National College of Ireland

H9IAPI: Intelligent Agents and Process Automation

(MSCAI1, MSCAI1B_MSCAIBUS1, PGDAI_SEP24)

Release Date: Tuesday, 11 March 2025 at 09:00

Submission Deadline:

Tuesday, 22 April 2025 at 23:55

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Continuous Assessment (CA) Type: Individual Assignment% CA

Ade Fajemisin

Weight: The assignment will be marked out of 100. This CA is worth **100%** of the overall marks for this module.

Instructions: This CA is individual work.

Submission Details:
The report (PDF) implemented solution with any accompanying data and code, readme file, presentation must be submitted as a single zipped folder to Moodle before the deadline. The submitted report must be no more than 10 pages in length. Use a single column layout document. The font size for the body of the text should be 12-point Times New Roman. Include student name, student ID, and course name at the top of the first page. Make sure to acknowledge the original sources for your investigation as appropriate.

TURNITIN: All report submissions will be electronically screened for evidence of academic misconduct (i.e., plagiarism and collusion)

Description:
As part of your final assessment for the module, you are required to propose and execute a project that involves identifying a business process within specific areas such as IT or HR, modelling it using Business Process Modelling Notation (BPMN), investigating tasks for automation potential, proposing automation solutions, and demonstrating automation of one of the tasks using a tool of your choice. Additionally, you are expected to explore possibilities for intelligent automation within the identified tasks.

Project Tasks:

1. **Business Process Identification**: Identify a business process such as Banking, IT or HR domain that you believe can benefit from automation. Provide a brief overview of the chosen process and its relevance to the selected domain.

2. **Business Process Modelling**: Utilize BPM techniques to create a detailed process model for the identified business process. Include all relevant tasks, decision points, and subprocesses in your model.

3. **Automation Potential Analysis**: Analyse the tasks within the modelled process and identify those that have potential for automation. Provide a detailed commentary on each task, discussing why it can or cannot be automated.

4. **Automation Proposal**: Propose automation solutions for the tasks identified in the previous step. For each task deemed suitable for automation, outline a proposal including the automation approach, tools or technologies required, expected benefits, and potential challenges. Investigate possibilities for intelligent automation within the identified tasks. Discuss how techniques such as machine learning, natural language processing, or cognitive automation could enhance the automation process and improve efficiency.

5. **Solution Demonstration**: Choose one of the tasks identified for automation and develop a solution using a tool such as UiPath or a programming language of your choice. Demonstrate the automation process, including sample data, code (if applicable), and any necessary documentation.

Deliverables:

1. **Report**: A well-documented report explaining the tasks involved.

2. **Solution Demonstration:** A UiPath/Python implementation of the solution.

3. **Video Presentation and Slides**: A 7 min video explaining the business process identified, BPM model, the task considered for automation, and the solution developed.

Using the following scale, each task in this section will be awarded a percentage of the total mark.

Grade Criterion	H1 (> 70%)	H2.1 (> 60%)	H2.2 (> 50%)	Pass (> 40%)	Fail (< 40%)
Process Identification and Description: 10%	Interesting and challenging process identified and well discussed.	Reasonable process identified and well described.	Reasonable process and mostly described.	Process partially described	Process description not clear
Process Modelling: 10%	The process model is exceptionally clear and comprehensive, including all relevant elements such as tasks, subprocesses, decision points, and flows.	All stages of the process model are clear and mostly complete, with minor omissions or ambiguities that do not significantly impact understanding.	The process model is adequately clear but lacks some detail or completeness, making it slightly challenging to follow in certain areas.	The process model is somewhat unclear or incomplete, requiring additional effort to understand the flow of the process.	The process model is unclear and significantly incomplete, making it difficult to discern the sequence of tasks or subprocesses.
Automation Potential Analysis: 20%	Comprehensive evaluation of automation possibility of all tasks involved, addressing both short-term and long-term implications and risk assessment.	Comprehensive evaluation of automation possibility of most tasks involved, addressing both short-term and long-term implications.	Good evaluation of automation possibility of most tasks involved.	Basic evaluation of automation possibility of some tasks involved.	Poor, incomplete evaluation of few of the tasks involved.
Automation Proposal: 25%	The proposal clearly articulates a sophisticated approach for automation, integrating advanced tools or technologies that are highly suitable for the task. Thoughtful exploration of intelligent automation possibilities.	A well-defined approach is presented with appropriate tools or technologies selected, demonstrating a strong alignment with the task requirements. Thoughtful exploration of intelligent automation possibilities.	The proposal outlines a viable automation approach, with relevant tools or technologies identified to support the task.	An acceptable approach is described, although it lacks depth or clarity in tool selection or suitability for the task.	The automation approach and choice of tools are unclear or insufficiently detailed, hindering understanding and feasibility assessment.
Solution Demonstration: 15%	Exceptionally clear and very accurate solution developed around the proposal.	Mostly clear and accurate solution developed around the proposal.	Developed solution lacks reasonable accuracy.	Developed solution does not work as expected.	No solution developed.
Report: 10%	Well written, with no (large) language errors. All figures are well-conceived and easy to read. The report does not exceed the length limits. References are complete, appropriately and correctly used.	The report has a few language and/or style errors. The figures are well presented. Format and length limits are adhered to. References are complete and correctly used.	The report is readable with some language and/or style errors. Some figures may be hard to read or presented in a suboptimal manner. References are mostly complete and correctly used.	The report is readable with many language and/or style errors. Most figures are not clear or easy to read. References are few and/or mostly incomplete.	Littered with typos, and/or poor use of English. The figures are poor and hard to read. References (if any) are probably incomplete and poorly used.
Video Presentation: 10%	The presentation clearly outlined the project argument. Slides were error-free and logically presented. The speaker was poised and	The presentation somewhat clearly outlined the project argument. Slides were somewhat error-free and somewhat logically presented.	The presentation outlined the project argument. Slides were mostly error-free and mostly logically presented. The speaker	The presentation provided a limited outline of the project argument. Slides were not error-free and not logically presented. The	The presentation is unorganised and unclear. Questions were unanswered/poorly answered.

	enthusiastic. Questions were excellently answered.	The speaker was poised and enthusiastic. Questions were very well answered.	was poised and enthusiastic. Questions were well answered.	speaker was poised and enthusiastic. Questions were reasonably well answered.	