U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E. **Semester: VII**

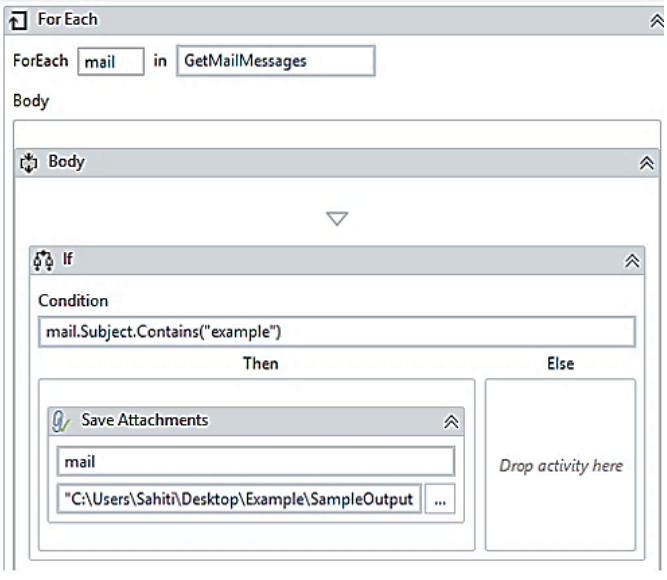
Branch: Computer Science and Engineering **Duration: 3 hrs.**

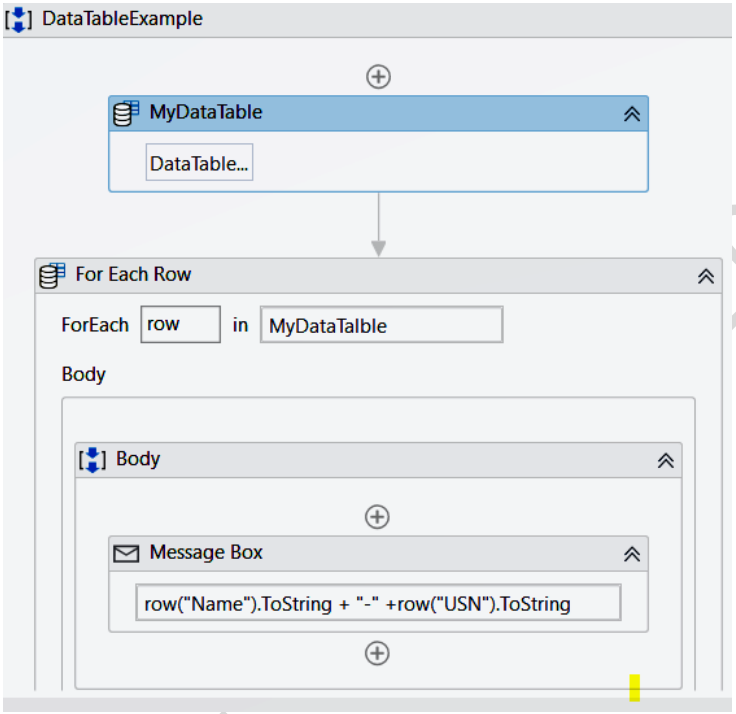
Course Code: 22CS7PERPA **Max Marks: 100**

Course: Robot Process Automation Design and Development

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	CO	PO	Marks
1	a)	Describe the essential components of Robotic Process Automation in detail.	*CO1*	*PO1*	**10**
	b)	Examine and outline the various advantages of implementing Robotic Process Automation.	*CO1*	*PO1*	**10**
		OR			
2	a)	List and describe the benefits that businesses can achieve by implementing an RPA solution.	*CO1*	*PO1*	**10**
	b)	Analyze the below given problem statement and mention the data structure required to solve the problem with justification. "The Trip advice company require the information about each city and the country that the city is in, its approximate population, and the name of the Wonder in the city."	*CO2*	*PO2*	**5**
	c)	Examine the given process, explain its functionality, and modify it to display all the email subjects. 	*CO2*	*PO2*	**5**

