



BS in Data Science and Applications

Software Engineering

Milestone 1

Topic Gen AI Integration with Seek portal.

Team 30

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Problem Statement

Integrating Generative AI in seek portal.

- **Overview:**

The rapid advancement of technology has revolutionized the educational landscape, providing new opportunities for personalized learning and interactive content delivery. Generative AI (GenAI) offers the potential to transform these platforms by creating more engaging, customized, and efficient learning environments. We aim to integrate GenAI into seek portal to enhance the user experience, improve learning outcomes and streamline content creation. As a part of this project, we will be adding following functionalities:

1. **Summary Generation:**

GenAI can automatically generate concise summaries of lengthy lectures, making it easier for students to review and grasp key concepts quickly at the time of revision. This feature can be tailored to highlight essential points, critical discussions, and important takeaways, ensuring that students focus on the most relevant information. Additionally, AI-generate summaries can be personalized based on individual learning preferences and past interactions with the content.

2. **Receiving feedbacks:**

GenAI can analyse student submissions and offer immediate, detailed feedback, identifying strengths and areas for improvement. This system can highlight common errors, suggest resources for better understanding, and offer personalized tips for enhancing the quality of work. This immediate and constructive feedback loop can help students to quickly learn from their mistakes, refine their skills, and improve their academic performance over time.

3. **Providing synthetic data:**

Synthetic data, created using GenAI, can simulate real-world data scenarios, allowing students to practice and test their models without privacy concerns or data limitations. This can be particularly beneficial in fields like machine learning, data science, and artificial intelligence, where large and diverse datasets are crucial for training robust models.

4. **Providing external resources:**

Integrating Generative AI (GenAI) to provide external resources for content on an educational portal can greatly enrich the learning experience. GenAI can curate and recommend a wide array of supplementary materials, enhancing the core curriculum and supporting diverse learning needs



Learner Journey Map

	Features	Without GenAI (Currently)	With GenAI	Possible Advantages
C H A T B O T	Summary Generation	Sometimes the lectures are a bit too long and we have limited time to go through them.	Generating summary for long lectures will save time during quick revisions.	<ul style="list-style-type: none"> Saves time and effort in reviewing content. Provides concise and relevant information. Enhances learning efficiency.
	Receiving feedbacks	Feedback on incorrect assignment answers is often delayed and limited.	Providing instant, personalized feedback on assignments will help identify areas of improvement.	<ul style="list-style-type: none"> Immediate, tailored feedback. Helps identify areas of improvement quickly. Supports continuous learning.
	Providing synthetic data	Manually creating datasets for practicing models and algorithms can be time-consuming and prone to biases.	Generating diverse and unbiased synthetic data for practicing on different models and algorithms will help the students to get a good grip over the topic.	<ul style="list-style-type: none"> Accelerates data availability. Enables practicing on varied datasets. Helps students gain a comprehensive understanding of models and algorithms.
	Providing external resources	Finding relevant additional resources for some topics that are not easy to understand manually can be time-consuming.	Recommending and providing links to external articles, papers, and tutorials relevant to the topic will save student's time.	<ul style="list-style-type: none"> Saves students' time by quickly providing relevant materials. Ensures access to high-quality external resources. Enhances learning with a broader perspective.



User Stories

As a student

1. Accessing Learning Material:
 - I want to receive concise summaries of learning videos and reading materials.
 - So that I can quickly grasp the key concepts and save time on revision.
2. Receiving Feedback on Assignments:
 - I want to receive immediate, detailed feedback on my incorrect answers in assignments.
 - So that I can understand my mistakes and learn the correct concept promptly.
3. Utilizing and inbuilt chatbot:
 - I want to interact with an inbuilt chatbot for quick assistance on course related queries.
 - So that I can get instant help without waiting for human intervention, enhancing my learning experience.
4. Practicing with synthetic data:
 - I want to use synthetic data generate by GenAI for data science practice exercises.
 - So that I can work on diverse datasets and improve my data handling and analysis skills.

As a Faculty Member

1. Monitoring student progress:
 - I want to track student engagement with GenAI features (like summaries, feedback, and chatbot usage),
 - So that I can identify areas where students are struggling and provide targeted support.
2. Enhancing course material:
 - I want to update and refine course content based on the insights provided by GenAI analytics,
 - So that the learning materials are always relevant and address common student issues effectively.

As a Support Staff

1. Addressing Technical Issues:
 - I want to receive notifications of any technical issues faced by students while using GenAI features,
 - So that I can resolve them promptly and ensure a smooth learning experience for students.
2. Assisting with GenAI Features:
 - I want to provide guidance and troubleshooting for students on using GenAI features,
 - So that they can effectively utilize these tools to enhance their learning process.

As an Admin

1. Managing User Roles:
 - I want to assign and manage user roles and permissions within the GenAI-enhanced portal,
 - So that access to different features and data is controlled and secure.



2. Ensuring Data Privacy:
 - I want to implement strict data privacy measures for all interactions with GenAI tools,
 - So that student data is protected and complies with relevant regulations.
3. Analysing GenAI Impact:
 - I want to analyse the impact of GenAI integrations on student performance and engagement,
 - So that I can make informed decisions on further enhancements and resource allocation.

Acceptance Criteria

1. **Accessing Learning Material**
 - GenAI generates summaries for all learning videos and reading materials.
 - Summaries are concise, covering the key points of the content.
 - Summaries are available immediately after accessing the material.
 - Students can benefit by knowing what's being taught.
2. **Receiving Feedback on Assignments**
 - Immediate, detailed feedback provided for all incorrect answers in assignments.
 - Feedback includes explanations of the mistakes and the correct concepts.
 - Students can feel improvements over time based on feedback received.
- **Utilizing an Inbuilt Chatbot**
 - Inbuilt chatbot is available 24/7 within the SEEK portal.
 - Chatbot can answer a wide range of course-related query accurately.
 - Students can interact with the chatbot through a user-friendly interface.
- **Practicing with Synthetic Data**
 - GenAI generates diverse and realistic synthetic data sets for data science practice exercises.
 - Synthetic data covers a wide range of scenarios relevant to the course.
 - Students can request new data sets as needed for practice.