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EVALUATION OF INTERNSHIP REPORT

B.Tech: III Year

Department of Computer Science & Information Technology

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Branch and Section	:	**CSIT-2**
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Year	:	**2022-2023**

**Department of Computer Science & Information Technology
AITR, Indore,**

ACROPOLIS INSTITUTE OF TECHNOLOGY & RESEARCH, INDORE

Department of Computer Science & Information Technology

<u>Certificate</u>

Certified that training work entitled "*ROBOTICS PROCESS AUTOMATION*" is a bonafied work carried out after sixth semester by "NIKHILESH CHOUHAN" in partial fulfilment for the award of the degree of Bachelor of Technology in Computer Science and Information Technology from "*SIMARJEET SINGH BHATIA (Assistant professor)*" Acropolis Institute of Technology and Research during the academic year 2022-23.

Name and Sign of Training Coordinator   *Name & Sign of Internship Coordinator*

ACROPOLIS INSTITUTE OF TECHNOLOGY & RESEARCH, INDORE

Department of Computer Science & Information Technology

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INDEX

Introduction to technology Undertaken
(RPA)

What is RPA ?

Robotic process automation (RPA) is a software technology that makes it easy to build, deploy, and manage software robots that emulate humans actions interacting with digital systems and software. Just like people,

software robots can do things like understand what's on a screen, complete the right keystrokes, navigate

systems, identify and extract data, and perform a wide range of defined actions. But software robots can do it faster and more consistently than people, without the need to get up and stretch or take a coffee break.

Benefits of RPA

Robotic process automation streamlines workflows, which makes organizations more profitable, flexible, and responsive. It also increases employee satisfaction, engagement, and productivity by removing mundane tasks from their workdays.

RPA is noninvasive and can be rapidly implemented to accelerate digital transformation. And it's ideal for

automating workflows that involve legacy systems that lack APIs, virtual desktop infrastructures (VDIs), or database access.

RPA and Automation

In order for RPA tools in the marketplace to remain competitive, they will need to move beyond task automation and expand their offerings to include intelligent automation (IA). This type of automation expands on RPA functionality by incorporating sub-disciplines of artificial intelligence, like machine learning, natural language processing, and computer vision.

Intelligent process automation demands more than the simple rule-based systems of RPA. You can think of RPA as "doing" tasks, while AI and ML encompass more of the "thinking" and "learning," respectively. It trains algorithms using data so that the software can perform tasks in a quicker, more efficient way. As artificial intelligence becomes more commonplace within RPA tools, it will become increasingly difficult to differentiate between these two categories.

RPA and Artificial Intelligence

Robotic process automation is often mistaken for [artificial intelligence](#) (AI), but the two are distinctly different. AI combines cognitive automation, [machine learning](#) (ML), [natural language processing (NLP)](#), reasoning, hypothesis generation and analysis.

The critical difference is that RPA is process-driven, whereas AI is data-driven. RPA bots can only follow the processes defined by an end user, while AI bots use machine learning to recognize patterns in data, in particular unstructured data, and learn over time. Put differently, AI is intended to simulate human intelligence, while RPA is solely for replicating human-directed tasks. While the use of artificial intelligence and RPA tools minimize the need for human intervention, the way in which they automate processes is different.

That said, RPA and AI also complement each other well. AI can help RPA automate tasks more fully and handle more complex use cases. RPA also enables AI insights to be actioned on more quickly instead of waiting on

manual implementations.

How RPA works ?

According to Forrester, RPA software tools must include the following core capabilities:

1. Low-code capabilities to build automation scripts

2. Integration with enterprise applications
3. Orchestration and administration including configuration, monitoring and security

Automation technology, like RPA, can also access information through legacy systems, integrating well with other applications through front-end integrations. This allows the automation platform to behave similarly to a human worker, performing routine tasks, such as logging in and copying and pasting from one system to another. While back-end connections to databases and enterprise web services also assist in automation, RPA's real value is in its quick and simple front-end integrations.

Benefits of RPA

There are multiple benefits of RPA, including:

- **Less coding:** RPA does not necessarily require a developer to configure; drag-and-drop features in user interfaces make it easier to onboard non-technical staff.

- **Rapid cost savings:** Since RPA reduces the workload of teams, staff can be reallocated towards other priority work that does require human input, leading to increases in productivity and ROI.

- **Higher customer satisfaction**: Since bots and chatbots can work around the clock, they can reduce wait times for customers, leading to higher rates of customer satisfaction.

