CAPSTONE PROJECT

COLLEGE ADMISSION AGENT (RAG-BASED)

Presented By:
P Chandra Hasini-KL UNIVERSITY-AI&DS

edunet foundation

OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

- The college admission process often overwhelms students with complex information about eligibility, deadlines, and courses. Institutions handle countless inquiries manually, leading to inefficiencies and delays. There’s a strong need for an intelligent system that can simplify and streamline the process using real-time and trusted information sources.

PROPOSED SOLUTION

- The proposed system aims to address the challenge of simplifying and streamlining the college admission process using a Retrieval-Augmented Generation (RAG) based AI agent. The solution will consist of the following components:
- **Data Collection:**
- Gather institutional data including:
- Course offerings, eligibility criteria, and fee structures

Data Preprocessing:

  - Clean and organize unstructured admission-related documents (PDFs, DOCs, etc.).
  - Perform text normalization, keyword tagging, and metadata extraction.

- **RAG-Based AI Agent:**
- Implement a Retrieval-Augmented Generation pipeline combining:
- **Retriever**: to fetch relevant data chunks from institutional content
- **Deployment:**
  - Develop a user-friendly chatbot/web-based interface for real-time student interaction
  - Use **IBM Cloud Lite** for deployment with a scalable backend
  - Enable multilingual support and responsive design for mobile/desktop platforms
- **Evaluation:**
  - Measure system performance using: **Accuracy** of responses and **Response latency** and user satisfaction feedback.
  - Result:
  - A functional AI-based admission assistant that answers queries with high accuracy

SYSTEM APPROACH

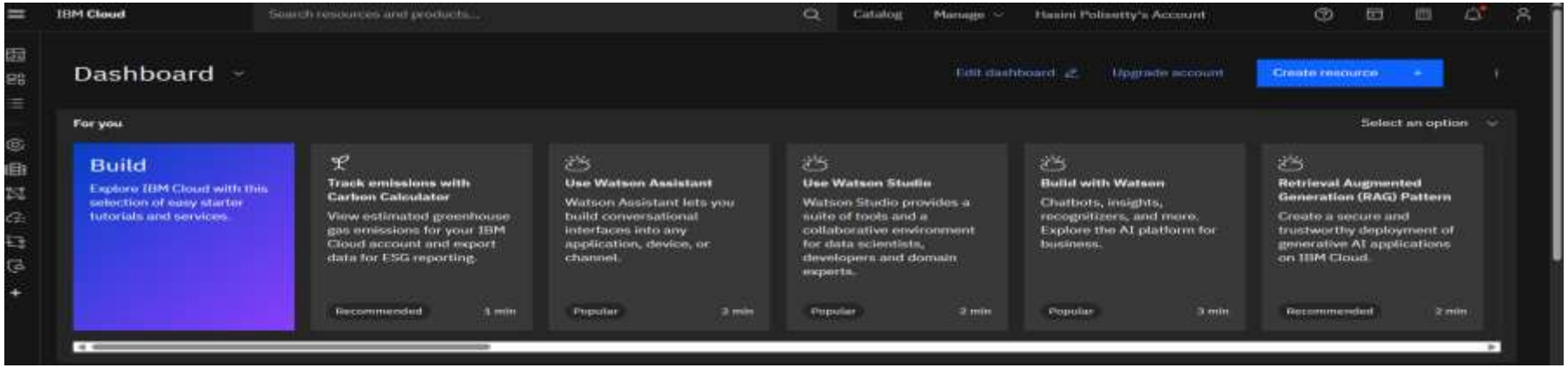
The "System Approach" section outlines the overall strategy and methodology for developing and implementing the rental bike prediction system. Here's a suggested structure for this section:

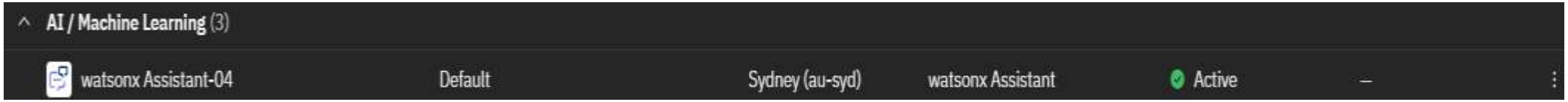
- IBM Cloud Lite Services
- IBM Granite (LLM)
- Python (Flask) for UI
- MongoDB/Cloudant for data
- APIs for data retrieval and live updates

