

ATME COLLEGE OF ENGINEERING

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A T M E

College of Engineering

DEPARTMENT OF COMPUTER SCIENCE AND DESIGN



LECTURE NOTES

**COURSE: ROBOTIC PROCESS AUTOMATION DESIGN &
DEVELOPMENT (UiPath)**

COURSE CODE: BCG701

SEMESTER: VII

COURSE COORDINATOR: Mr. YOGESH N

(ACADEMIC YEAR 2026-27)

INSTITUTIONAL MISSION AND VISION

Objectives

- To provide quality education and groom top-notch professionals, entrepreneurs and leaders for different fields of engineering, technology and management.
- To open a Training-R & D-Design-Consultancy cell in each department, gradually introduce doctoral and postdoctoral programs, encourage basic & applied research in areas of social relevance, and develop the institute as a center of excellence.
- To develop academic, professional and financial alliances with the industry as well as the academia at national and transnational levels.
- To develop academic, professional and financial alliances with the industry as well as the academia at national and transnational levels.
- To cultivate strong community relationships and involve the students and the staff in local community service.
- To constantly enhance the value of the educational inputs with the participation of students, faculty, parents and industry.

Vision

Development of academically excellent, culturally vibrant, socially responsible and globally competent human resources.

Mission

- To keep pace with advancements in knowledge and make the students competitive and capable at the global level.
- To create an environment for the students to acquire the right physical, intellectual, emotional and moral foundations and shine as torch bearers of tomorrow's society.
- To strive to attain ever-higher benchmarks of educational excellence.

Department of Computer Science & Design

Vision of the Department

- To develop highly talented individuals in Computer Science and Engineering to deal with real world challenges in industry, education, research and society.

Mission of the Department

- To inculcate professional behaviour, strong ethical values, innovative research capabilities and leadership abilities in the young minds & to provide a teaching environment that emphasizes depth, originality and critical thinking.
- Motivate students to put their thoughts and ideas adoptable by industry or to pursue higher studies leading to research

PROGRAM EDUCATIONAL OBJECTIVES (PEO'S):

1. Empower students with a strong basis in the mathematical, scientific and engineering fundamentals to solve computational problems and to prepare them for employment, higher learning and R&D.
2. Gain technical knowledge, skills and awareness of current technologies of computer science engineering and to develop an ability to design and provide novel engineering solutions for software/hardware problems through entrepreneurial skills.
3. Exposure to emerging technologies and work in teams on interdisciplinary projects with effective communication skills and leadership qualities.
4. Ability to function ethically and responsibly in a rapidly changing environment by applying innovative ideas in the latest technology, to become effective professionals in Computer Science to bear a life-long career in related areas.

Program Specific Outcomes (PSOs)

PSO1: Ability to apply skills in the field of algorithms, database design, web design, cloud computing and data analytics.

PSO2: Apply knowledge in the field of computer networks for building network and internet based applications.

Module 5: File & Presentation Automation

This module introduces File Automation in UiPath StudioX, emphasizing its importance for managing digital data. It outlines capabilities for organizing, managing, and editing files and folders within a working environment. It also focuses on Presentation Automation using UiPath StudioX for PowerPoint presentations. It highlights how to automate common tasks to manage presentations effectively.

File Automation Activities Reference:

Get Folder Info, Folder Exists, Create Folder, Delete Folder, Copy Folder, Move Folder, For Each File In Folder, Compress/Zip Files, Extract/Unzip Files, Get File Info, File Exists, Create File, Delete File, Copy File, Move File
Write Text File, Append Line, Read Text File

Sample Overview and File System Structure

For Each File In Folder

Employee Onboarding Sample Scenario: Case Study Context: The firm is a small organization that has recently hired \$20 new employees. The HR team uses three specific Excel workbooks to manage data and onboarding status.

Workbook 1: EmployeeOnboarding.xlsx

- Purpose: Centralized management of employee lists.
- Data points: Start dates, salaries, required training.
- Function: Main file for organizing sheets, adding input data, formulas, and analysis tables.

Workbook 2: EmployeeOnboardingInput.xlsx

- Purpose: Contains data for \$5 additional new employees needing to be appended to the original list of \$20\$.