- **Improved employee morale:** By lifting repetitive, high-volume workload off your team, RPA allows people to focus on more thoughtful and strategic decision-making. This shift in work has a positive effect on employee happiness.

- **Better accuracy and compliance:** Since you can program RPA robots to follow specific workflows and rules, you can reduce human error, particularly around work which requires accuracy and compliance, like regulatory standards. RPA can also provide an audit trail, making it easy to monitor progress and resolve issues more quickly.

- **Existing systems remain in place:** Robotic process automation software does not cause any disruption to underlying systems because bots work on the presentation layer of existing applications. So, you can implement bots in situations where you don't have an application programming interface

    (API) or the resources to develop deep integrations

Challenges of RPA

While RPA software can help an enterprise grow, there are some obstacles, such as organizational culture, technical issues and scaling.

Organizational culture

While RPA will reduce the need for certain job roles, it will also drive growth in new roles to tackle more complex tasks, enabling employees to focus on higher-level strategy and creative problem-solving. Organizations will need to promote a culture of learning and innovation as responsibilities within job roles shift. The adaptability of a workforce will be important for successful outcomes in automation and digital transformation projects. By educating your staff and investing in training programs, you can prepare teams for ongoing shifts in priorities.

Difficulty in scaling

While RPA can perform multiple simultaneous operations, it can prove difficult to scale in an enterprise due to regulatory updates or internal changes. According to a Forrester report, 52% of customers claim they struggle with scaling their RPA program. A company must have 100 or more active working robots to qualify as an advanced program, but few RPA initiatives progress beyond the first 10 bots.

RPA use cases

There are several industries that leverage RPA technology to streamline their business operations. RPA implementations can be found across the following industries:

Banking and financial services: In the Forrester report "The RPA Services Market Will Grow To Reach USD 12 Billion By 2023," 36% of all use cases were in the [finance](#) and accounting space. More than one in three bots today are in the financial industry, which is of little surprise given banking's early adoption of automation. Today, many major banks use RPA automation solutions to automate tasks, such as customer research, account opening, inquiry processing, and anti-money laundering. A bank deploys thousands of bots to automate manual high-volume data entry. These processes entail a plethora of tedious, rule-based tasks that automation streamlines.

Supply chain: RPA has also been impactful within supply chain operations. By integrating information across shippers and operation managers, companies can better communicate to their customers when unscheduled events occur, like delivery changes or delays. By communicating ahead of time, businesses can improve overall customer satisfaction. [Delve deeper into our Inter Aduaneira case study, where they used RPA to improve their](#) [response times by 80%.](#)

Telecom: [Telecom](#) is another one of the industries using the most RPA as it experiences massive growth driven by the Internet of Things, 5G, and edge computing. As demand soars, RPA can help a telecom company streamline its apps and infrastructure and help them share data. Combined with AI processing, RPA can analyze network usage data to keep the user experience consistent and collect compliance data to keep up with regulatory Federal Communications Commission (FCC) mandates. RPA can also help providers automate customer recordkeeping, improve customer experiences, keep services affordable and uninterrupted, and monetize new 5G services.

Insurance: The [insurance](#) industry is full of repetitive processes well-suited for automation. For example, you can apply RPA to claims processing operations, regulatory compliance, and policy management. RPA can help generate faster quotes and policy documents at the "quote and bind" stage and the underwriting process. It can help standardize midterm adjustments by bringing data into a single source of truth and processing policy changes quicker. Agents work more efficiently with RPA tools, meaning the volume and length of customer calls are reduced, and customers are more satisfied. It also means being able to streamline renewal tasks, such as pricing and policy documentation, freeing employees to spend more time on customer retention.

Retail: The rise of e-commerce has made RPA an integral component of the modern [retail](#) industry by automating tasks that impact both customers and employees, such as collecting employee information for onboarding, scheduling, and payroll. RPA helps with managing inventory, warehouse and order management, supply chain operations, fraud detection, customer feedback processing, and returns processing. It can aggregate information from cash register reports. Retailers use RPA to automate pricing, analyze factors that impact sales such as geographic location, cultural and age preferences, aggregate information from registers, and send automated messages to suppliers and customers. Automating repetitive tasks not only improves customer support and the customer experience, but also frees employees to focus on more value-added and impactful actions.

Healthcare: Accuracy and compliance are paramount in the [healthcare](#) industry. Some of the world's largest hospitals use robotic process automation software to optimize information management, prescription management, insurance claim processing, and payment cycles, among other processes. Throughout the healthcare industry, RPA addresses process challenges such as billing and compliance, electronic health records, clinical documentation, patient scheduling, and more.