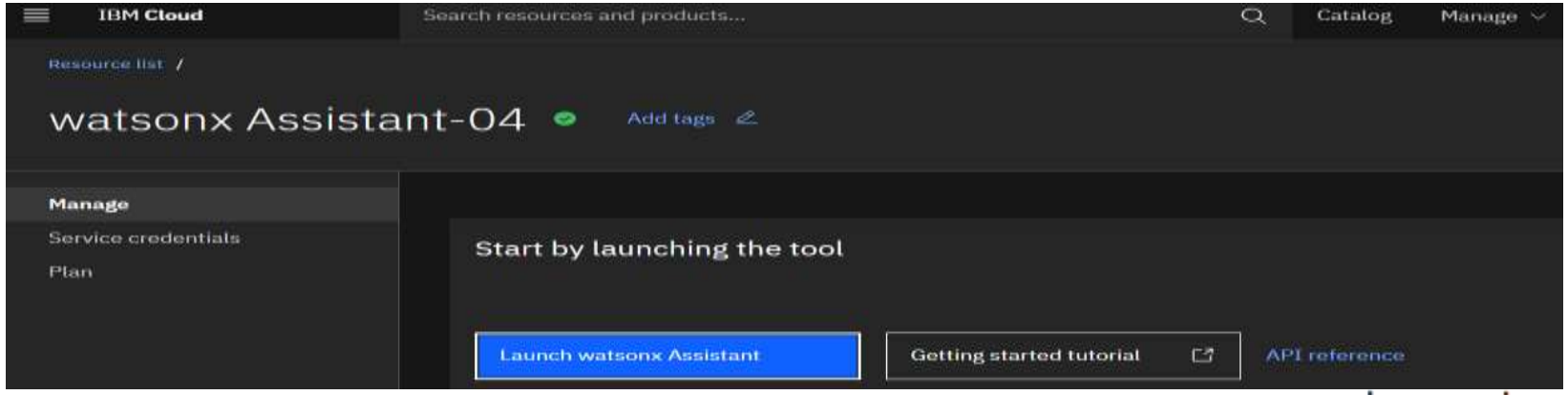
ALGORITHM & DEPLOYMENT

- In the Algorithm section, describe the machine learning algorithm chosen for predicting bike counts. Here's an example structure for this section:
- **Algorithm Selection:**
  - Implement a **RAG architecture** combining: Dense retriever for querying institutional FAQs/documents.
- **Training Process:**
  - A curated dataset of institutional FAQs, admission documents, past queries, and official notifications.
  - **Prediction Process:**
  - The **retriever** searches the knowledge base for the top-k most relevant chunks.