Workbook 3: EmployeeOnboarding Final.xlsm

- Purpose: The final version of the "New Hires List" sheet.
- Function: Needs formatting and macro execution for final delivery.
- New Hires List Sheet: Contains columns for ID, Full Name, Start Date, Department, and Status (e.g., Human Resources, Operations, Information Technology, Accounting).
- New Hire Checklist Sheet: Tracks tasks such as Orientation, Employee Handbook, Policy Training, Benefits Package, Direct Deposit Setup, and Technology Setup with statuses: "Complete," "In Progress," or "Not Started."

- New Hire Salaries Sheet: Lists ID, Salary, and Estimated Bonus. Examples of salaries include:
 - ID 1: \$\$\ \$45,000\$\$
 - ID 2: \$\$\ \$100,000\$\$
 - ID 11: \$\$\ \$105,000\$\$
 - ID 16: \$\$\ \$110,000\$\$

Use Excel File Activity

- Category: Found under the Excel category/tile in StudioX.
- Function: This is the foundation for Excel automation and serves as the parent activity integrating StudioX with Excel. It allows the opening or creation of a file. Child activities (copy/paste, sort, filter, etc.) are added inside this block.
- Configuration Settings:
 - Excel file (Required): The full file path for the workbook data.
 - Reference as (Required): A unique, descriptive name (e.g., "EmployeeOnboarding"). Defaults to "Excel."
 - Save changes (Optional): If checked, saves the workbook after every action. Checked by default.
 - Create if not exists (Optional): Creates a blank file if it doesn't exist. Checked by default.
 - Edit password (Optional): Used for editing password-protected files.
 - Password (Optional): Used for opening password-protected files.
 - ReadOnly (Optional): If checked, opens in read-only mode, bypassing password protection for data extraction. Unchecked by default.

Exercise 1: Opening a File

- Goal: Open Employee Onboarding.xlsx located at C:\BookSamples\Chapter_07\Employee Onboarding.xlsx.
- Steps:
 - Add Use Excel File to a blank process.
 - Select the file path using the folder icon.
 - Set "Reference as" to "EmployeeOnboarding."
 - Leave default configurations.

Sheet Management Activities

Insert Sheet Activity

- Purpose: Adds an empty sheet to a specific workbook.
- Configuration:
 - Create in workbook (Required): The target workbook (pre-populated from parent activity).
 - Sheet name (Required): The name of the new sheet.
 - Reference new sheet as (Optional): Name used to reference this sheet in later activities via Text Builder.

Exercise 2: Adding a Sheet

- Goal: Add a sheet named "New Data" to the EmployeeOnboarding.xlsx file.
- Setup: Add Insert Sheet inside the Use Excel File activity. Use Text Builder to type "New Data."

Rename Sheet Activity

- Purpose: Changes the name of an existing sheet.
- Configuration:
 - From (Required): Identifies the existing sheet to be renamed.
 - To (Required): The new name for the identified sheet.

Exercise 3: Renaming a Sheet

- Goal: Rename "New Data" to "New Hire Statistics."
- Setup: Add Rename Sheet after Insert Sheet. Select "New Data" in the "From" field and type "New Hire Statistics" in the "To" field using Text Builder.

Duplicate Sheet Activity

- Purpose: Creates a copy of a chosen sheet within the same workbook.
- Configuration:
 - Sheet to duplicate (Required): Name of the existing sheet to copy.
 - Rename to (Optional): Meaningful name for the copy; defaults to "New Sheet" if blank.

Exercise 4: Duplicating a Sheet

- Goal: Copy "New Hire Salaries" and rename it to "Salaries Copy."
- Setup: Add Duplicate Sheet inside the parent Use Excel File activity. Select "New Hire Salaries" and type "Salaries Copy" for the new name.

Delete Sheet Activity

- Purpose: Deletes a specific sheet from a workbook.
- Configuration:
 - Select sheet (Required): Identifies the exact sheet to be removed.

Exercise 5: Deleting a Sheet

- Goal: Delete the "Salaries Copy" sheet created in the previous exercise.
- Setup: Add Delete Sheet activity. In the "Select sheet" field, choose "Salaries Copy."