Objective

RPA can be used to automate tasks in any industry, reducing the burden of tedious, repetitive tasks on managers and employees, freeing them to focus on more rewarding tasks, leading to higher levels of job satisfaction.

1. Increased Productivity

Most RPA robots are designed to focus on performing specific routine tasks. Let's take an example. If a human employee takes four hours to report, RPA allows the same employee to finish the report in 20 minutes.

2. Increased Efficiency

Next on our list of business benefits of Robotic Process Automation is efficiency. Human efficiency is limited because they can dedicate only x number of hours in a day. The variable x here depends on individual capacity.

3. Enhanced Accuracy

It's only human to make mistakes. However, even mirror mistakes may cost you a lot when you have a business to run. Not to mention the time it takes to rectify those mistakes manually. The good news is that by implementing RPA in business, you can eliminate processing errors.

4. Increased Security

As mentioned earlier, RPA bots are designed to perform specific tasks. Because of this very fact, we have one more advantage of incorporating RPA in business – security. Since Robotic Process Automation operates on a granular level, there is no risk of data leaking from one facet to another.

5. Boost in Scalability Opportunities

When your business expands, so do your responsibilities. Entrepreneurs often find themselves at crossroads when they finally want to take their business to the next level. Their business often lacks the flexibility to adjust to the increasing number of tasks or functions.

Project undertaken

(Coding Question Scraping)

Introduction

Coding Question Scraping is a RPA base bot that extract data from Coding website(Leetcode). It ask to user enter the number of question he want. Then bot go to www.leetcode.com and go to Problem section. and start scraping the question related information like name and difficulty and stored the information in a excel sheet.

Working

Step 1:

 Bot will ask to enter the number of question to be searched.

Step 2:

Bot will go to www.leetcode.com .