ALGORITHM & DEPLOYMENT

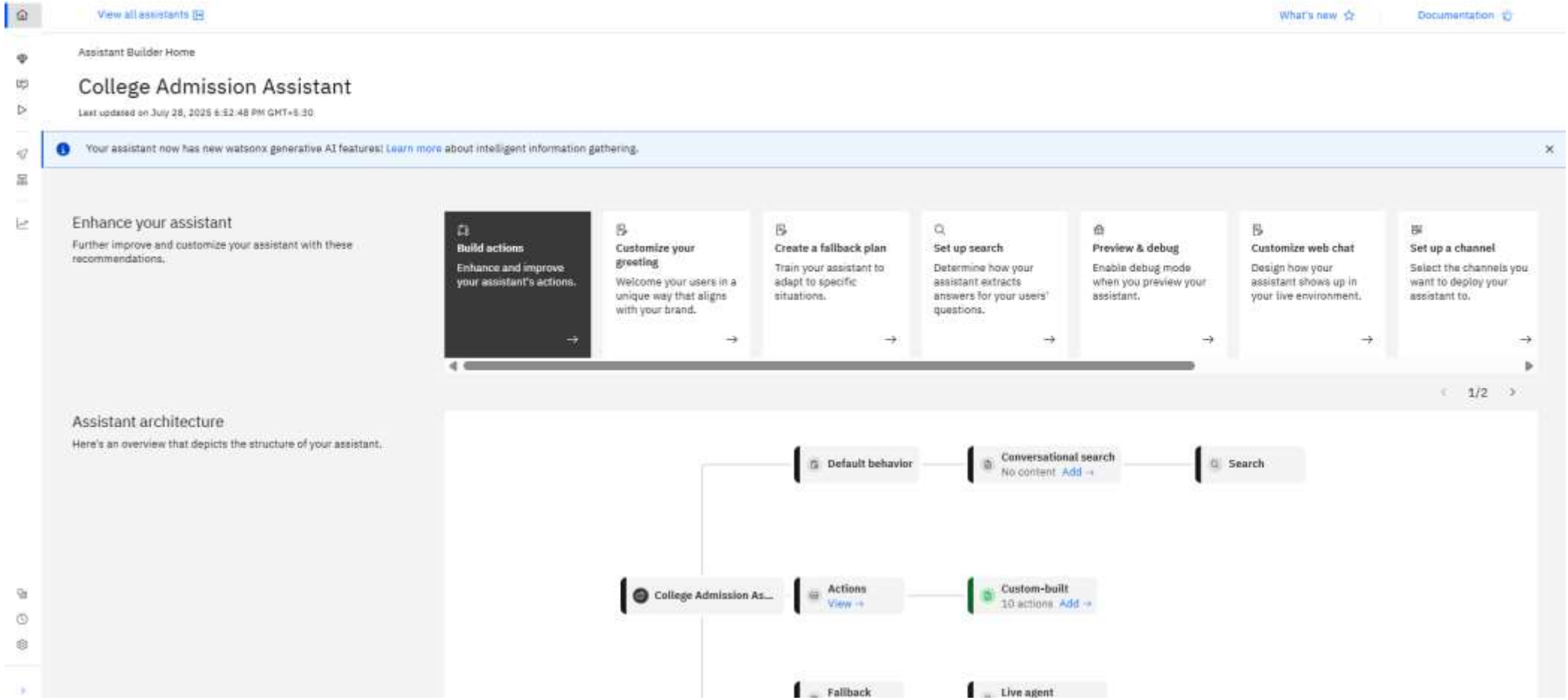






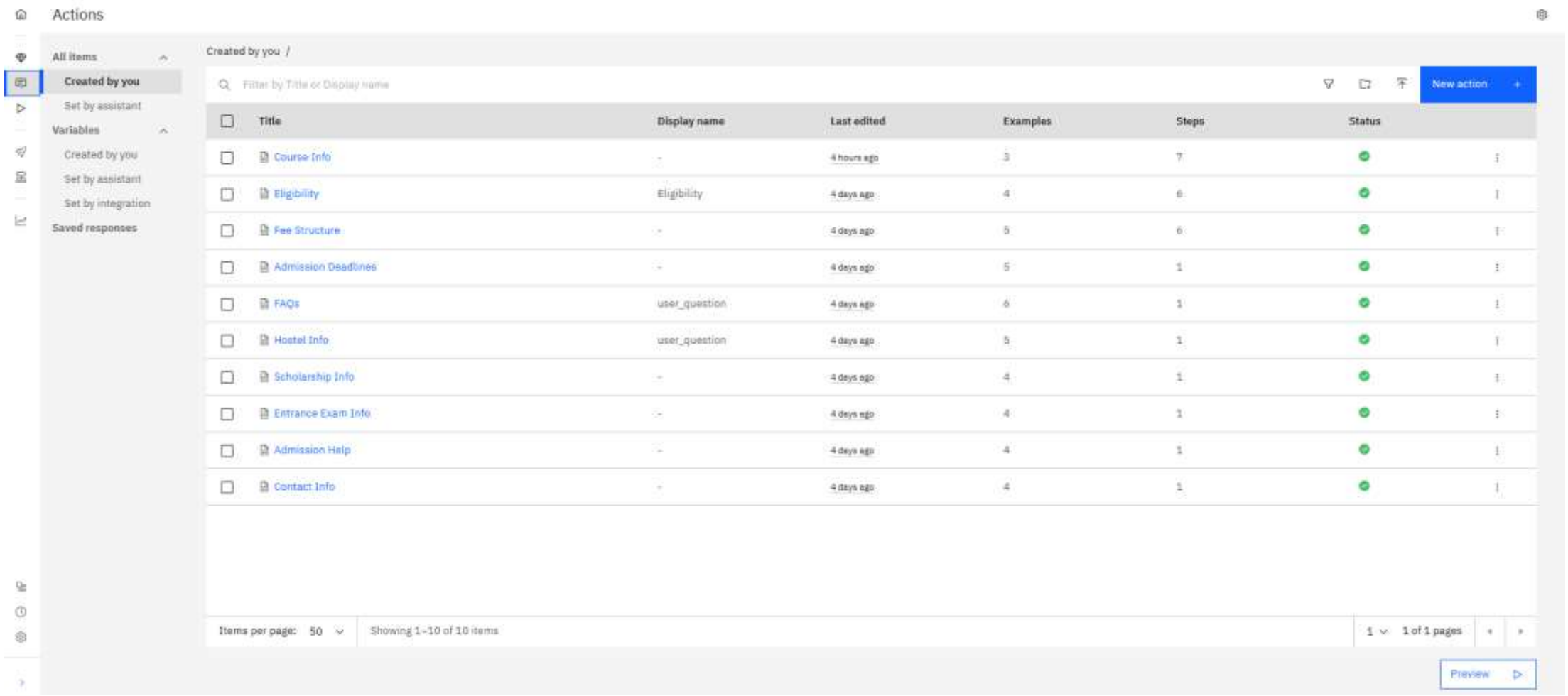
edunet foundation

ALGORITHM & DEPLOYMENT



edunet foundation

ALGORITHM & DEPLOYMENT

