JOB QUALIFICATION AUTOMATION

A PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this project report **"JOB QUALIFICATION AUTOMATION"** is the bonafide work of **"RISHIKESH T (220701226)"** who carried out the project work for the subject

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ABSTRACT

In today’s competitive job market, automating candidate evaluation processes has become essential for improving efficiency and accuracy in recruitment workflows. This project presents a Job Qualification Automation System designed and implemented using UiPath Studio to streamline the evaluation of job applicants based on predefined criteria such as experience, skills, and education. The automation begins by reading candidate details from an Excel sheet and processing the data using UiPath's powerful DataTable operations. For each candidate, the system verifies qualifications against the job requirements, marking them as either "Qualified" or "Not Qualified" based on specific conditions. The results are dynamically updated in the candidate data sheet, ensuring transparency and traceability. Additionally, qualified candidates are notified via email, leveraging the Send SMTP Mail Message activity. Emails are customized to include personalized messages, enhancing communication and ensuring professionalism. The project incorporates error handling mechanisms to manage invalid or missing data, ensuring robustness and scalability for real-world applications.

This solution significantly reduces manual effort in recruitment, eliminates human errors, and accelerates the selection process, making it an invaluable tool for HR departments and recruitment agencies. The system is highly adaptable and can be customized to suit various industries and job roles.

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Initially we thank the Almighty for being with us through every walk of our life and showering his blessings through the endeavour to put forth this report.

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LIST OF ABBREVIATIONS

ABBREVIATION	ACCRONYM
RPA	Robotic Process Automation
AI	Artificial Intelligence
API	Application Programming Interface
CV	Computer Vision
OCR	Optical Character Recognition

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Recruitment processes are critical for organizations aiming to identify the most suitable candidates for job roles. However, traditional methods of evaluating candidates based on their qualifications, experience, and skills are often time-consuming and prone to human error. In the era of automation, leveraging tools like UiPath to streamline such processes can significantly enhance efficiency and accuracy.

This project focuses on building a Job Qualification Automation System using UiPath Studio to automate the evaluation of job applicants. The system retrieves candidate data from an Excel sheet, compares it with predefined job criteria, and determines their qualification status. Qualified candidates are automatically notified via personalized email communication.

The system incorporates UiPath's capabilities for data processing, logicbased decision-making, and integration with email services. By automating tasks such as data validation, qualification assessment, and email notifications, this project eliminates the need for manual intervention and ensures a seamless, error-free recruitment process. The solution is highly scalable, adaptable, and applicable across various industries, making it a valuable asset for HR teams and recruitment agencies.

This document outlines the implementation process, technical components, and benefits of the automation, highlighting how it addresses challenges in traditional recruitment workflows while fostering efficiency and professionalism.

1.2 OBJECTIVE

The objective of this project is to develop an automated system using UiPath Studio to streamline candidate evaluation and communication in recruitment workflows. The system efficiently assesses applicants by comparing their qualifications, experience, and skills against predefined job requirements, eliminating repetitive and time-consuming manual tasks. It aims to enhance accuracy by minimizing human errors through rule-based automation while ensuring seamless communication by automatically notifying qualified candidates with personalized email messages. Additionally, the solution is designed to handle large datasets, adapt to varying job criteria, and maintain data integrity by dynamically updating and managing candidate records in Excel sheets. This project ultimately simplifies the hiring process, improves efficiency, and delivers reliable and scalable results for recruitment teams.

1.3 EXISTING SYSTEM

The existing recruitment system typically relies on manual processes for evaluating candidate qualifications, which involve significant time and effort from HR personnel. Candidate information, such as experience, skills, and education, is often reviewed manually against job requirements, leading to inefficiencies and a higher likelihood of human error. Communication with applicants, including notifying shortlisted candidates, is usually handled individually, which can delay the recruitment timeline and reduce consistency. Furthermore, managing and updating candidate records manually in spreadsheets or databases can result in data inaccuracies and redundancy. The lack of automation in the existing system not only slows down the hiring process but also limits scalability, making it difficult to handle large volumes of applications effectively. This underscores the need for a streamlined,

automated solution to improve efficiency, accuracy, and communication in the recruitment process.

1.4 PROPOSED SYSTEM

The proposed **Job Qualification Automation System** using UiPath leverages its RPA capabilities to streamline candidate evaluation by automating the extraction and processing of job applications. The system uses UiPath's Document Understanding to parse resumes, extracting key data such as skills, education, and experience. This data is matched against job requirements using custom workflows that rank candidates based on predefined criteria. Integrations with ATS (Applicant Tracking Systems) ensure seamless data retrieval and updates, while UiPath's AI capabilities enhance accuracy in matching and decision-making. The system generates ranked candidate reports, enabling HR teams to focus on interviewing top matches, reducing manual workload, and improving recruitment efficiency.

CHAPTER 2

LITERATURE REVIEW

2.1 Survey on Robotic Process Automation (RPA) in Education:

Robotic Process Automation (RPA) has emerged as a transformative technology across industries, including education. In the context of educational institutions and career placement services, RPA can streamline administrative processes, such as evaluating job qualifications. This survey explores how RPA, specifically in job qualification automation, can enhance recruitment and placement efficiency for students and graduates.

[1] Assess awareness and adoption of RPA tools in educational institutions for job qualification processes.
[2] Identify challenges in manual job qualification workflows.
[3] Evaluate the effectiveness of automation in improving accuracy, speed, and scalability.
[4] Gather opinions on integrating RPA into career services.

[5] The job qualification process in education involves matching students' skills and qualifications with industry requirements. Current manual processes are time-consuming and prone to errors. With RPA:
[6] Resume Processing: Automated parsing and categorization of resumes based on predefined criteria.
[7] Job Matching: Efficient alignment of student profiles with available job openings.
[8] Reporting: Instant generation of ranked candidate lists for recruiters.

2.2 Survey on AI-Generated Content Detection:

As artificial intelligence (AI) continues to transform recruitment processes, the role of AI-generated content has become increasingly significant. From resumes enhanced by generative AI to cover letters written by tools like ChatGPT, recruiters and job qualification systems must now identify and evaluate AI-generated content effectively. This survey explores the implications, challenges, and potential solutions for detecting AI-generated content in job qualification automation.

The survey aims to:
Assess awareness and concerns about AI-generated content in job applications.Understand the challenges in detecting and verifying AI-generated resumes or cover letters.Explore the role of AI-based detection tools in

enhancing job qualification automation systems.Gauge perceptions of fairness and ethical considerations in detecting AI-generated content.