Step 3:
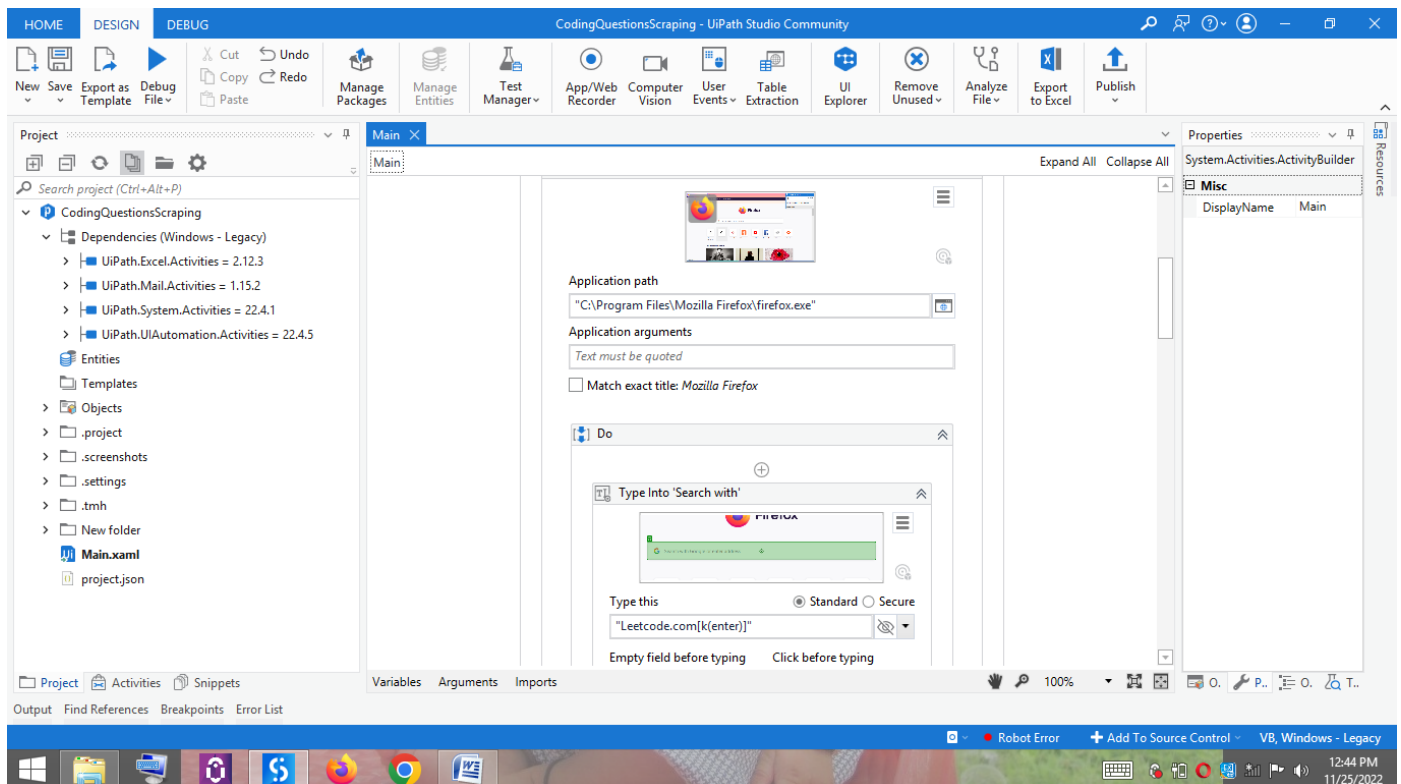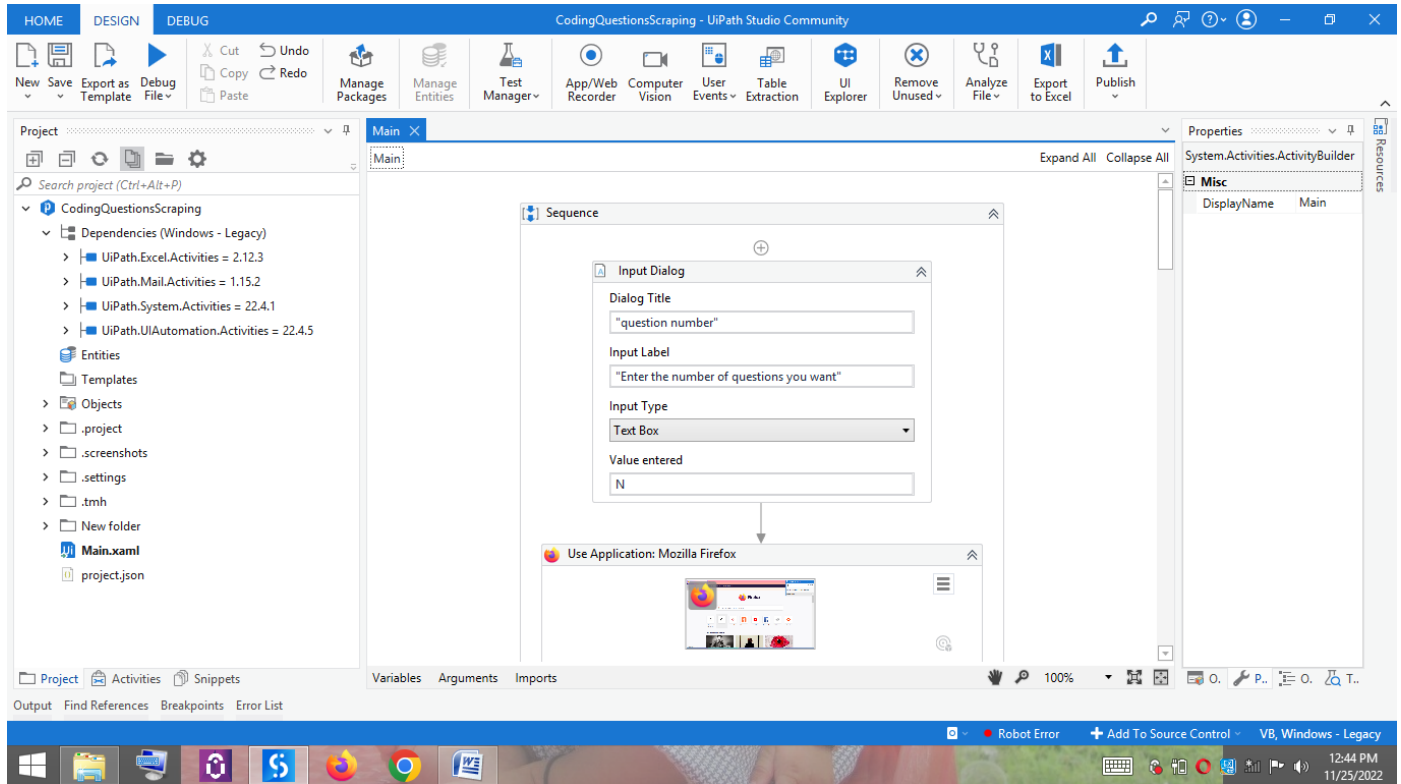