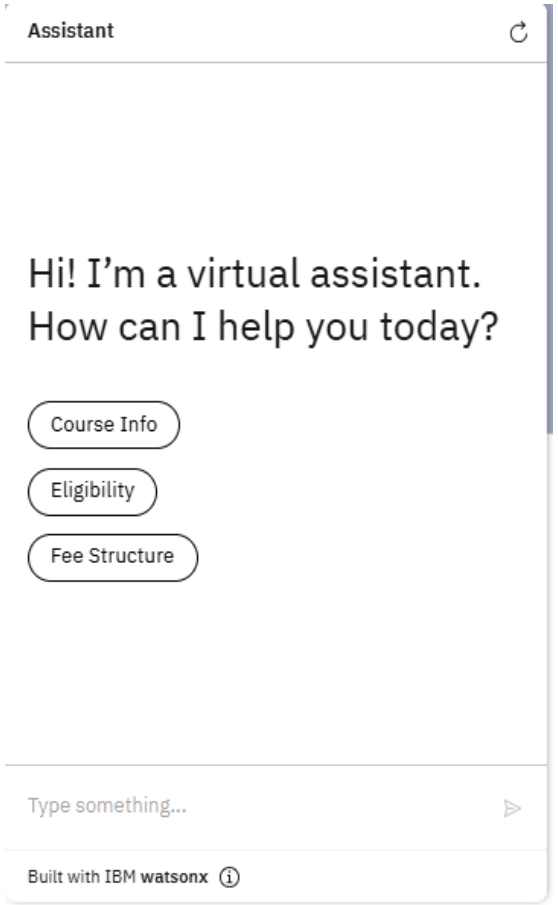


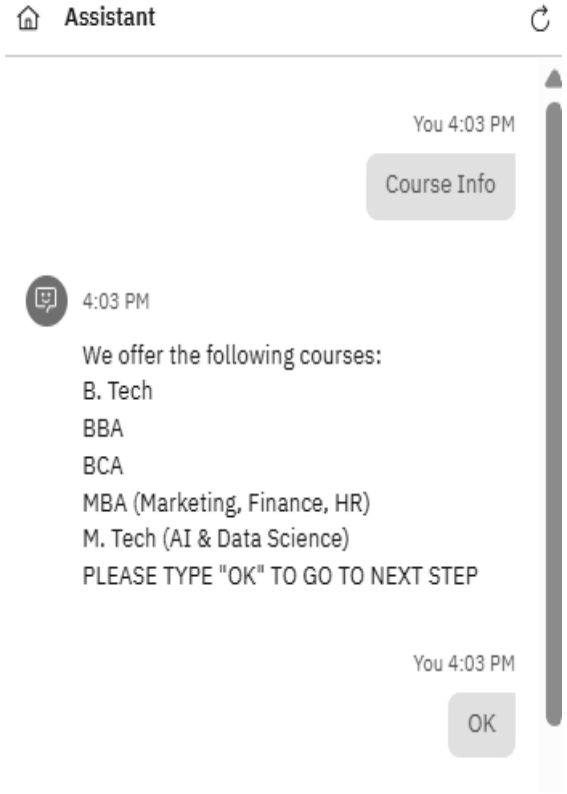
edunet foundation

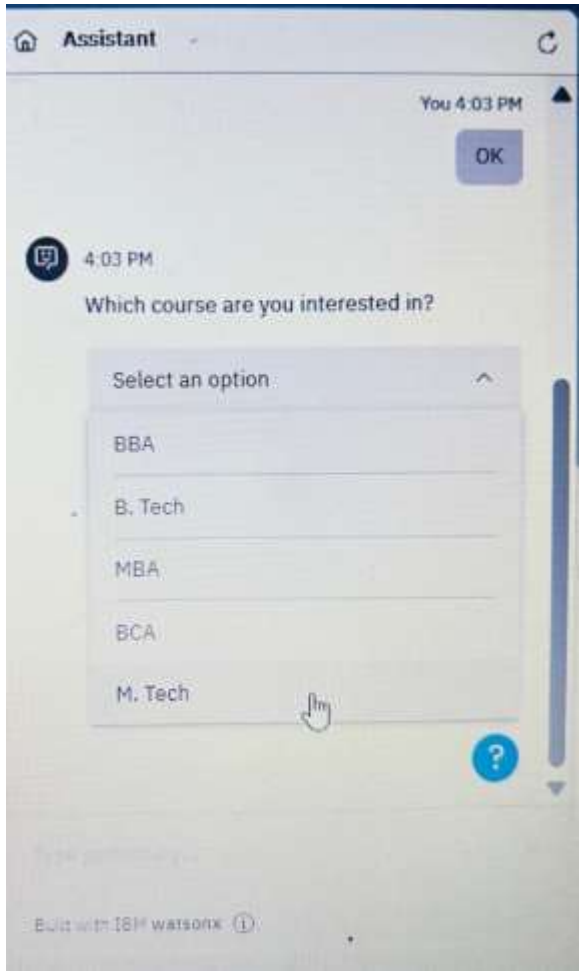
RESULT

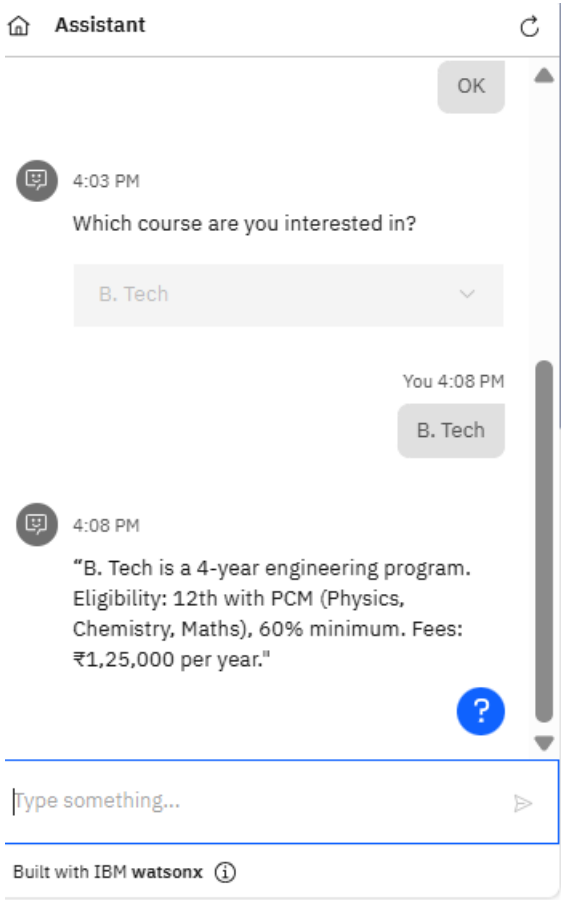
1) A functional AI-based admission assistant that answers queries with high accuracy
2) Real-time information access for students, reducing manual workload for staff
3) Enhanced admission transparency, applicant engagement, and accessibility