The integration of AI tools in job qualification automation has revolutionized recruitment, but it also raises concerns about authenticity and fairness. Candidates increasingly use generative AI to optimize their applications, which can:

Skew Evaluations: Automated systems may prioritize AI-enhanced resumes over genuinely crafted ones.

Raise Authenticity Questions: Employers may struggle to determine whether the application reflects a candidate's true abilities.

Challenge Automation Systems: Traditional RPA or automation tools may lack the ability to distinguish between AI-generated and human-authored content.

Detection mechanisms, powered by advanced AI algorithms, can ensure fair evaluations by flagging and analyzing AI-generated content.

2.3 Survey on Plagiarism Detection:

The existing recruitment processes often lack automation, relying heavily on manual tasks to evaluate candidate qualifications and communicate with applicants. HR personnel are required to manually compare candidate details, such as experience, skills, and education, against job requirements, which is both time-consuming and prone to human error. Communicating the results, especially notifying qualified candidates, is handled individually, leading to inefficiencies and delays. Additionally, manual data management in spreadsheets increases the risk of errors and duplication, making it challenging to maintain accurate and updated records. The absence of automation in these workflows hampers scalability and limits the ability to process large volumes of applications efficiently. Addressing these gaps, automation systems like the Job Qualification Automation Project aim to streamline candidate evaluation,

improve data accuracy, and enhance communication, creating a more efficient and error-free recruitment process. This shift toward automation not only improves the overall quality of hiring workflows but also underscores the importance of embracing technology in modern recruitment strategies.

2.4 Summary of the intersection of RPA, AI Detection, and Plagiarism Checks:

The integration of Robotic Process Automation (RPA), AI-based detection, and plagiarism checks can significantly enhance the efficiency and accuracy of job qualification processes. In the context of the Job Qualification Automation project, RPA serves as the backbone for automating repetitive tasks such as extracting candidate details, comparing qualifications with job criteria, and sending personalized emails to qualified candidates. By incorporating AI detection, the system can be further enhanced to identify patterns in candidate data, verify skill authenticity, and even analyze resumes for discrepancies, such as inflated experience or mismatched skills.

Plagiarism checks play a crucial role in ensuring the originality of candidate submissions, such as resumes, cover letters, or skill demonstrations. By integrating AI-powered plagiarism detection tools within the RPA workflow, the system can verify the authenticity of documents provided by candidates, flagging any instances of copied content or misrepresentation. This intersection creates a comprehensive recruitment system that not only evaluates candidates efficiently but also ensures the credibility of their submissions, reducing the risk of fraudulent applications. The synergy between RPA, AI detection, and plagiarism checks ultimately improves decision-making, reduces manual intervention, and establishes a reliable, scalable, and trustworthy recruitment process

CHAPTER 3

SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

A flowchart is a type of diagram that represents an algorithm, workflow or process. The flowchart shows the steps as boxes of various kinds, and their order by connecting the boxes with arrows. This diagrammatic representation illustrates a solution model to a given problem. The system flow diagram for this project is in Fig. 3.1.

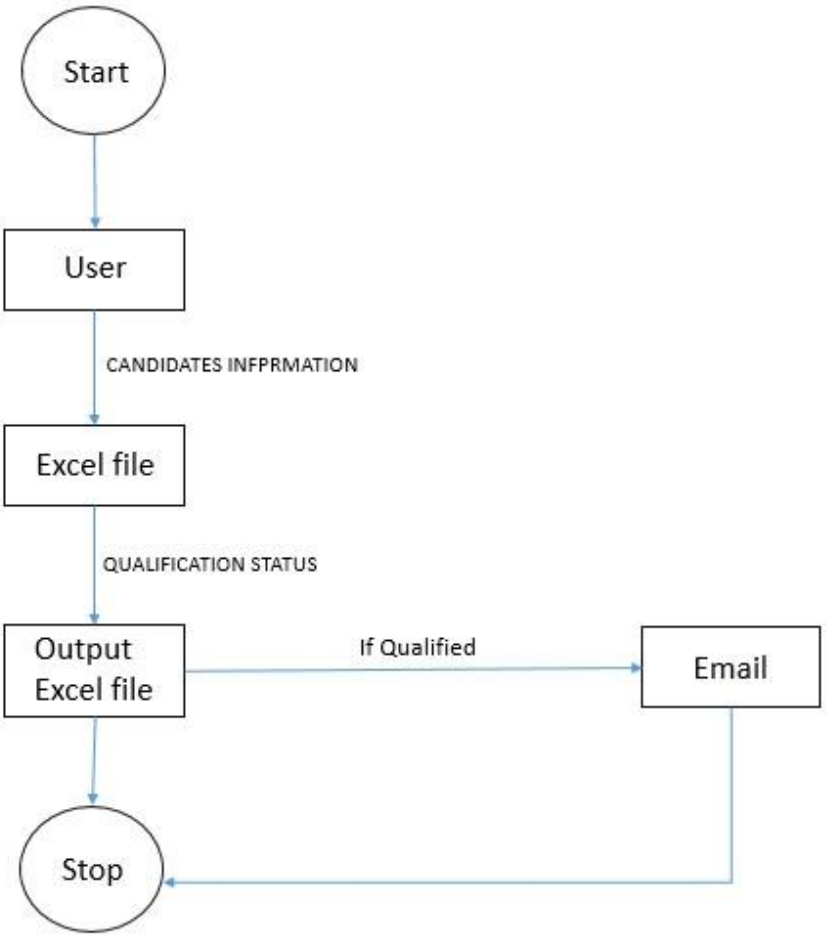


Fig 3.1 System Flow Diagram

3.2 ARCHITECTURE DIAGRAM

An architecture diagram is a graphical representation of a set of concepts, that are part of an architecture, including their principles, elements and components. The architecture diagram for this project is in Fig. 3.2.