In leetcode website bot will go to problem section.
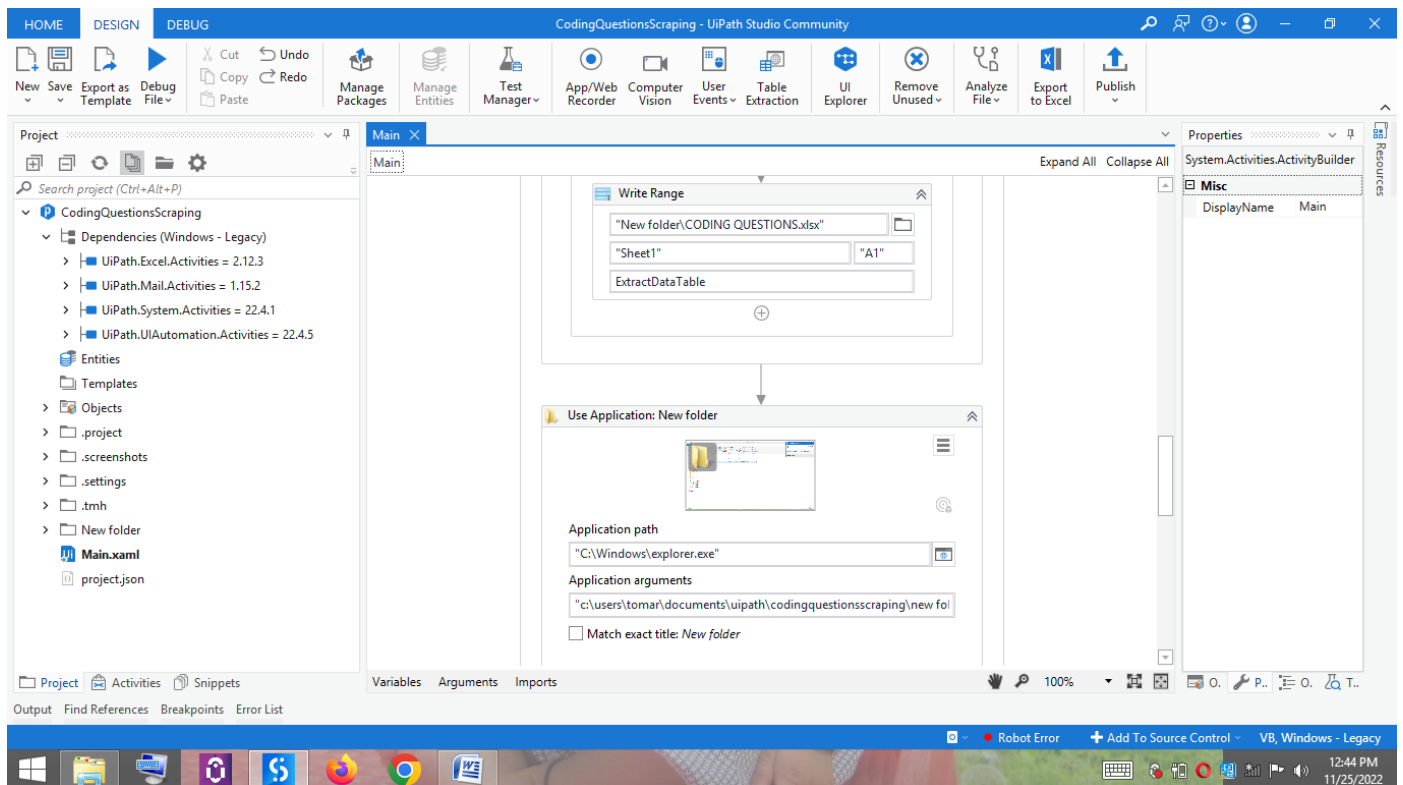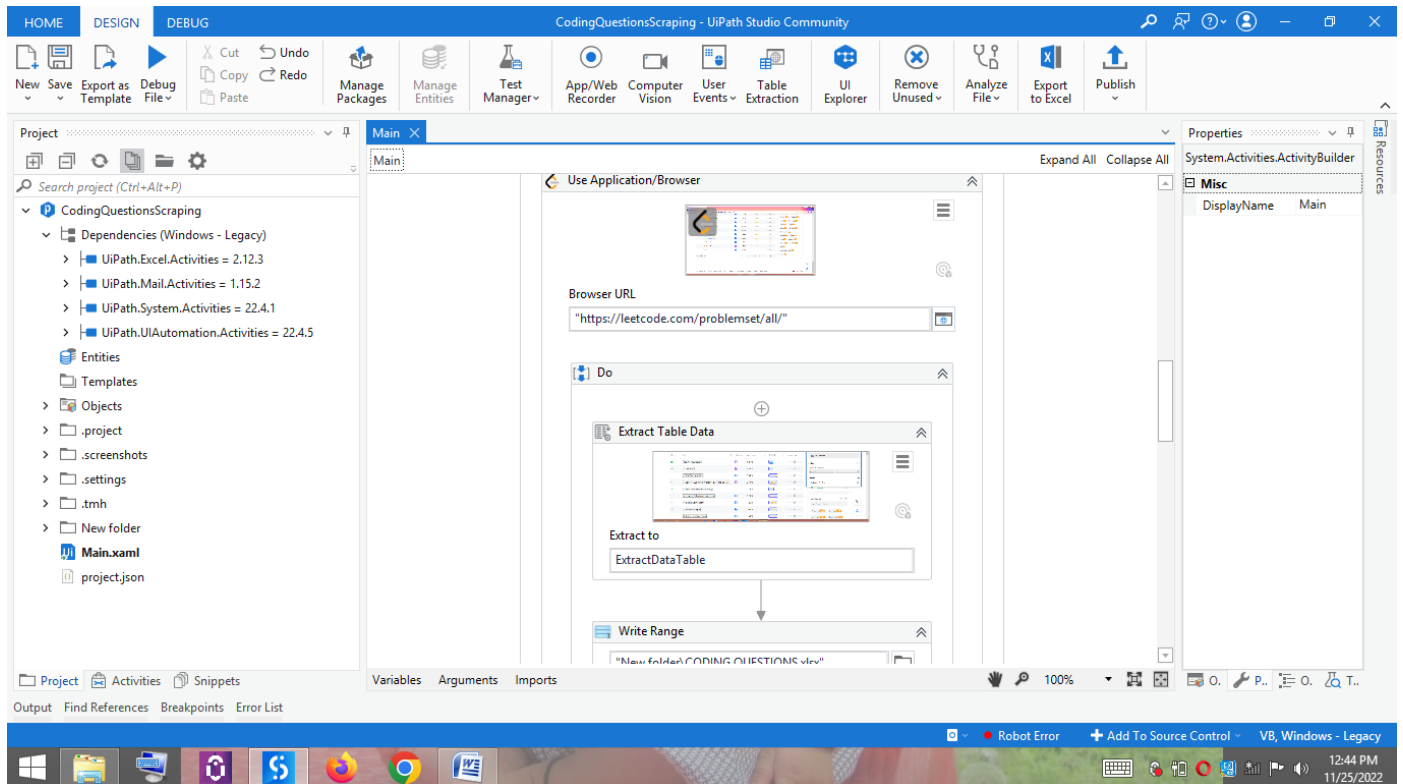
Step 4:

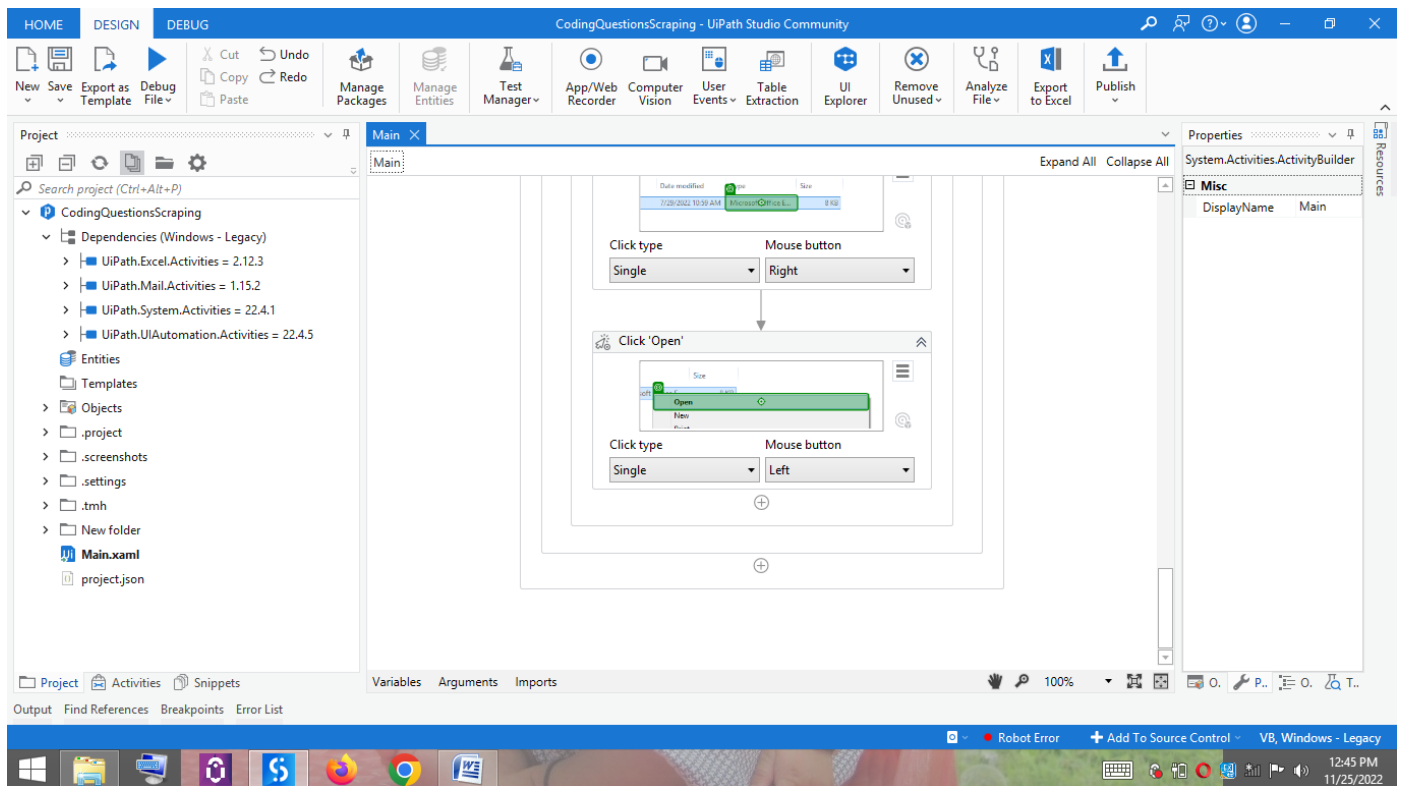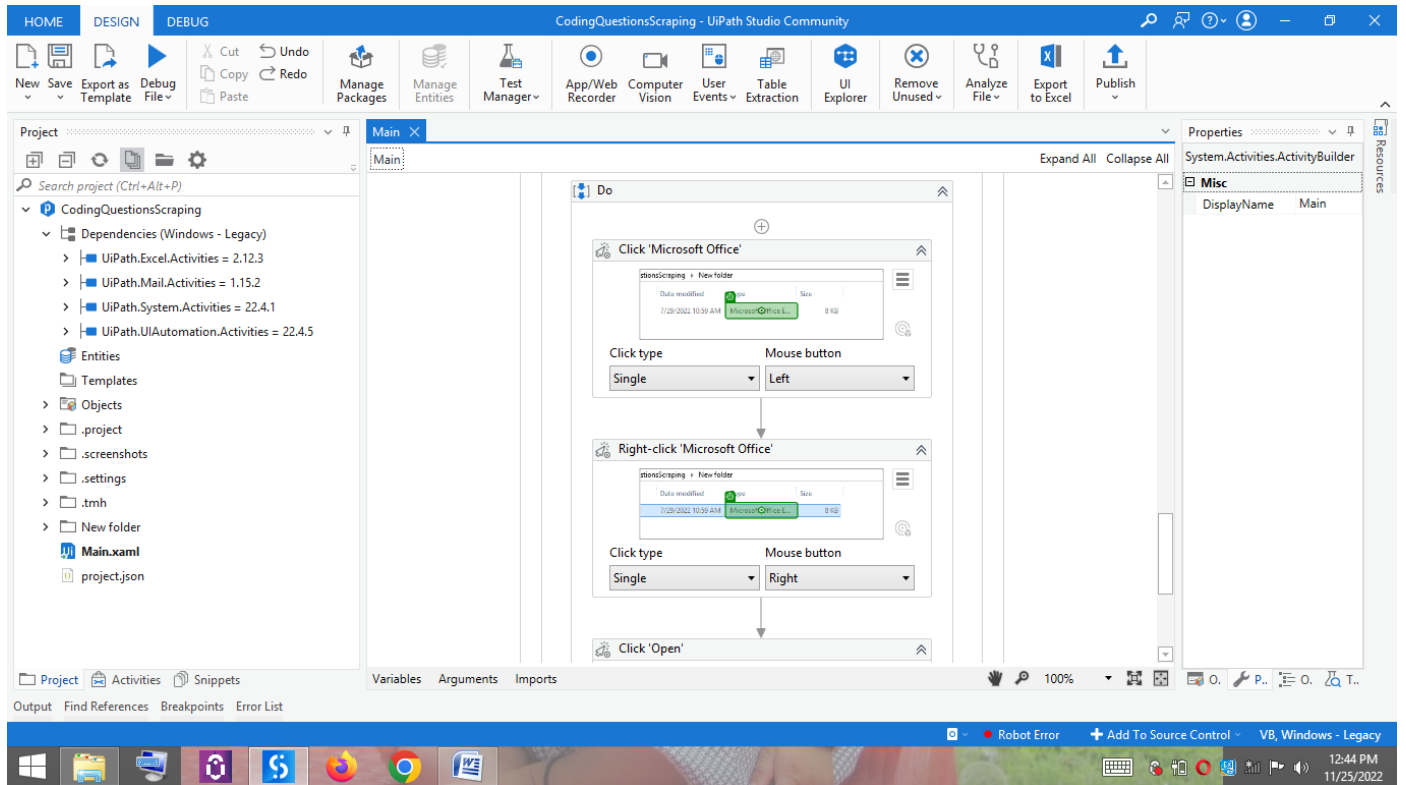Bot will extract the questions related information like name and difficulty.

