Final Project Requirements
NLP Course

Team Formation

- Each team may consist of up to 5 members.
- Teams are free to choose any project theme as long as the components below are satisfied.

Project Overview

Your project should combine interactive application design with modern NLP techniques. The goal is to build a small system in which a chatbot understands how your application works and can guide users (and an AI agent) through it.

Your final project must include the following components:

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1. Interactive Service or Game

- Design and implement an interactive interface (a service, tool, or simple game).
- The UI can be web-based, desktop-based, or mobile-based.
- The interaction must be meaningful enough for a user to navigate, perform actions, and receive feedback.

Examples: a puzzle game, a quiz system, a navigation-based game, a booking-like service, a multi-step workflow, etc.

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2. Documentation-Based Chatbot (RAG System)

You must build a Retrieval-Augmented Generation (RAG) chatbot that understands your service/game.

- Create documentation that fully explains how your service or game works (rules, actions, navigation, available features).
- Your chatbot must use this documentation as its knowledge base.
- Users should be able to ask the chatbot for:
    - Game/service instructions
    - Recommended actions
    - Explanations of rules or steps
    - Navigation advice

The chatbot should answer using the documentation retrieved from your RAG pipeline.

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3. A Trainable Deep Neural Network Agent

In addition to the chatbot, your system must include another deep neural network (DNN) that the users themselves train or fine-tune.

- This DNN will act as an agent that performs actions *inside* your service/game.
- The agent should be able to:
    - Receive navigation/action instructions from the chatbot, and
    - Execute them by interacting with your app.

You can choose any model type (classification, policy model, encoder model, etc.).

System Flow Summary

1. User interacts with the UI → asks the chatbot for help.
2. Chatbot (with RAG) retrieves the documentation → gives navigation or action advice.
3. User triggers the agent → the agent uses its trained DNN to carry out the actions recommended by the chatbot.

This creates a full loop of:

Interaction → Query → Guidance → Execution

Deliverables

- Complete working system (UI + chatbot + agent).
- Documentation of the game/service.
- Demonstration of the RAG pipeline.
- Demonstration of the DNN agent.
- Project report and final presentation.Grading Rubric Table

Grading Rubric Table

Component	Description	Marks
Interactive Service/Game	Functionality, clarity of interaction, UI usability.	**4**
RAG Chatbot	Correct retrieval, grounded answers, accurate navigation guidance.	**6**
Trainable DNN Agent	User-trained/fine-tuned model; agent correctly executes navigation/actions.	**6**
Integration & System Flow	Smooth connection between UI → chatbot → agent; correct execution loop.	**2**
Report & Presentation	Completeness, clarity, and understanding demonstrated by team.	**2**
Total		**20 Marks**