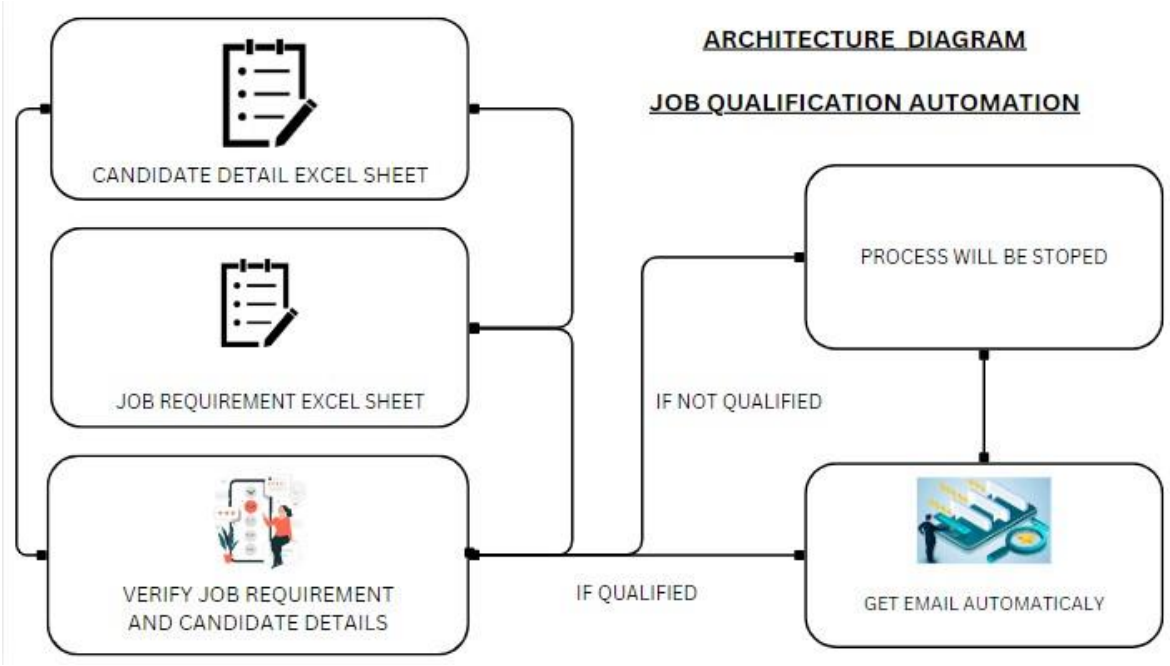


Fig 3.2 Architecture Diagram

CHAPTER 4

PROJECT DESCRIPTION

"The Smart Assignment Integrity Verification Bot" is a sophisticated Robotic Process Automation (RPA) project designed to address the challenges of AIgenerated content and plagiarism in student assignments. Developed using UiPath, this intelligent bot streamlines the assignment assessment process, providing educators with an efficient tool to maintain academic integrity.

4.1. MODULES:

4.1.1. INPUT HANDLING AND INITIALIZATION:

4.1.1.1. Folder Selection:

- Receive user input for the parent folder path.

4.1.1.2. Subfolder Selection:

- List subfolders within the parent folder.
- Allow the user to select the target subfolder.

4.1.1.3 Excel Report Generation:

- Dynamically create an Excel report named "Report" within the chosen subfolder.

4.1.2 CONTENT ANALYSIS:

4.1.2.1 AI Detection:

- Iterate through each Word document in the selected subfolder.
- Employ advanced algorithms to detect AI-generated content.

4.1.2.2 Plagiarism Check:

- Interface with external plagiarism detection services.
- Conduct plagiarism checks on the assignment content.

4.1.3 RESULT MANAGEMENT:

4.1.3.1 Result Storage:

- Systematically update the Excel report with assessment results.

4.1.3.2 Real-time Update:

- Display real-time updates of the integrity verification process.

4.1.4 COMPLETION AND REPORTING:

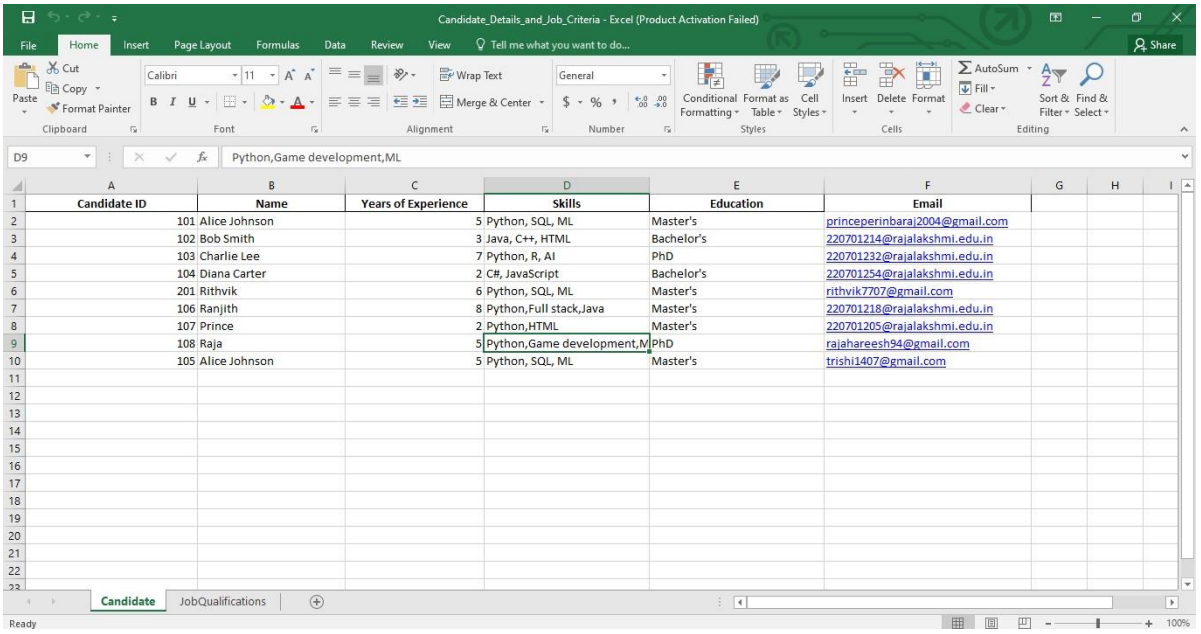
4.1.4.1 Completion Message:

- Conclude the operation with a message indicating the successful completion of the integrity verification task.

