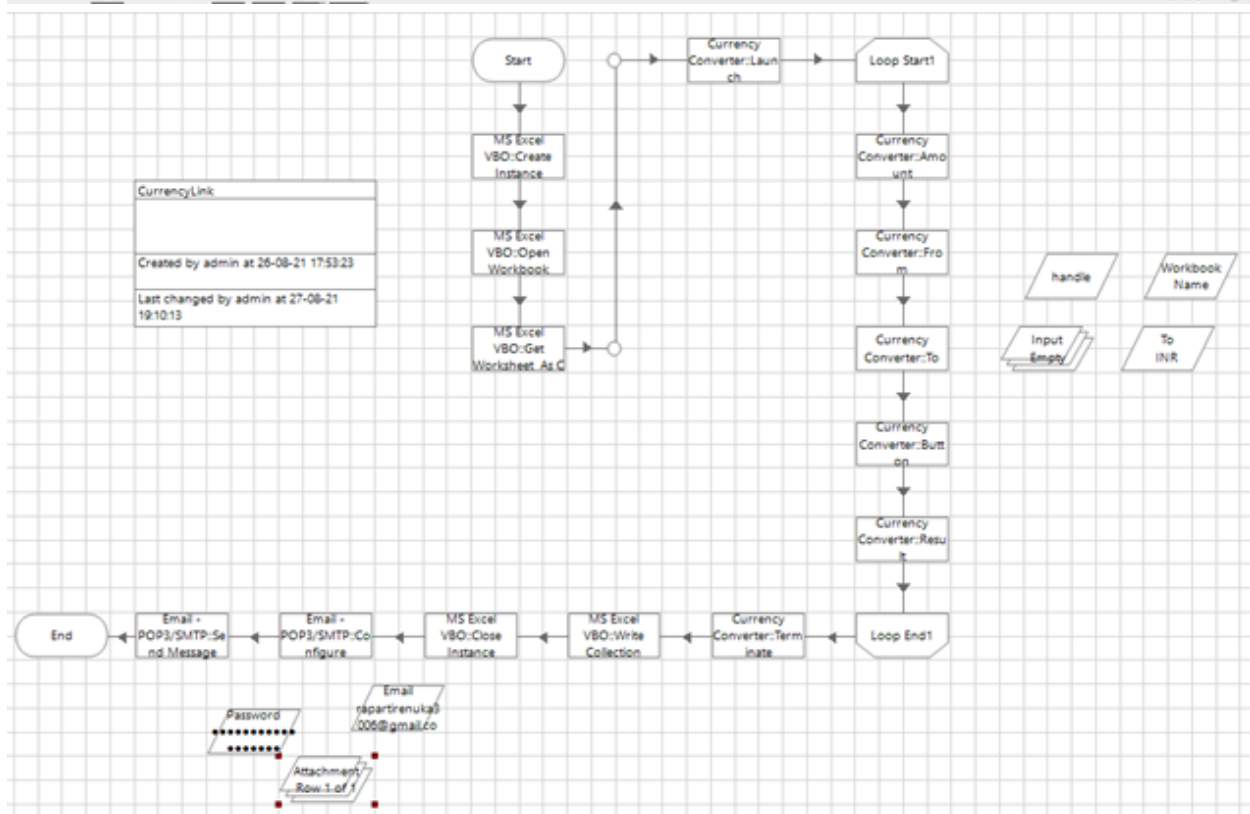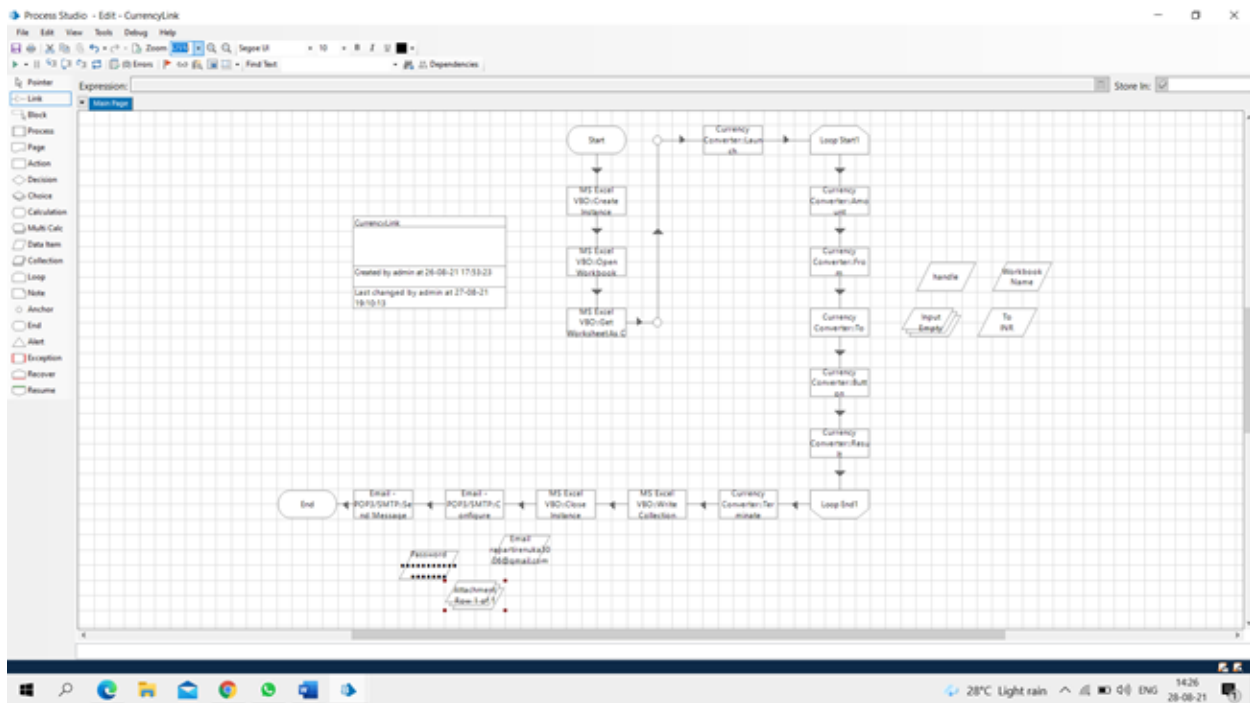