Weekly Progress Report			
Topic:	**Chatbot – Final Project**	Week No.	**11**
Course Code:	**CSST101, CSST102**	Term:	1st Semester
Course Title:	**Advance Representation and Reasoning** **Basic Machine Learning**	Academic Year:	2024-2025

Main Tasks Assigned:

Select dataset for the project
Prepare and preprocess the data
Define project scope and assign roles to team members (if in a group)

Work Completed:

The work completed this week involved selecting the occupations. csv dataset for the project and preparing it for use. Preprocessing steps included removing unnecessary columns, handling missing data values, and standardizing column names for consistency. The scope of the project was defined to focus on building a chatbot that leverages job-related information, and roles were outlined to streamline the workflow.

Challenges Encountered:

Challenges encountered included dealing with missing data in critical fields of the dataset and ensuring its compatibility with the planned model architecture. There were also initial difficulties in clearly defining the project scope and assigning roles effectively.

Solutions Implemented:

Solutions implemented involve cleaning the dataset to improve its quality and preparing a pipeline for preprocessing steps. Project roles and responsibilities were clarified to enhance collaboration, and the chatbot's objectives were narrowed for better feasibility and focus

Tasks for Next Week:

Next week tasks include generating a question-answer corpus from the dataset, selecting a pre-trained model for the chatbot, and starting preliminary model training with the processed data.

Weekly Progress Report			
Topic:	**Chatbot – Final Project**	Week No.	12
Course Code:	**CSST101, CSST102**	Term:	1st Semester
Course Title:	**Advance Representation and Reasoning** **Basic Machine Learning**	Academic Year:	2024-2025

Main Tasks Assigned:

Build the initial model architecture
Implement feature extraction
Begin initial model training using the preprocessed data

Work Completed:

The work completed this week focused on setting up the chatbot model's foundational components. Libraries such as transformers, datasets, and torch were installed, and the dataset was loaded and preprocessed to remove unnecessary columns and rows with missing values. A feature extraction function, create-corpus, was develop to generate question-answer pairs, and integration with pre-trained models was initiated.

Challenges Encountered:

Such as handling missing data and inconsistent column naming, which required thorough preprocessing. The dataset's limited contextual diversity was another challenge that could impact the model's generalizability.

Solutions Implemented:

Cleaning the dataset, standardizing column names, and designing a diverse corpus. These steps ensured the data's quality and prepared it for model training effectively.

Tasks for Next Week:

Finalize the model architecture and tokenizer selection. Initial training will begin with the preprocessed corpus, divided into training and validation sets. Performance metrics will be defined to evaluate the chatbot and refine the pipeline on results.

Weekly Progress Report			
Topic:	**Chatbot – Final Project**	Week No.	**13**
Course Code:	**CSST101, CSST102**	Term:	1st Semester
Course Title:	**Advance Representation and Reasoning** **Basic Machine Learning**	Academic Year:	2024-2025

Main Tasks Assigned:

Fine-tune model hyperparameters (e.g., learning rate, batch size)
Conduct initial testing on the validation dataset
Record training results and identify potential issues

Work Completed:

This week, we focused on fine-tuning the model hyperparameters, including the learning rate and batch size. We conducted initial testing on the validation dataset to evaluate performance metrics like accuracy and loss, and recorded the training results to spot any potential issues with the model's performance.

Challenges Encountered:

A main challenges was balancing the learning rate and batch size. The learning rate was either too high, causing oscillation, or too low, resulting in slow convergence. The batch size also needed adjustment to prevent memory overload or excessive training time while ensuring adequate model performance.

Solutions Implemented:

To solve these, we adjust the learning rate gradually with a scheduler and optimized the batch size for both speed and memory efficiency. We also used cross-validation and refined the model's architecture to improve generalization on the validation dataset

Tasks for Next Week:

We will continue refining hyperparameters and conduct detailed evaluations with additional metrics like precision, recall, and F1 score. We'll also focus on preparing the model for deployment, conducting stress testing, and ensuring its performance with a wider range of user inputs.