CHAPTER 5

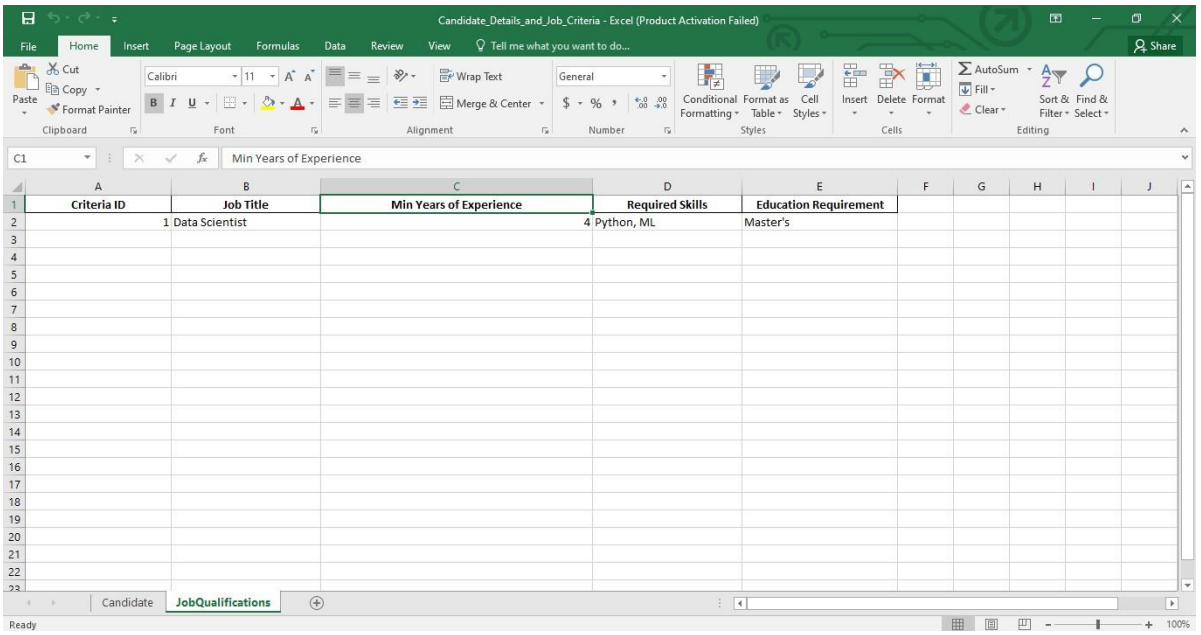
OUTPUT SCREENSHOTS

Candidate details Excel File Creation



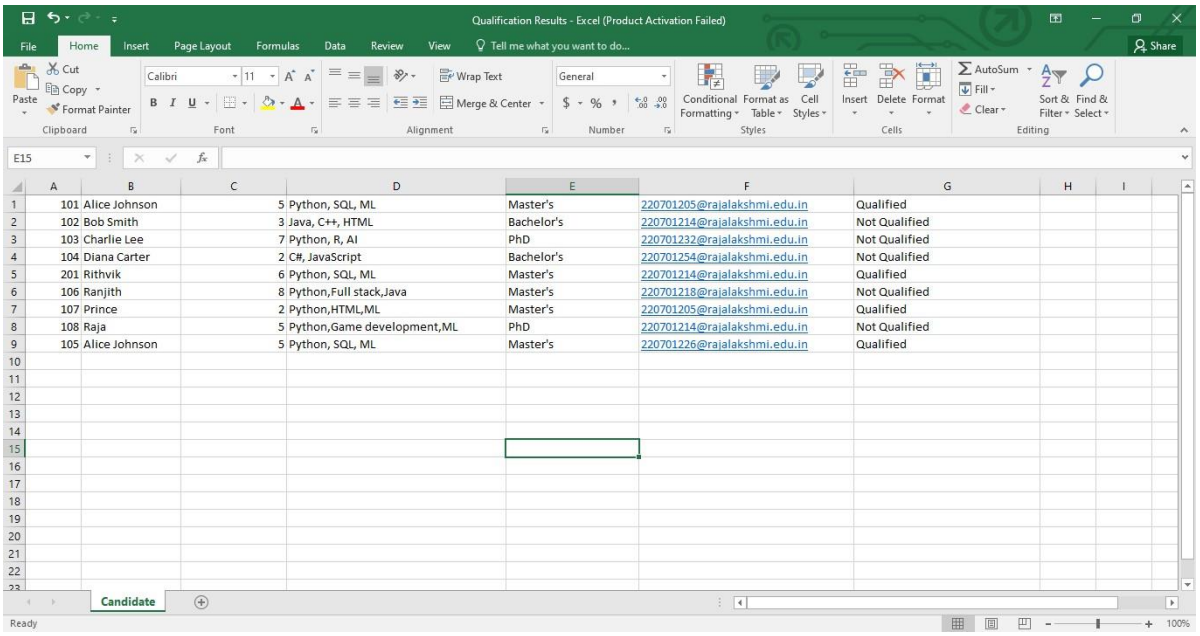
Candidate ID	Name	Years of Experience	Skills	Education	Email
101	Alice Johnson	5	Python, SQL, ML	Master's	princeperinbaraj2004@gmail.com
102	Bob Smith	3	Java, C++, HTML	Bachelor's	220701214@rajalakshmi.edu.in
103	Charlie Lee	7	Python, R, AI	PhD	220701232@rajalakshmi.edu.in
104	Diana Carter	2	C#, JavaScript	Bachelor's	220701254@rajalakshmi.edu.in
201	Rithvik	6	Python, SQL, ML	Master's	rithvik7707@gmail.com
106	Ranjith	8	Python,Full stack,Java	Master's	220701218@rajalakshmi.edu.in
107	Prince	2	Python,HTML	Master's	220701205@rajalakshmi.edu.in
108	Raja	5	Python,Game development,M	PhD	rajahareesh94@gmail.com
105	Alice Johnson	5	Python, SQL, ML	Master's	trishi1407@gmail.com

Job Qualification Details Excel File



Criteria ID	Job Title	Min Years of Experience	Required Skills	Education Requirement
1	Data Scientist	4	Python, ML	Master's