Activities Reference & Configuration

Activity	Description	Key Configurations
Get Folder Info	Retrieves folder properties (files, subfolders, name, path, dates, size).	Folder path, Output to
Folder Exists	Checks for folder existence.	Folder path, Save result (Boolean)
Create Folder	Creates a new folder.	Folder name
Delete Folder	Deletes a specified folder.	Folder name, Recursive (to delete contents, default True)
Copy Folder	Copies a folder to another location, leaving the original in place.	From, To, Overwrite, Include subfolders
Move Folder	Moves a folder to another location, removing the original.	From, To, Overwrite
For Each File In Folder	Iterates through files/subfolders to perform actions.	In folder, Include sub-folders, Filter by, Order by
Compress/Zip Files	Creates a compressed file (.zip) from files or folders.	Compressed file name, Content to zip, Compression level, Password
Extract/Unzip Files	Extracts contents of a compressed file to a folder.	File to extract, Destination folder, Extract to dedicated folder, Password
Get File Info	Retrieves file properties (name, path, folder, extension, dates, size, read-only).	File path, Output to
File Exists	Checks for file existence.	File path, Save result (Boolean)
Create File	Creates a new file.	File location, File name
Delete File	Deletes a specified file.	File name
Copy File	Copies a file to another location, leaving the original in place.	From, To, Overwrite
Move File	Moves a file to another location, removing the original.	From, To, Overwrite
Write Text File	Writes specified text to a text file (overwrites if exists).	Text, Write to filename, Encoding
Append Line	Adds a line of text to the end of a text file (does not overwrite).	Text, Write to filename, Encoding
Read Text File	Reads the contents of a text file.	Filename, Output to, Encoding

Each activity includes configuration details, specific exercises with step-by-step instructions, and figures illustrating the activity cards, final configurations, and exercise outputs.

Presentation Automation Reference:

Activities: Use PowerPoint Presentation, Copy Paste Slide, Delete Slide, Add New Slide, Replace Text in Presentation, Add Text to Slide, Add Data Table to Slide, Add Image/Video to Slide, Add File to Slide, Run Presentation Macro, Save PowerPoint File As, Save Presentation as PDF

Sample Overview and File System Structure

A simplified report generation process is used as a practical example. The required source code and files are located at C:\BookSamples\Chapter_10 and include:

- **ReportTemplate.pptm:** A macro-enabled PowerPoint file serving as a template for reports.
- **ReportOutline.pptx:** A single-slide PowerPoint used for copying.
- **TopTrendingProducts.xlsx:** An Excel spreadsheet providing data for reports.
- **TrendChart.png:** An image file for visual representation in reports.

Activities Reference & Configuration

Activity	Description	Key Configurations
Use PowerPoint Presentation	Selects a PowerPoint file for automation and acts as a container for other activities.	PowerPoint file, Reference as, Save changes, Create if not exists, Template file, Password, Read only
Copy Paste Slide	Copies or moves a slide within or between presentations.	Source presentation, Slide to copy, Destination presentation, Where to insert, Move
Delete Slide	Deletes a specified slide from a presentation.	Presentation, Slide number
Add New Slide	Adds a new slide to a presentation.	Presentation, Slide Master, Layout, Add as (location), Save new slide number as
Replace Text in Presentation	Replaces all occurrences of specified text in a presentation.	Presentation, Find what, Replace with, Match case, Whole words only

Add Text to Slide	Adds text to a specified placeholder on a slide.	Presentation, Slide number, Content placeholder, Text to add
Add Data Table to Slide	Adds an Excel data table to a specified placeholder on a slide.	Presentation, Slide number, Content placeholder, Table to add
Add Image/Video to Slide	Adds an image or video file to a specified placeholder on a slide.	Presentation, Slide number, Content placeholder, Image/Video file
Add File to Slide	Adds a file as an attachment (icon) to a specified placeholder on a slide.	Presentation, Slide number, Content placeholder, File to add, Icon label
Run Presentation Macro	Executes a specified macro within a PowerPoint presentation.	Presentation, Macro, Returned value, Add Macro Argument
Save PowerPoint File As	Saves the presentation as a different PowerPoint file type (.pptx, .pptm, .ppt).	Presentation, Save as type, Save as file, Replace existing
Save Presentation as PDF	Saves the presentation as a PDF file.	Presentation, Save as file, Replace existing

Each activity includes a configuration guide, step-by-step exercise instructions, and figures illustrating the activity cards, final automation configurations, and the resulting changes in the presentation.