			UNIT – II			
	3	a)	Demonstrate the dynamic use of a data table at runtime, emphasizing its application in efficiently managing and manipulating data in a real-world scenario.	*CO1*	*PO1*	**10**
		b)	Analyze the given process, identifying the key elements and their relationships. Then, modify it to extract and display the USN (University Serial Number) and Name of students in ascending order by USN. Provide a thorough explanation of the changes made and the rationale behind them. 	*CO2*	*PO2*	**5**
		c)	Compare the usage of variables and arguments in UiPath Studio, emphasizing their distinct purposes and how they impact workflow design.	*CO1*	*PO1*	**5**
			OR			
	4	a)	Desing an attended robot using the Assign Activity, Delay Activity, and If Activity within its control flow structure.	*CO3*	*PO3*	**10**
		b)	Design a robotic system to fulfill the following task: Prompt the user to select an application from a list (e.g., App1, App2, App3, etc.) to run on the system. Based on the user's selection, the corresponding application should open. This process should repeat until the user selects the Exit option.	*CO2*	*PO2*	**10**
			UNIT - III			
	5	a)	Design a UiPath robot that can extract the Address, City, and Phone Number from an **Invoice.pdf** document using two different methods: Method 1: Read PDF Text:	*CO3*	*PO3*	**10**

			Describe the steps and components required to read the text directly from the PDF document and parse the relevant information. Method 2: Read PDF with OCR: Outline the process of using Optical Character Recognition (OCR) to extract the desired data from the PDF document, including the necessary tools and configurations.			
		b)	Design a UiPath robot to automate the login process for the student login application, implementing credential management to securely store and retrieve login credentials.	*CO3*	*PO3*	**10**
			OR			
	6	a)	Design a UiPath robot that automates the process of filling out a job application form on a company's website. The robot should: 1.Navigate to the job application page on the company's website. 2.Fill in the required fields such as name, email, phone number, and resume upload. 3.Select the desired job position from a dropdown menu. 4.Agree to the terms and conditions by clicking the appropriate checkbox. 5.Submit the completed job application form. Provide a detailed explanation of the design, including the components, workflows, and configurations required to successfully automate the job application process. Highlight the specific activities used, such as Click, Type Into, Set Text, Find Element, and Find Relative Element, to interact with the form elements.	*CO3*	*PO3*	**10**
		b)	Design a UiPath robot to perform the following operations, specifying the activities and their properties: i) Open the Excel application. ii) Read the S_NAME and USN columns from the Excel sheet (data.csv). iii) Filter the data based on the 'year_of_Join' being 2000. iv) Write the filtered data to a new file (Filter_data.csv). v) Close the Excel application.	*CO3*	*PO3*	**10**
			UNIT - IV			
	7	a)	Discuss the various methods and techniques in UiPath for debugging and troubleshooting automation workflows. Provide an in-depth overview of the tools and strategies available to identify and resolve issues during the development and execution of UiPath projects.	*CO1*	*PO1*	**10**
		b)	Design a robot with an exception handler to manage runtime errors when the search bar is delayed in loading on the Google search website.	*CO2*	*PO2*	**10**

			OR			
	8	a)	Design a process to handle exceptions when the Gmail login page fails to load completely and the login button is unavailable.	*CO2*	*PO2*	**10**
		b)	Design a UiPath robot to automate the login process for the student website, accounting for variable loading times due to network speed. The robot should adapt to changing network conditions and execute the login process efficiently, minimizing the impact of timing issues on overall performance.	*CO2*	*PO2*	**10**
			UNIT - V			
	9	a)	Describe the five key components of a UiPath Orchestrator, highlighting their roles, functions, and interactions within the automation workflow. Provide a detailed explanation of each component, including its significance in the overall automation process and how it contributes to the efficient execution of automation tasks.	*CO1*	*PO1*	**10**
		b)	Outline the best practices for working on a UiPath project, highlight the key strategies and techniques for ensuring efficient project organization and management.	*CO1*	*PO1*	**10**
			OR			
	10	a)	Demonstrate with an example for reusing workflows in automation of UiPath projects.	*CO1*	*PO1*	**10**
		b)	Mention the key points regarding quality coding practices followed in UiPath.	*CO1*	*PO1*	**10**

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