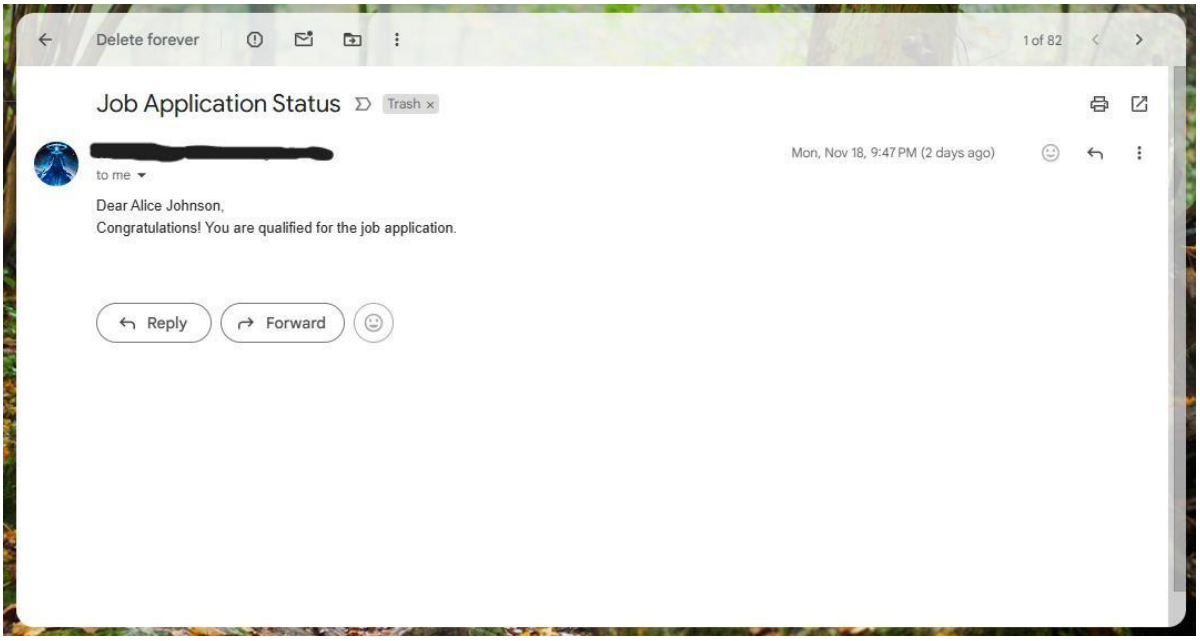
Qualification Status Details Excel File



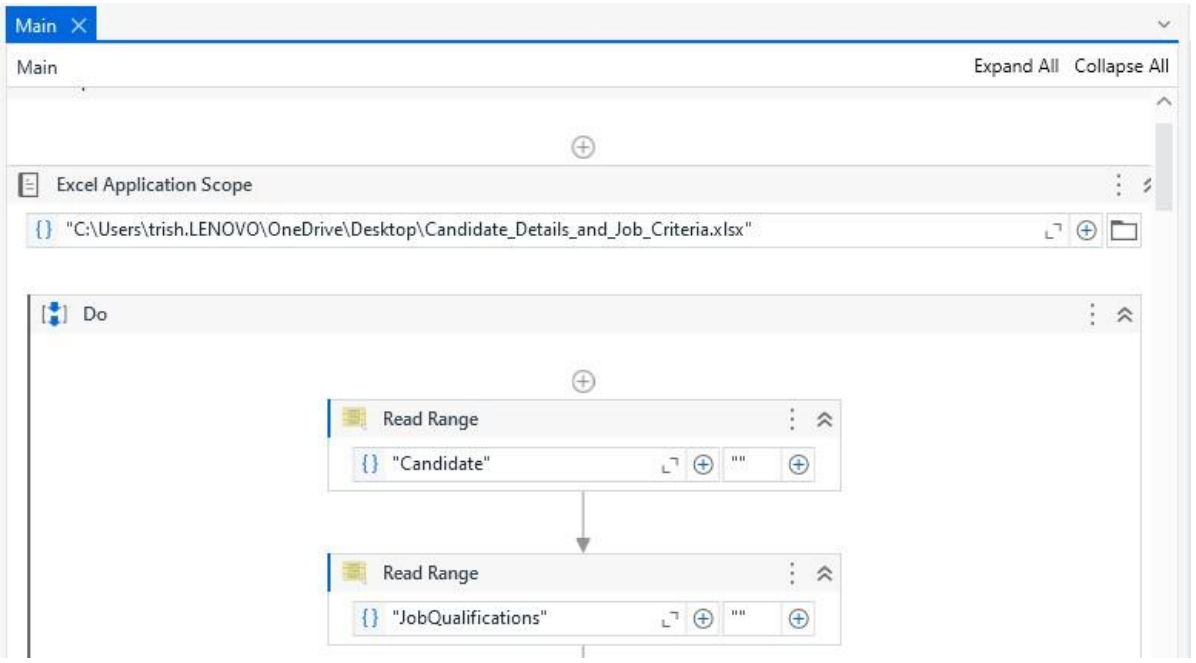
Qualification Results - Excel (Product Activation Failed)

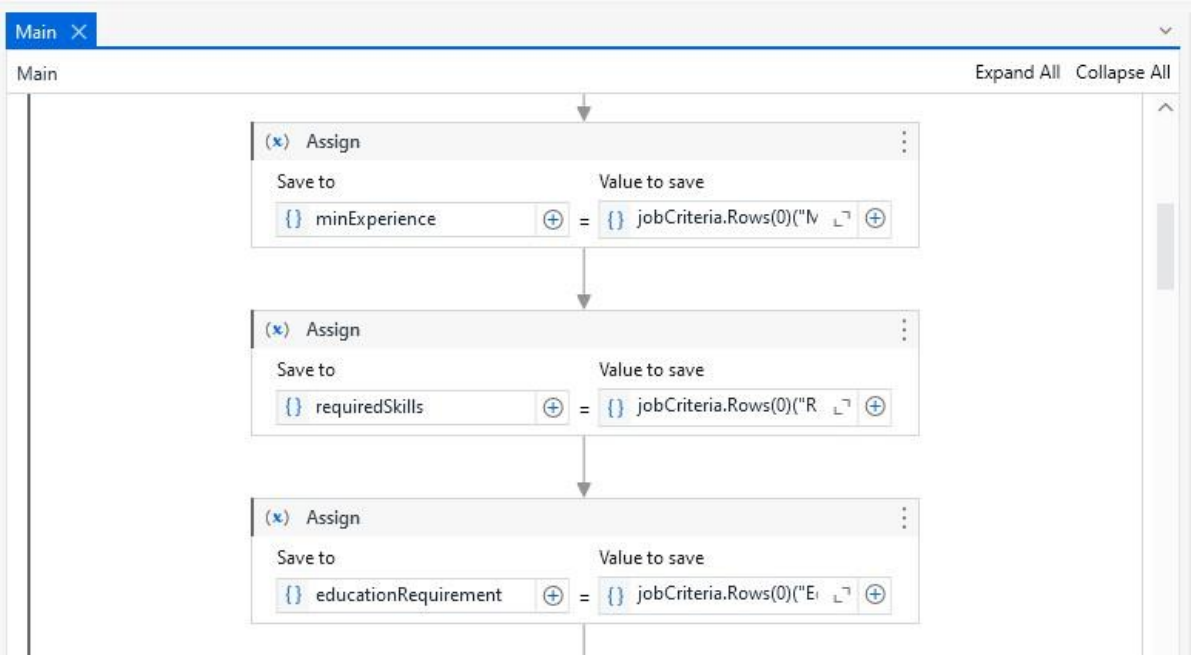
	A	B	C	D	E	F	G	H	I
1	101	Alice Johnson	5	Python, SQL, ML	Master's	220701205@rajalakshmi.edu.in	Qualified		
2	102	Bob Smith	3	Java, C++, HTML	Bachelor's	220701214@rajalakshmi.edu.in	Not Qualified		
3	103	Charlie Lee	7	Python, R, AI	PhD	220701232@rajalakshmi.edu.in	Not Qualified		
4	104	Diana Carter	2	C#, JavaScript	Bachelor's	220701254@rajalakshmi.edu.in	Not Qualified		
5	201	Rithvik	6	Python, SQL, ML	Master's	220701214@rajalakshmi.edu.in	Qualified		
6	106	Ranjith	8	Python,Full stack,Java	Master's	220701218@rajalakshmi.edu.in	Not Qualified		
7	107	Prince	2	Python,HTML,ML	Master's	220701205@rajalakshmi.edu.in	Qualified		
8	108	Raja	5	Python,Game development,ML	PhD	220701214@rajalakshmi.edu.in	Not Qualified		
9	105	Alice Johnson	5	Python, SQL, ML	Master's	220701226@rajalakshmi.edu.in	Qualified		

