COMP3071: Artificial Intelligence
Fall 2025

Assignment 3: AI Application Group Project (25%)

Due: Week 14 - Friday 5 December 2025 (23:59)

Assignment Type: Group Project (4 students per group)
Submission: On Moodle as one .zip file (project folder, presentation slides, and report)

Learning Objectives Assessed

3. Develop small-scale intelligent applications that demonstrate the use of AI techniques in areas such as natural language processing, computer vision, or generative AI.
4. Analyze the societal and ethical implications of AI, including fairness, bias, transparency, and responsible use, with a focus on applications in education, governance, and emerging economies.
5. Integrate classical AI methods with modern machine learning approaches to design solutions that address practical challenges in diverse domains such as education, agriculture, and digitalisation.

What You Will Learn

- How to design and prototype a real-world AI application.
- How to integrate machine learning, natural language processing, or generative models into working systems.
- How to apply creativity and teamwork in solving real-world problems with AI.
- How to present and demonstrate an AI project effectively.

What This Assignment Is About

This group project gives you the opportunity to **design, build, and present a working AI application** that demonstrates your creativity, technical understanding, and teamwork.
You will work in teams of four to develop a **small-scale intelligent system** that applies one or more AI techniques learned in class. Your application should solve a simple real-world problem, be original, and showcase how AI can be used to make decisions, generate content, or assist users.
The emphasis is on **creativity, innovation, and functionality**. Your project should not only work but also show intelligent behavior that reflects real AI reasoning or learning.

What You Are Required to Do

1. **Form a team of four students** (Week 10) and select a project idea.
2. **Design and develop** a small but functional AI application using any appropriate tools or frameworks.
3. **Prepare a project report (5 pages)** summarizing your design, implementation, and results.
4. **Present and demonstrate** your application live in Week 14.

Your project must demonstrate at least **two intelligent behaviours or features**, such as:

- Decision-making
- Prediction or recommendation
- Language understanding or generation
- Image recognition or processing
- Data-driven automation

Project Options

You may choose from the following themes or propose your own idea (with instructor approval):

- **Chatbot or Virtual Assistant:** A text-based or voice-based bot using NLP.

- **Recommender System:** For movies, courses, restaurants, or travel.
- **Generative AI Application:** Generates text, art, or music using APIs or models.
- **LLM-based Tool:** A project built on OpenAI or Hugging Face models for reasoning or summarization.
- **Predictive Model:** A simple forecasting or classification system using machine learning.
- **Computer Vision Mini-Project:** Object detection, image captioning, or emotion recognition.
- **Domain-Specific AI:** A project addressing regional issues such as smart agriculture, education analytics, or local language processing.

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1). Deliverables (What to Submit)

Each group will submit a **.zip file** containing:

- **Working Prototype:** A small but functional AI application (e.g., chatbot, recommender system, generative model demo, or intelligent agent).
- **Project Report (5 pages):**
  - Problem background and objectives
  - Description of the AI methods, models, or APIs used
  - System design and architecture (with screenshots or diagrams)
  - Summary of results and reflections on teamwork
- **Presentation Slides (PowerPoint):** Used for the final group presentation and demonstration.

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2). Presentation and Demonstration

Each group will give a **10 minute presentation and live demonstration** during class in **Week 14**.
Everyone in the group needs to present at least 2.5 minutes each
Presentations should include:

- A brief overview of the problem and your solution.
- A live demo of your application's key features and how the AI component works.
- A short reflection on challenges faced and what was learned.

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3). Assessment Criteria (25%)

Criteria	Description	Weight
Creativity and Innovation	Originality and uniqueness of the idea and approach	25%
AI Integration and Functionality	How effectively AI techniques are applied and demonstrated	25%
Technical Implementation	Quality of coding, design, and number of working features	25%
Presentation and Demonstration	Clarity, engagement, and performance during the demo	15%
Teamwork and Report Quality	Collaboration, reflection, and clarity of written work	10%

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4). Recommended Tools and Resources

You may use any of the following tools or frameworks depending on your project idea:

- **Programming and ML:** Python, scikit-learn, TensorFlow, PyTorch
- **Chatbots and NLP:** OpenAI API, Dialogflow, Rasa
- **Generative AI:** Runway ML, DALL·E, Leonardo AI, Hugging Face
- **No-code AI:** Teachable Machine, Uizard, IBM Watson
- **Development Tools:** Streamlit, Flask, React, or Google Colab

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6). Submission Format

Submit one **.zip file** named using the following format:
GroupNo_COMP3071_A3.zip
Include all files (project folder, report, and slides).

Marking Rubric

Criteria	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)
Creativity and Innovation (25%)	Project demonstrates exceptional originality and innovative use of AI; problem and solution are highly creative and relevant.	Project idea is original with clear creative aspects and strong relevance.	Project shows some creativity; moderately innovative approach.	Limited originality; idea is common or lacks depth in innovation.	No evidence of creativity; copied or generic idea without originality.
AI Integration and Functionality (25%)	AI components are well-integrated and demonstrate intelligent behavior; system performs effectively with multiple working features.	AI is appropriately applied with good integration and consistent functionality.	AI is present but partially implemented or lacks full integration.	Minimal AI use; system works inconsistently or shows limited intelligence.	AI not evident or non-functional.
Technical Implementation (25%)	Code, architecture, and design are well-structured and efficient; strong technical execution and documentation.	Implementation is sound with minor technical flaws; design is clear.	Functional code but may contain minor issues; technical approach is adequate.	Implementation is incomplete, inefficient, or poorly structured.	Non-functional code or missing implementation.
Presentation and Demonstration (15%)	Presentation is professional, engaging, and well-organized; live demo works perfectly; excellent team communication.	Presentation is clear and confident; minor demo issues; good communication.	Presentation is understandable but lacks engagement or polish.	Presentation is unorganized; demo has several errors; weak delivery.	Poor or missing presentation; demo fails completely.
Teamwork and Report Quality (10%)	Excellent collaboration; all members contribute equally; report is clear, reflective, and well-written with visuals and citations.	Good collaboration; report is complete and well-structured with some reflection.	Adequate collaboration; report lacks some clarity or analysis.	Uneven contribution among members; report incomplete or poorly written.	Minimal teamwork; missing or plagiarized report.