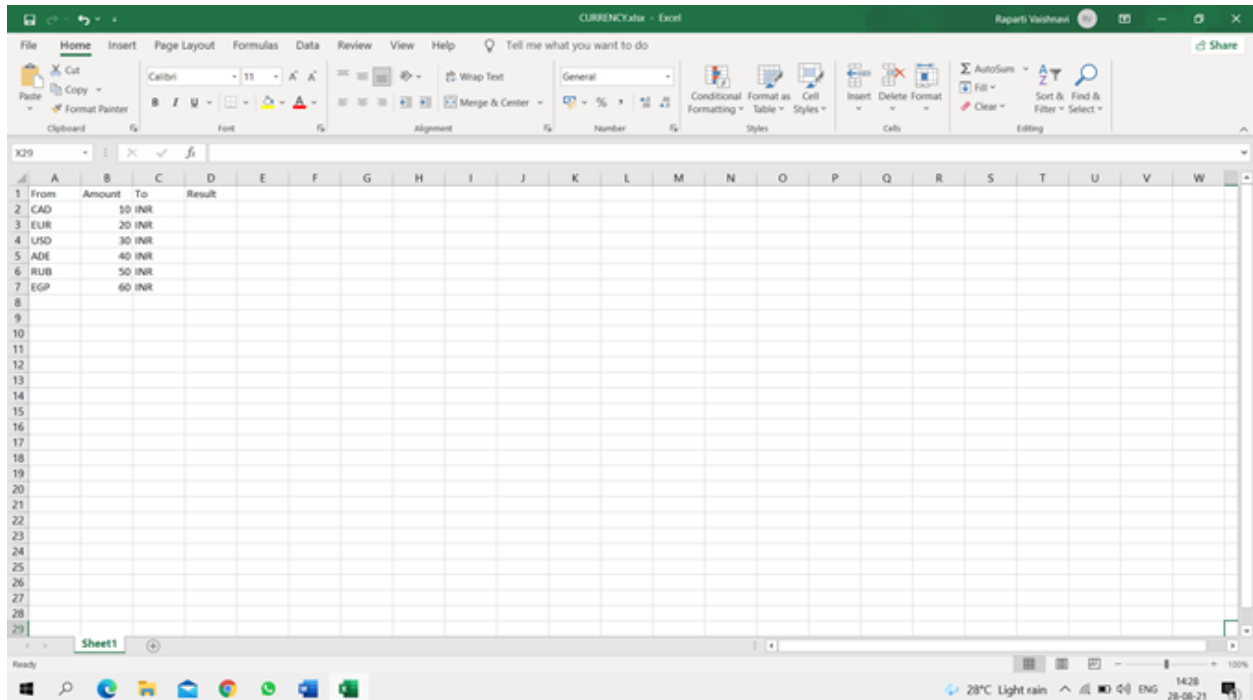
6.RESULT:

EXCEL SHEET:

FLOW BEING EXECUTED:

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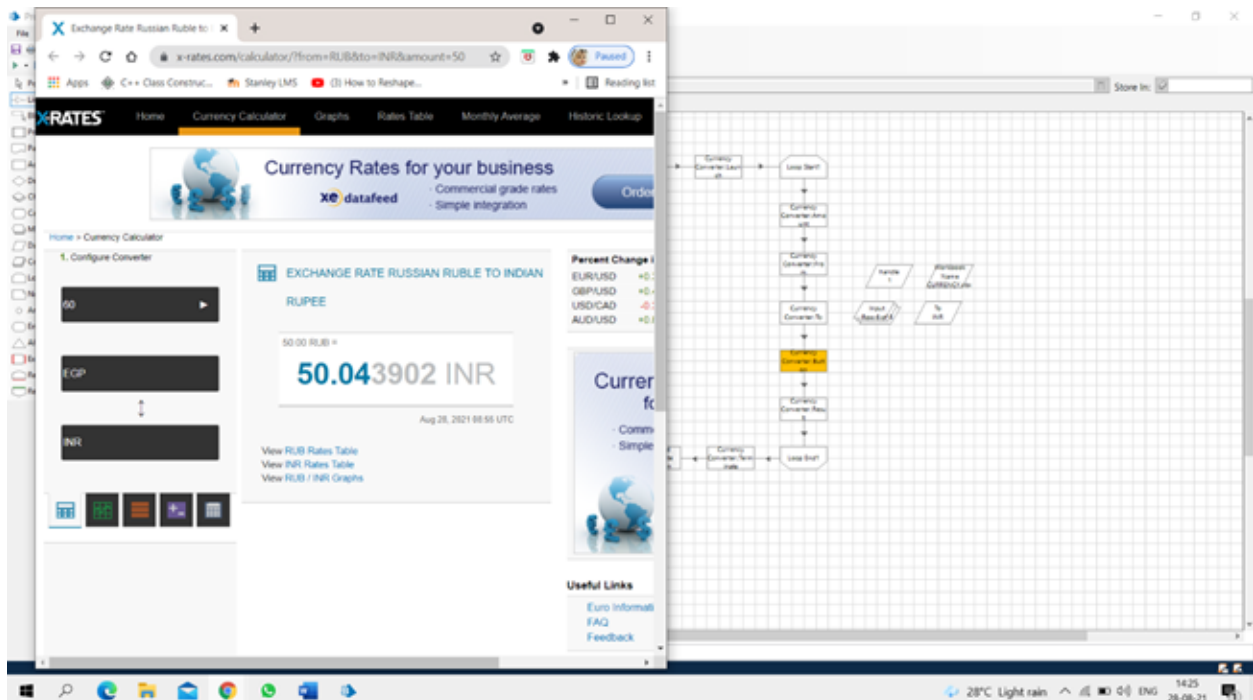
CONVERTED VALUES BEING ADDED TO EXCEL SHEET:

URL TERMINATES AND SEND MAIL THE MAIL:
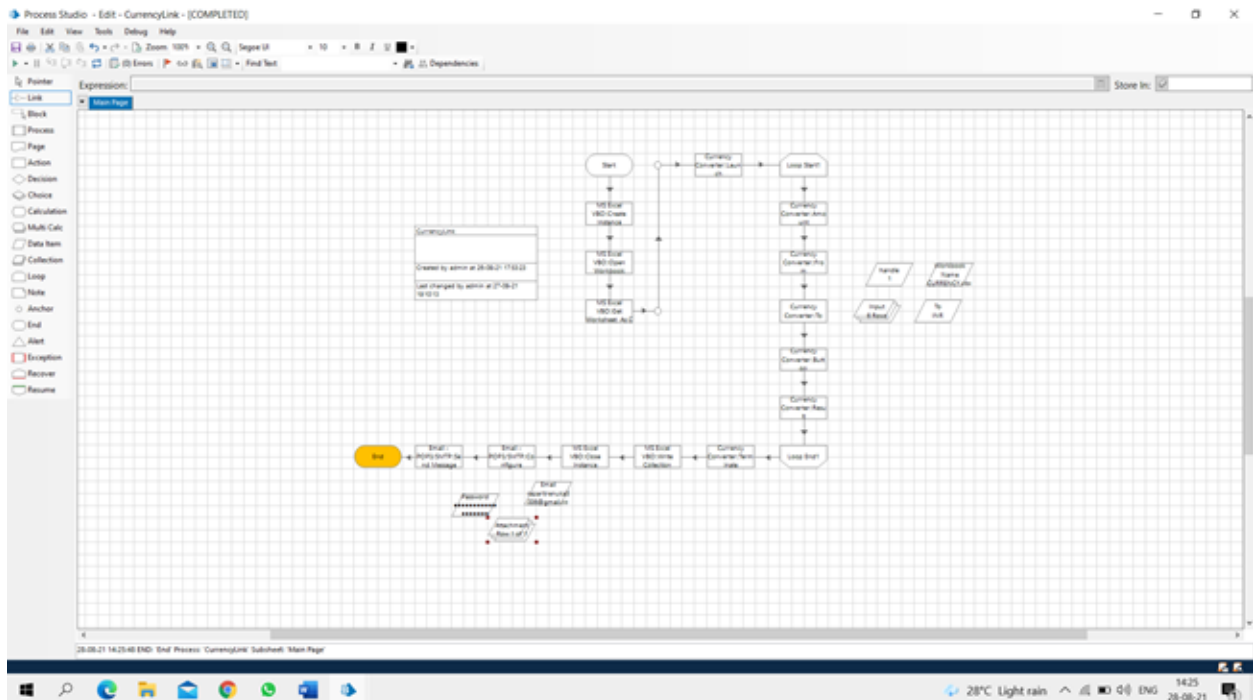
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SENDER MAIL:
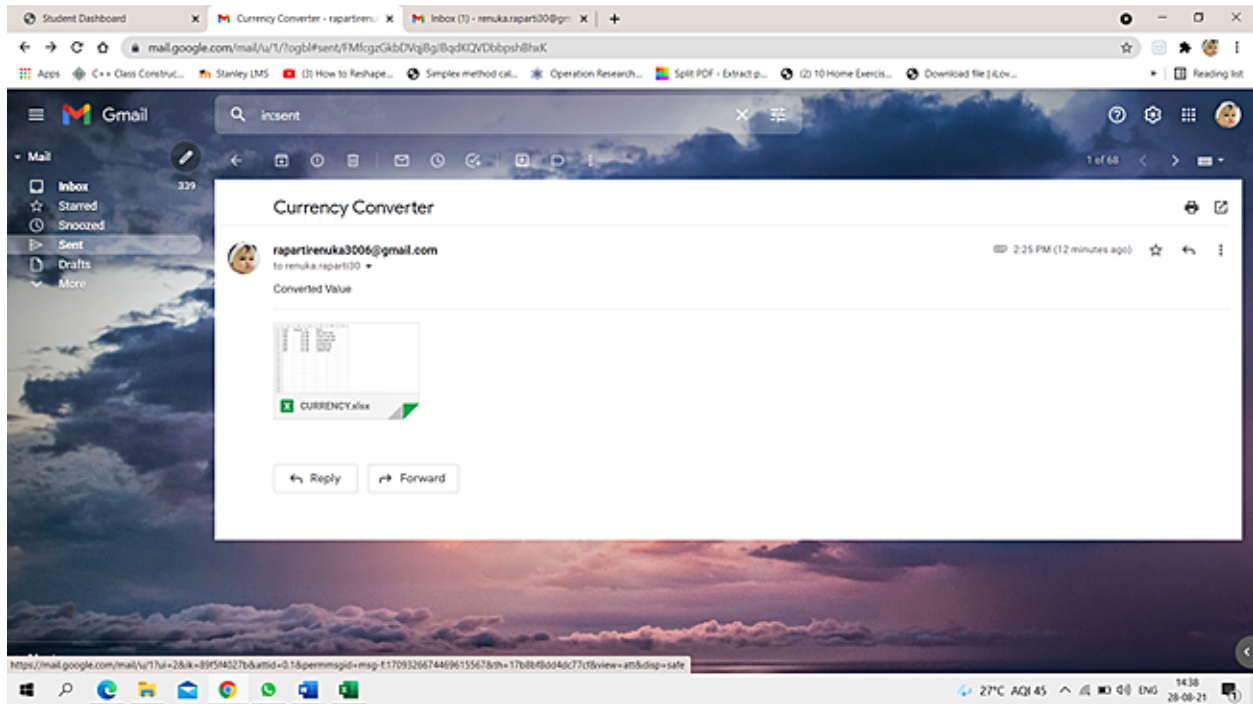
RECEIVER MAIL:
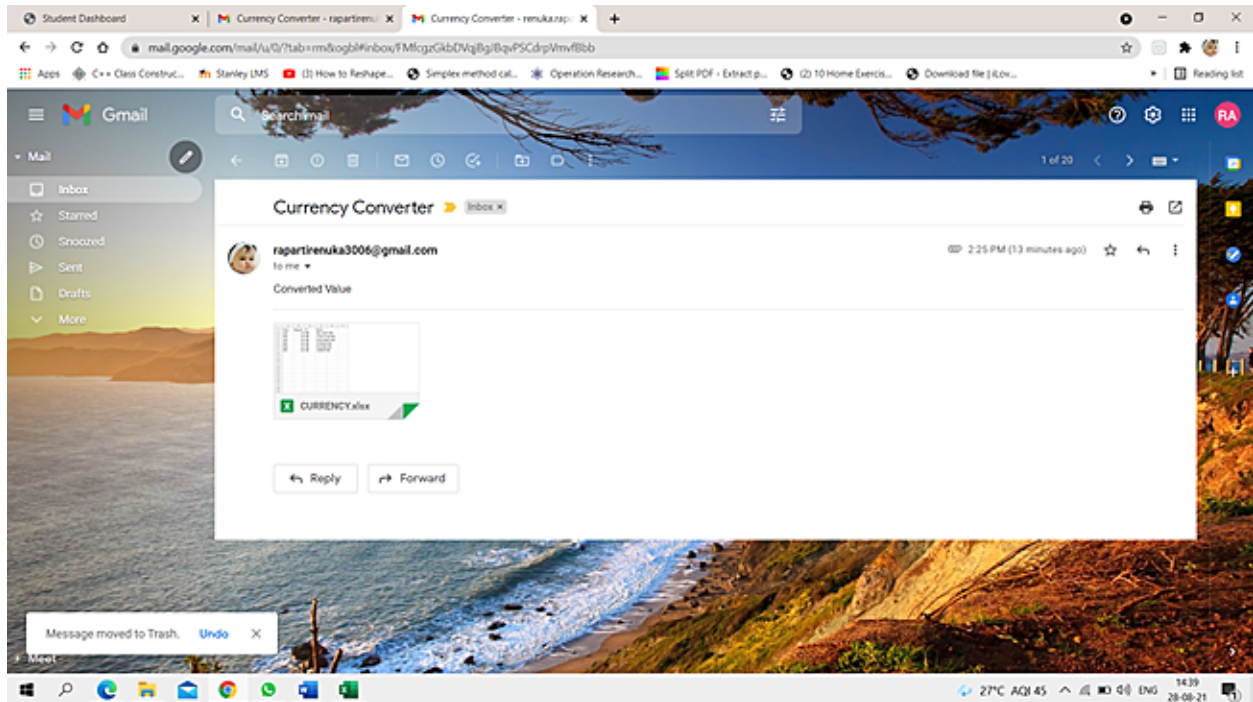
7.ADVANTAGES AND DISADVANTAGES:

Advantages of Web automation:

1. Web automation has the following advantages:

2. Web automation improves the coverage of testing as automated execution of test cases is faster than manual execution.

3. Web automation reduces the dependability of testing on the availability of the test engineers.

4. Web automation provides round the clock coverage as automated tests can be run all time in 24*7 environment.

5. Web automation takes far less resources in execution as compared to manual testing.

6. It helps to train the test engineers to increase their knowledge by producing a repository of different tests.

7. It helps in testing which is not possible without automation such as reliability testing, stress testing, load and performance testing.

8. It includes all other activities like selecting the right product build, generating the right test data and analysing the results.

9. It acts as test data generator and produces maximum test data to cover a large number of input and expected output for result comparison.

10. Web automation has less chances of error hence more reliable.

11. As with Web automation test engineers have free time and can focus on other creative tasks.

Disadvantages ofWeb automation:

1. Web automation has the following disadvantages:

2. Web automation is very much expensive than the manual testing.

3. It also becomes inconvenient and burdensome as to decide who would automate and who would train.

4. It has limited to some organisations as many organisations not prefer test automation.

5. Web automation would also require additionally trained and skilled people.

6. Web automation only removes the mechanical execution of testing process, but creation of test cases still required testing professionals.

8. APPLICATIONS:

➤ Filling long forms with multiple fields, scraping content from the web page.

➤ Extracting products Data from 100 pages automatically. Updating any entry on online forms from a web source and automating that is also a web automation.

➤ Reading Mails automatically, Deleting unwanted and unnecessary mails.

➤ No manual work due to which typing or calculation errors can be minimized.

➤ Data from one sheet is copied into another automatically.

➤ This product can be used for several times.

➤ Organized information.

➤ Arithmetic Calculations are done automatically.

9. CONCLUSION:

By far, we are all aware of the popularity of Agile Methodology for software development. Web automation brings true relevance to the term 'agile' by hastening your iterations or sprints.

Cloud Computing Software is vastly dependent on automated testing tools. The reason being that the resources shared on cloud are supposed to be accessible by anytime, anywhere and by anybody with an internet facility. So testing whether your software is working as intended all day & everywhere could not only be very tedious and faulty if done manually. But it could also be highly time-consuming.

Regression testing is made considerably effortless with the help of automated scripts.

The tools used for automation ensures a 100% code coverage. This makes sure that the website stays robust in terms of functionality.

10. FUTURE SCOPE:

When we consider Software Testing, Manual Testing has always been the only choice. Check out some of the widely used Benefits of Automation Testing to take full mileage of options. Manual Testing was critical with huge labor and cost-intensive. Automation testing provides a reliable testing method for big Software Development Companies. Automation tools improve the testing process by lending a consistent hand. It improves in verifying huge databases, web services, and UI according to the application requirements. Software Testers and Developers were now on the lookout for a testing method. The testing method that could provide the same throughput as Manual Testing, but with minimal labor and cost. In addition to this, they also wanted to reduce the repetitive tasks of Manual Testing.

The scope of automation or automation testing future scope is huge in the market. This was the time when Automation works towards the technical world. It had 2 primary goals, to be a reliable Software Testing Method and meet the requirements in less time, cost, and labor.

11. BIBLIOGRAPHY:

References:

➤ https://www.blueprism.com/

➤ https://community.blueprism.com/communities/community-home/digestviewer/viewthread?MessageKey=b5e4eef9-78f9-4cab-b32a-a506c98961c5&CommunityKey=3b501789-976c-4cfa-b9db-88307c6a0a86&tab=digestviewer

➤ https://www.browserstack.com/guide/web-automation

➤ https://webautomation.io/

➤ https://www.leapwork.com/web-automation

➤ https://automationacademy.com/en/blog/automating-web-applications-and-websites

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