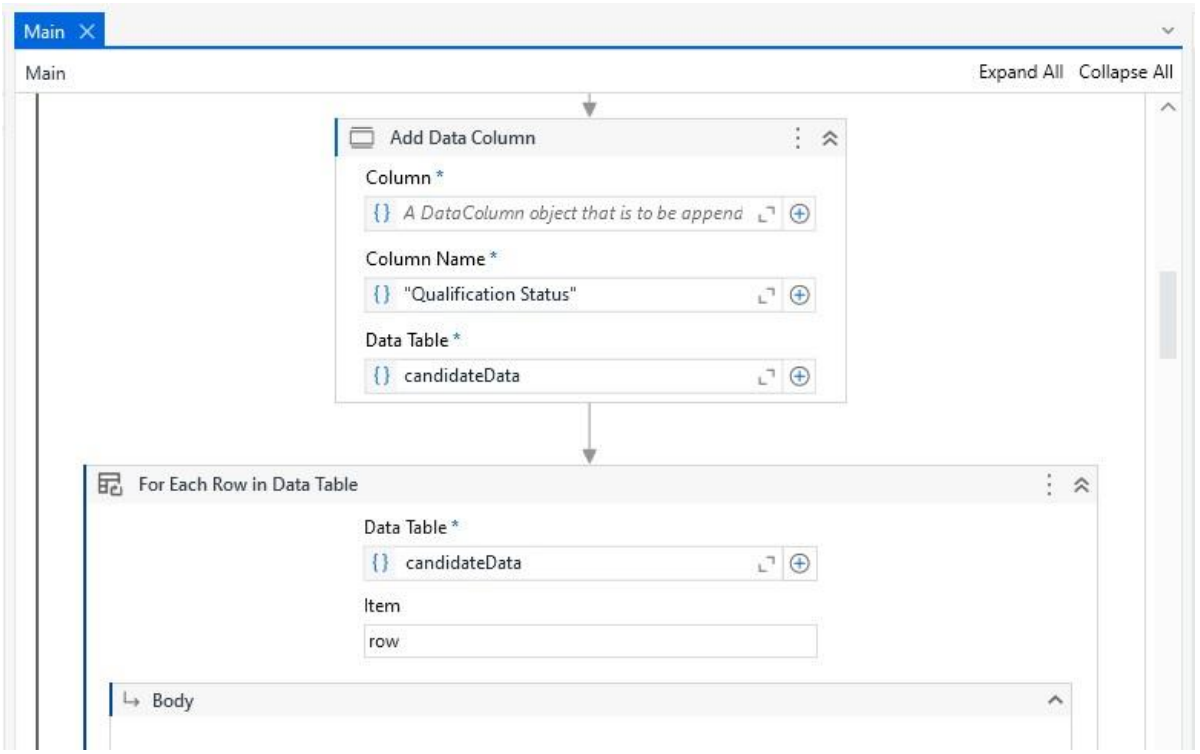
Email send to the Qualified Candidate

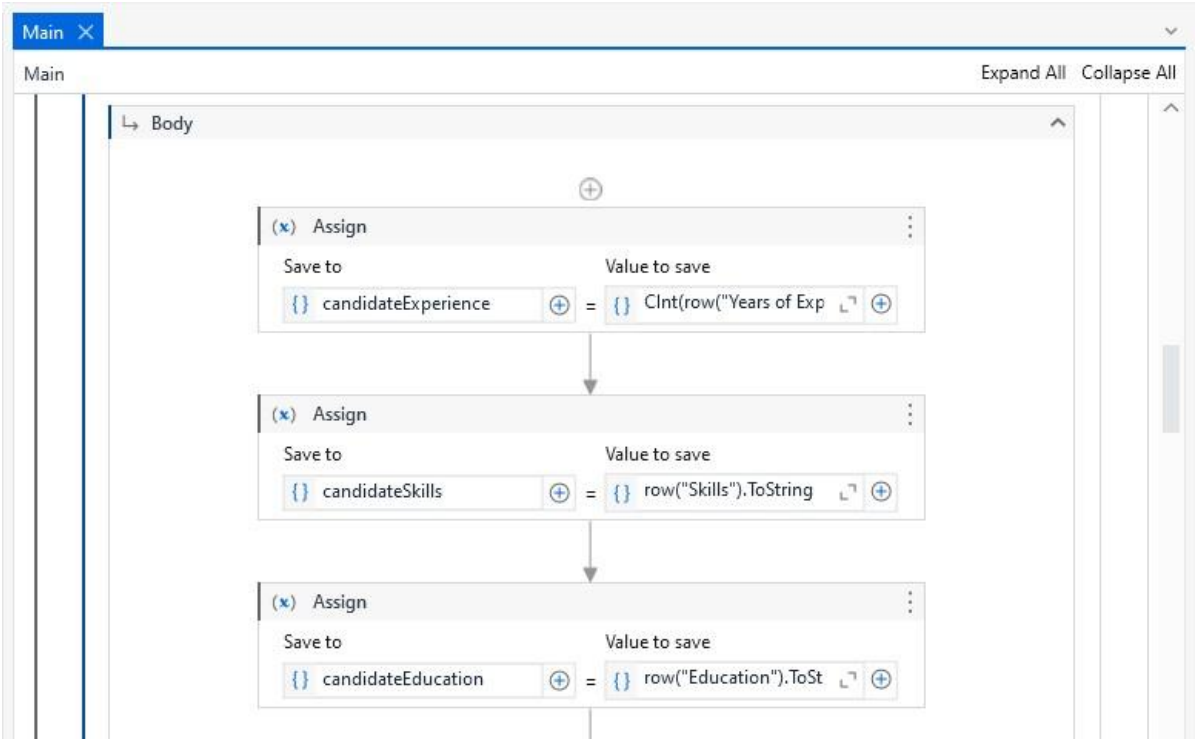


PROCESS WORK FLOW






Main
Main
Expand All
Collapse All
Add Data Column
Column *
A DataColumn object that is to be append
Column Name *
"Qualification Status"
Data Table *
candidateData
For Each Row in Data Table
Data Table *
candidateData
Item
row
Body


Main
Main
Expand All
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Body
Assign
Save to
candidateExperience