Step 5:

Information is extracted from Leetcode and stored in a excel sheet.

Screenshorts of Project

Problems - LeetCode

https://leetcode.com/problemset/all/

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LeetCode's Interview Crash Course:
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Register

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Saturday, Nov 26
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Day 25 16:13:07 left

S	M	T	W	T	F	S
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6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Weekly Premium ⓘ   3 days left

W1 W2 W3 W4 W5

Array 1240   String 582   Hash Table 429   Dynamic Programming 405   Math 387   Sorting 276   Greedy 269   Expand ⌄

All Topics   Algorithms   Database   Shell   Concurrency

Lists ⌄   Difficulty ⌄   Status ⌄   Tags ⌄   Search questions   Pick One

https://leetcode.com/study-plan/dynamic-programming/

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11/25/2022

CODING QUESTIONS - Microsoft Excel

Home   Insert   Page Layout   Formulas   Data   Review   View   Developer

A1   907. Sum of Subarray Minimums

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
20	19. Remove Nth Node From End of List	Medium															
21	20. Valid Parentheses	Easy															
22	21. Merge Two Sorted Lists	Easy															
23	22. Generate Parentheses	Medium															
24	23. Merge k Sorted Lists	Hard															
25	24. Swap Nodes in Pairs	Medium															
26	25. Reverse Nodes in k-Group	Hard															
27	26. Remove Duplicates from Sorted Array	Easy															
28	27. Remove Element	Easy															
29	28. Find the Index of the First Occurrence in a Strir	Medium															
30	29. Divide Two Integers	Medium															
31	30. Substring with Concatenation of All Words	Hard															
32	31. Next Permutation	Medium															
33	32. Longest Valid Parentheses	Hard															
34	33. Search in Rotated Sorted Array	Medium															
35	34. Find First and Last Position of Element in Sorte	Medium															
36	35. Search Insert Position	Easy															
37	36. Valid Sudoku	Medium															
38	37. Sudoku Solver	Hard															
39	38. Count and Say	Medium															
40	39. Combination Sum	Medium															
41	40. Combination Sum II	Medium															
42	41. First Missing Positive	Hard															
43	42. Trapping Rain Water	Hard															
44	43. Multiply Strings	Medium															
45	44. Wildcard Matching	Hard															
46	45. Jump Game II	Medium															
47	46. Permutations	Medium															
48																	
49																	

Sheet1   Sheet2   Sheet3

Ready   100%

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11/25/2022

Certificate

UiPath

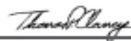# Diploma of Completion

Proudly presented to:

NIKHILESH CHOUHAN

For successfully completing the course:

Meet the UiPath Platform

Date of issue

Thomas P. Clancy
Thomas P. Clancy
Chief Learning Officer

UiPath

Diploma of Completion

Proudly presented to:

NIKHILESH CHOUHAN

For successfully completing the course:

Build Your First Process With Studio

Date of issue

UiPath Academy

Github link : https://github.com/Nikhilesh1119/Evaluation-of-Internship

Conclusion

RPA has the ability to both minimize errors and improve efficiency, and, moving forward, will be critical for creating a seamless operational environment. Repetitive work will be accomplished more quickly and efficiently, so humans can be free to focus on more human-centric strengths such as reasoning, judgment, and emotional intelligence.

References

https://docs.uipath.com

https://forum.uipath.com

https://academy.uipath.com

www.youtube.com