Weekly Progress Report			
Topic:	Chatbot – Final Project	Week No.	14
Course Code:	CSST101, CSST102	Term:	1st Semester
Course Title:	Advance Representation and Reasoning Basic Machine Learning	Academic Year:	2024-2025

Main Tasks Assigned:

Optimize model based on Week 3 results
Improve data augmentation and preprocessing techniques
Continue model training and monitor validation performance

Work Completed:

This week, the focus was on continuing the training of the chatbot model. Hyperparameters were further optimized, and the model was trained on the expanded dataset. The training process included monitoring key metrics such as loss and accuracy to assess performance.

Challenges Encountered:

Challenges included managing training time as adjustments to hyperparameters extended the training duration. Additionally, there were issues with computational resource allocation, which affected the speed of training.

Solutions Implemented:

Solutions involved optimizing batch sizes and learning rates to improve training efficiency. Resource management strategies were employed to allocate sufficient computational power for training without interruptions.

Tasks for Next Week:

Next week, tasks will include continuing hyperparameter tuning, addressing any performance issues identified during training, and preparing for initial testing once training is completed.

Instructor's Feedback:

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Instructor's Signature: _____
Date: _____

Weekly Progress Report			
Topic:	Chatbot – Final Project	Week No.	15
Course Code:	CSST101, CSST102	Term:	1st Semester
Course Title:	Advance Representation and Reasoning Basic Machine Learning	Academic Year:	2024-2025

Main Tasks Assigned:

Implement error analysis on misclassified data points
Adjust model and retrain to address identified issues
Begin drafting the mid-term project report

Work Completed:

This week, the model's training continued with a focus on refining its architecture based on previous results. Additional layers were introduced to enhance performance, and various configurations were tested to find the best fit for the dataset.

Challenges Encountered:

Challenges included ensuring that the model did not overfit to the training data while still improving its ability to generalize across different job-related queries.

Solutions Implemented:

Solutions involved implementing dropout layers and early stopping criteria during training to mitigate overfitting risks. Cross-validation techniques were also applied to evaluate model performance more robustly.

Tasks for Next Week:

Next week, tasks will focus on finalizing model adjustments based on ongoing training results and preparing for a structured testing phase once training reaches completion.

Instructor's Feedback:

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Instructor's Signature: _____
Date: _____

Weekly Progress Report

Topic:	Chatbot – Final Project	Week No.	16
Course Code:	CSST101, CSST102	Term:	1st Semester
Course Title:	Advance Representation and Reasoning Basic Machine Learning	Academic Year:	2024-2025

Main Tasks Assigned:

Perform final tests on the trained model using the test dataset
Compile final results, including performance metrics (e.g., accuracy, precision, recall)
Finalize project report

Work Completed:

This week, the focus remained on refining the chatbot's model through iterative training sessions. Various configurations were tested, and performance metrics were recorded to track improvements in accuracy and response relevance.

Challenges Encountered:

Challenges included balancing model complexity with performance metrics, as some configurations led to diminishing returns in accuracy while increasing computational demands.

Solutions Implemented:

Solutions involved reverting to simpler architectures when necessary and conducting targeted experiments to identify effective configurations without excessive complexity.

Tasks for Next Week:

Next week, tasks will include concluding the current round of training, preparing a plan for initial testing of the chatbot's functionalities, and gathering insights from preliminary results.

Instructor's Feedback:

Instructor's Signature: _____
Date: _____

Weekly Progress Report			
Topic:	Chatbot – Final Project	Week No.	17
Course Code:	CSST101, CSST102	Term:	1st Semester
Course Title:	Advance Representation and Reasoning Basic Machine Learning	Academic Year:	2024-2025

Main Tasks Assigned:

Prepare final project presentation
Submit final report and code
Record project video documentation (if required)

Work Completed:

This week marked a significant milestone as the chatbot's training approached completion. Final adjustments were made to hyperparameters, and preliminary results indicated promising performance metrics that align with project objectives.

Challenges Encountered:

Challenges included ensuring that all aspects of the model's functionality were adequately addressed before moving into testing phases, particularly regarding response accuracy and contextual understanding.

Solutions Implemented:

Solutions involved conducting final evaluations of model outputs against expected results and making minor adjustments to improve response quality based on observed discrepancies during training sessions.

Tasks for Next Week:

Next week, tasks will focus on initiating a structured testing phase for the chatbot's responses and functionality once training is finalized, allowing for comprehensive evaluation before deployment preparations begin.

Instructor's Feedback:

Instructor's Signature: _____
Date: _____