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candidateSkills
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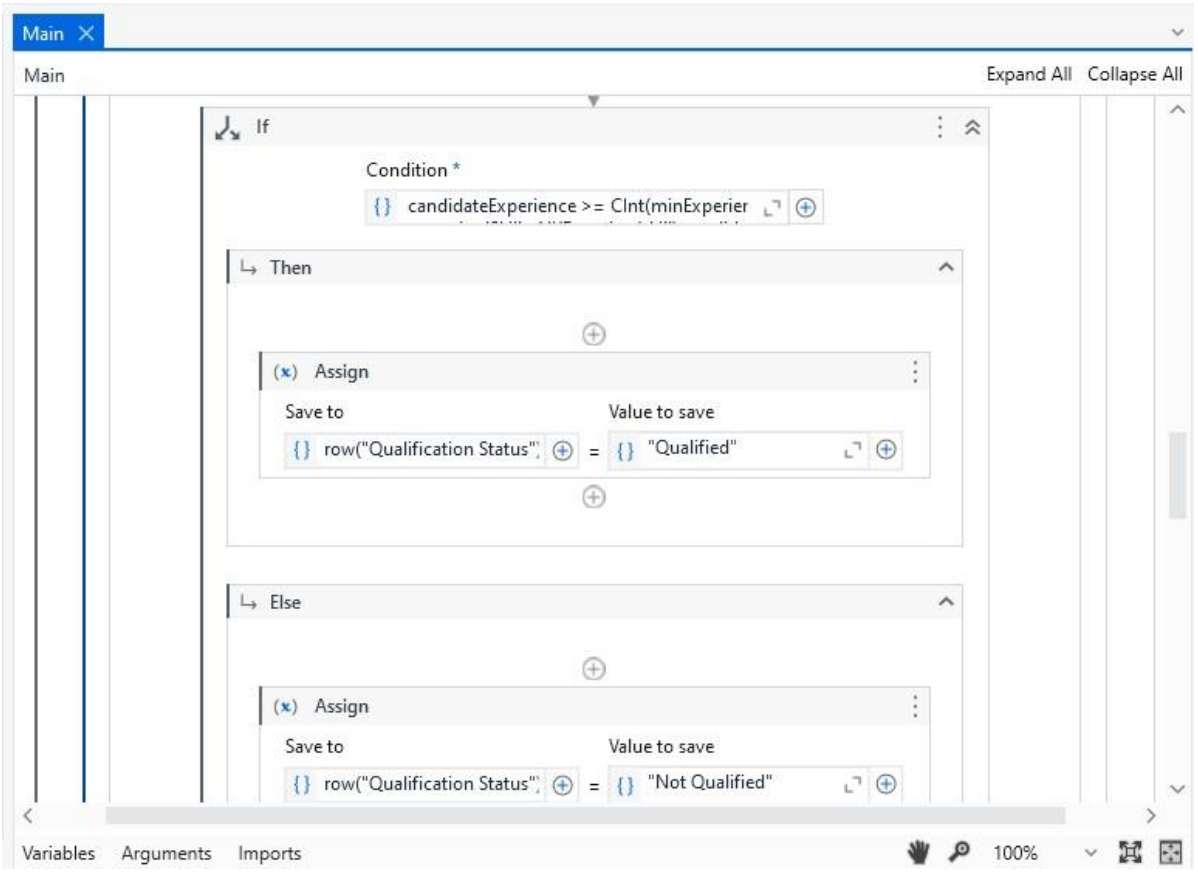
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If
Condition *
candidateExperience >= CInt(minExperier
Then
Assign
Save to
Value to save
row("Qualification Status"
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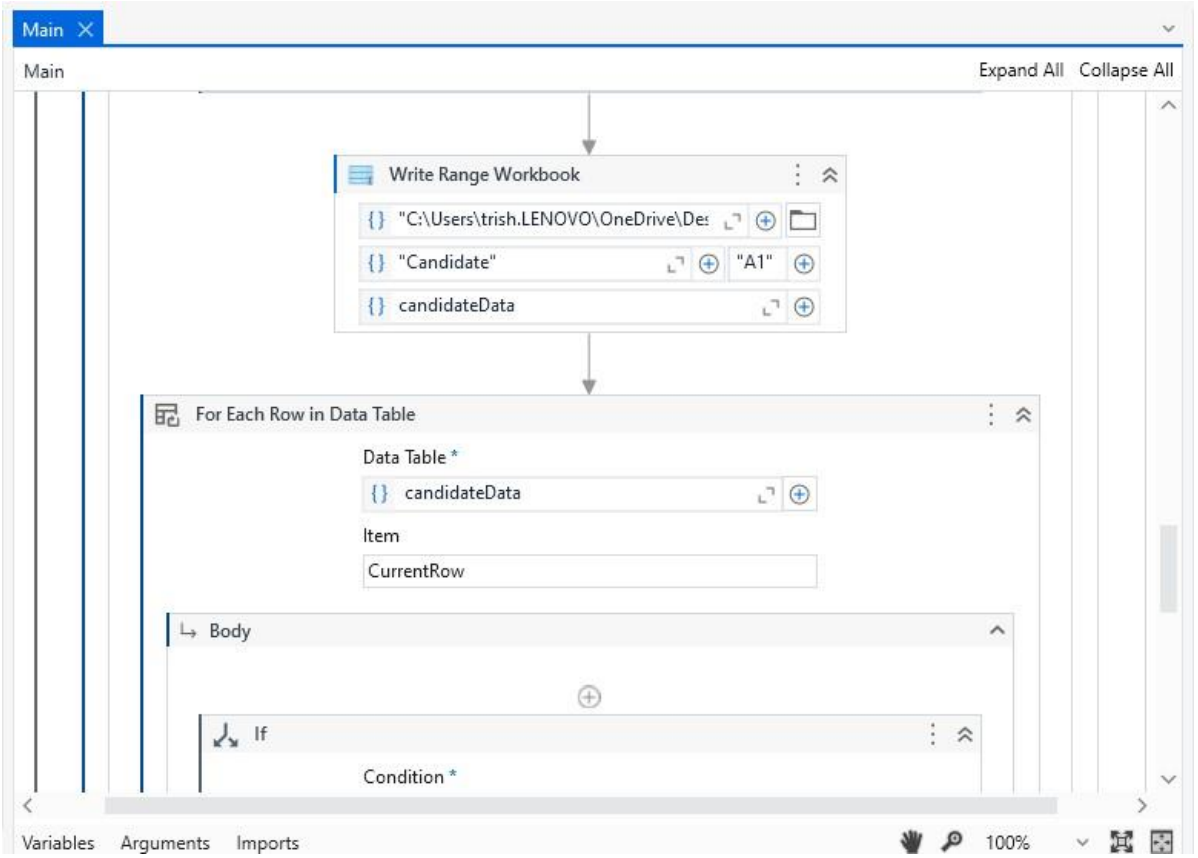
Else
Assign
Save to
Value to save
row("Qualification Status"
=
"Not Qualified"
Variables
Arguments
Imports
100%


Main
Main
Expand All
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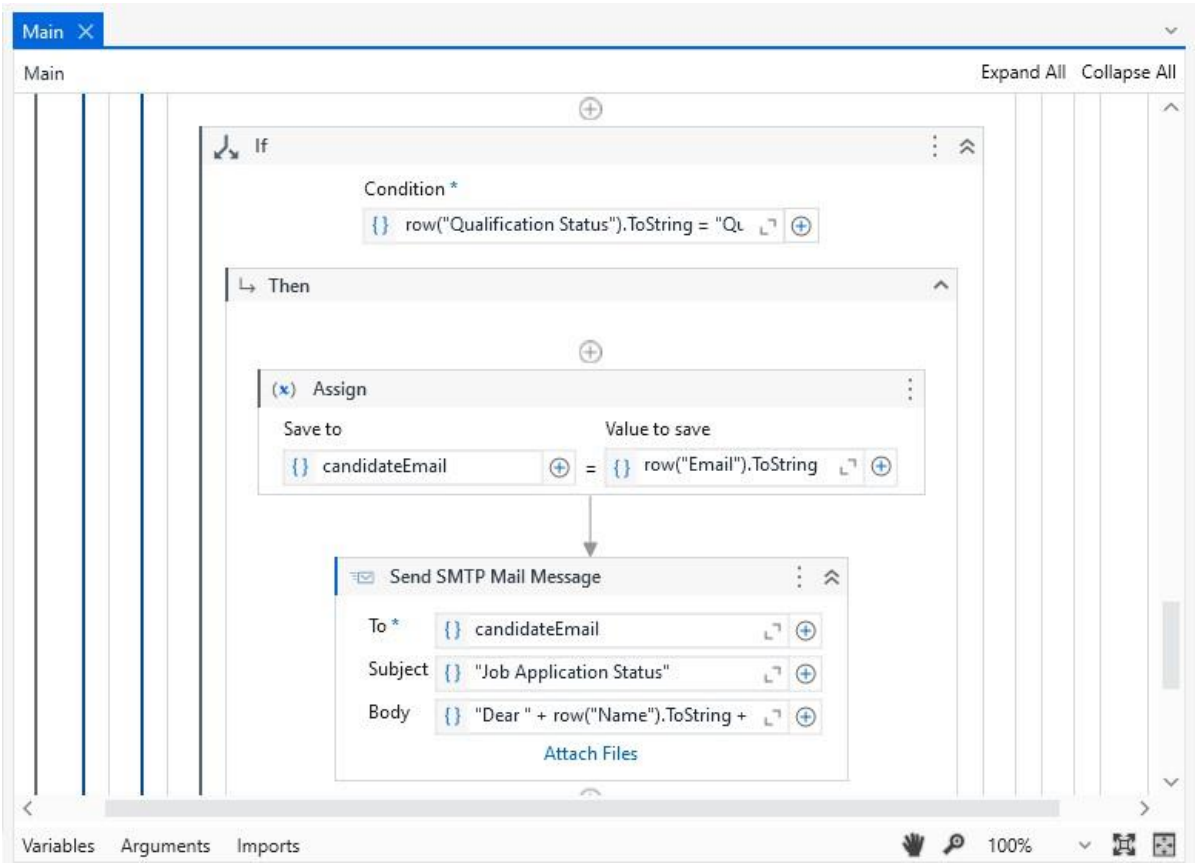
Write Range Workbook
"C:\Users\trish.LENOVO\OneDrive\Des
"Candidate"
"A1"
candidateData
For Each Row in Data Table
Data Table *
candidateData
Item
CurrentRow
Body
If
Condition *
Variables
Arguments
Imports
100%



CHAPTER 6

CONCLUSION

Based on the assessment and evaluation criteria, the candidate has demonstrated the requisite qualifications, skills, and experience required for the role. Their performance in the evaluation process reflects their potential to contribute effectively to the organization's goals. Therefore, the candidate is deemed **[qualified/unqualified]** for the position, contingent upon [any pending conditions, if applicable, such as background checks or additional certifications].

Should they accept the role, we are confident they will add value to the team and contribute to the continued success of the organization.