RESULT



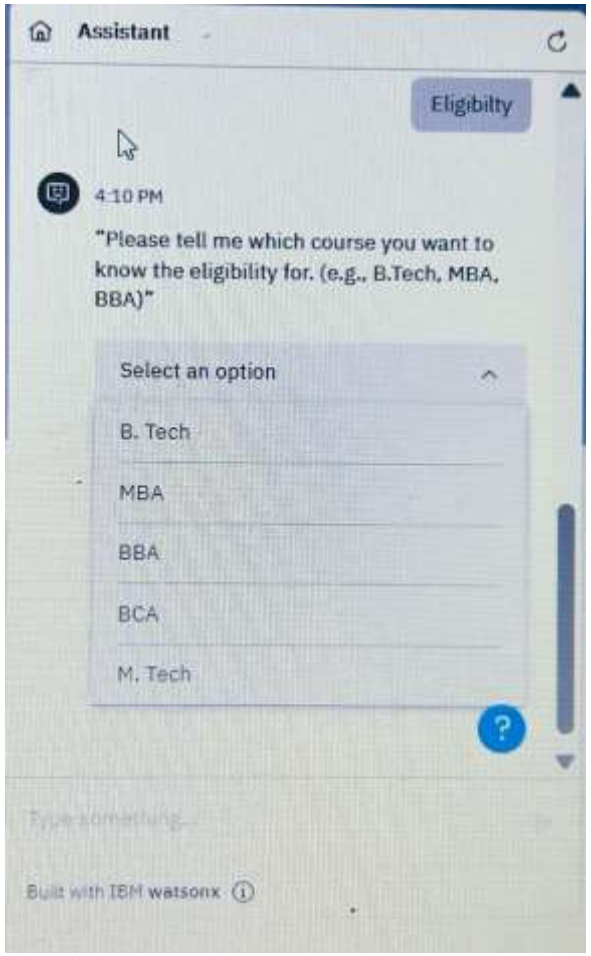


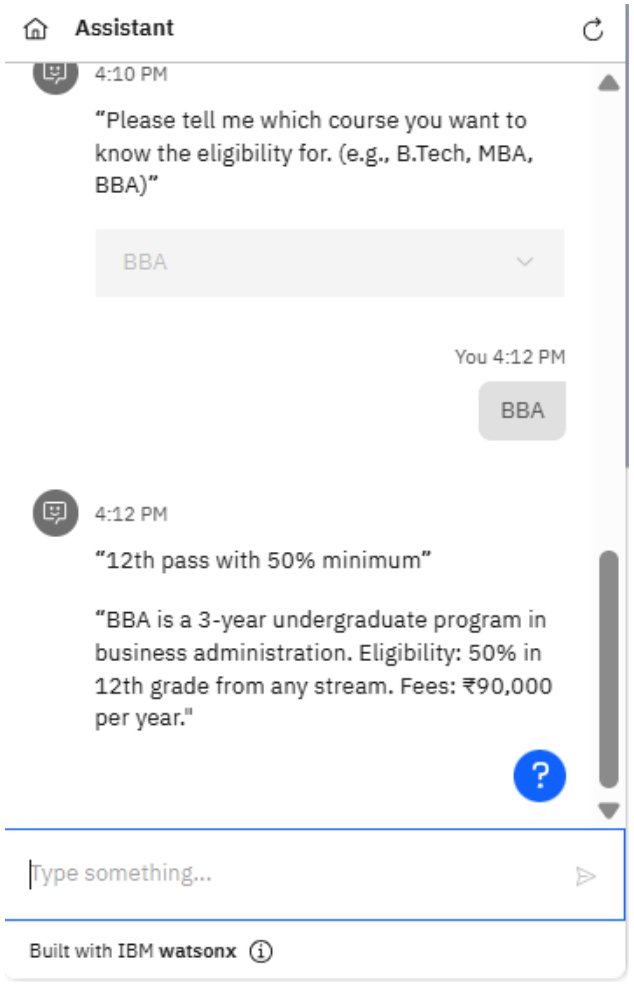


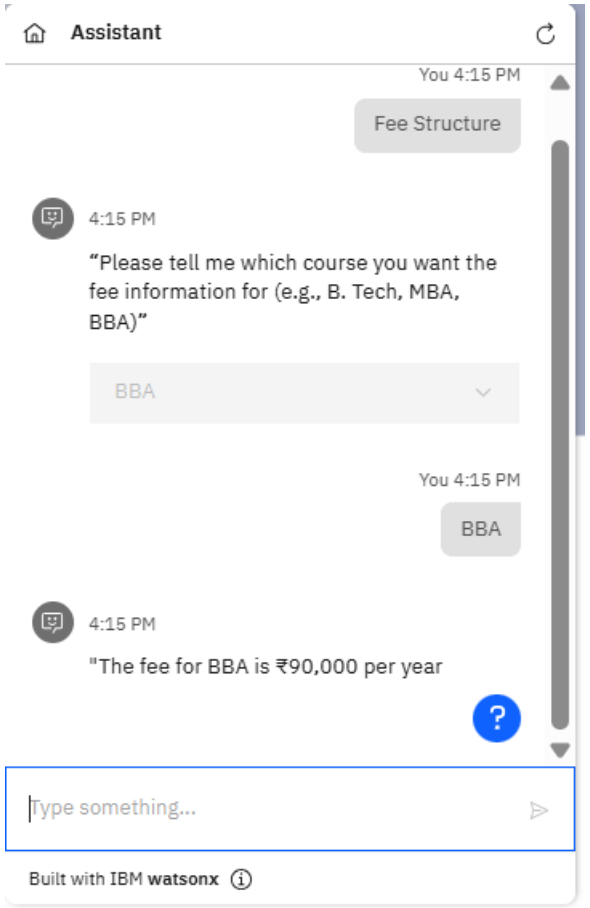


edunet foundation

RESULT

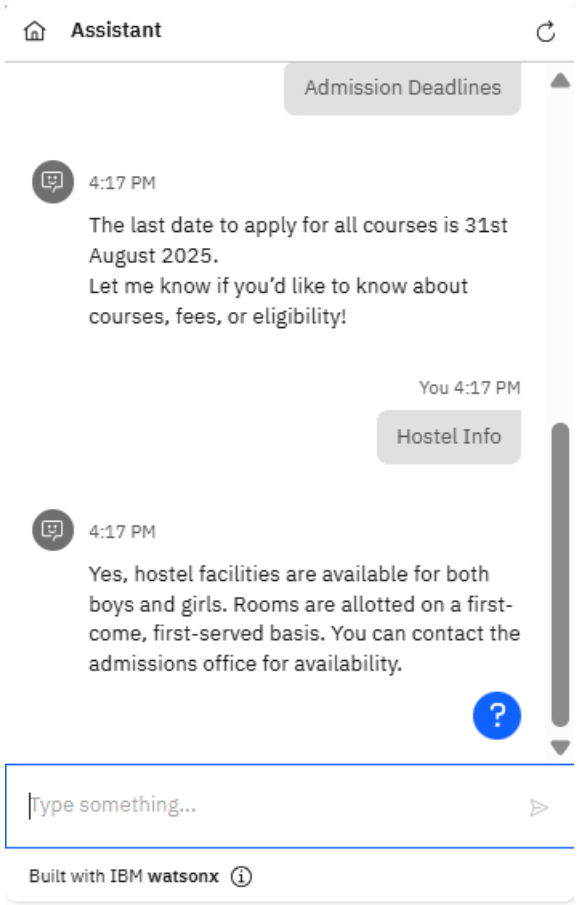


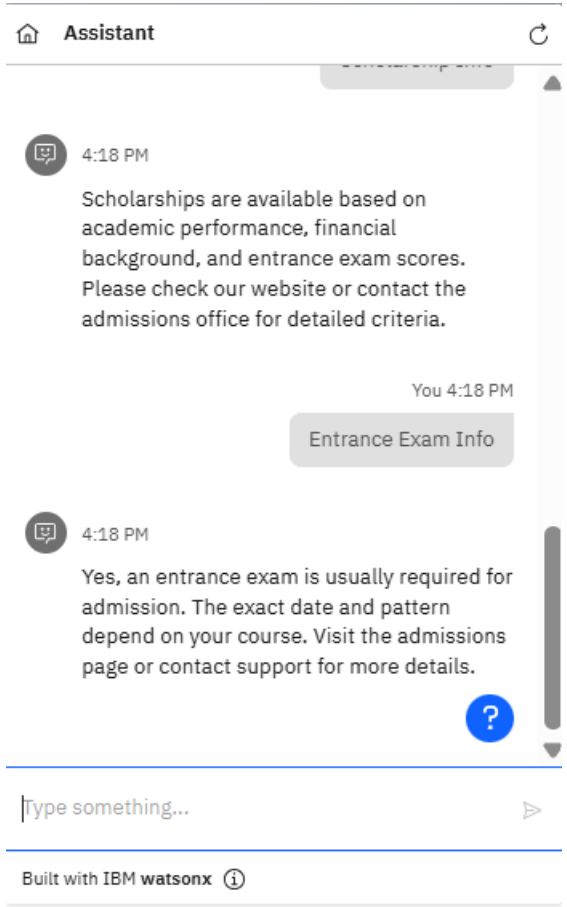


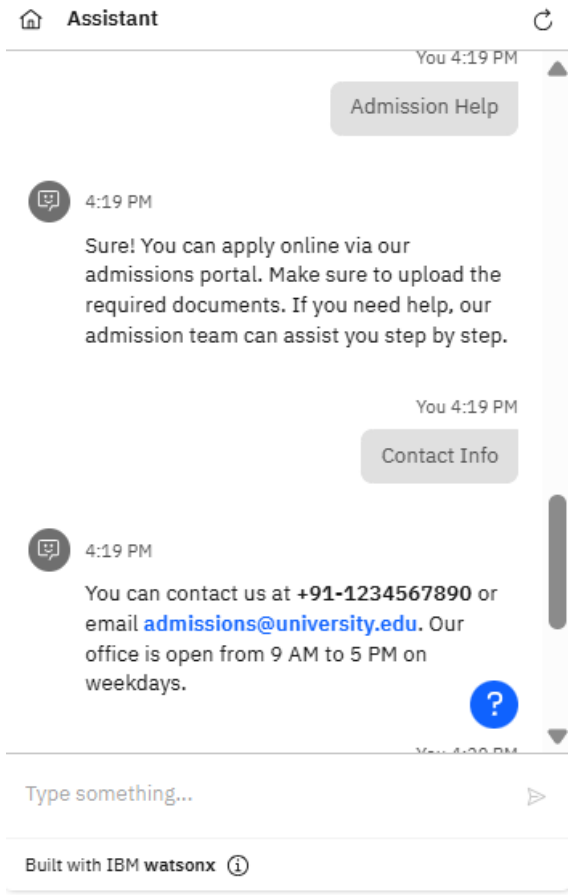


edunet foundation

RESULT







edunet foundation

CONCLUSION

- The College Admission Agent streamlines the admission process by providing accurate, instant, and context-aware responses using RAG and IBM Granite. It reduces manual workload, improves applicant experience, and enhances transparency in admissions.

FUTURE SCOPE

- Discuss potential enhancements and expansions for the system. This could include incorporating additional data sources, optimizing the algorithm for better performance, and expanding the system to cover multiple cities or regions. Consider the integration of emerging technologies such as edge computing or advanced machine learning

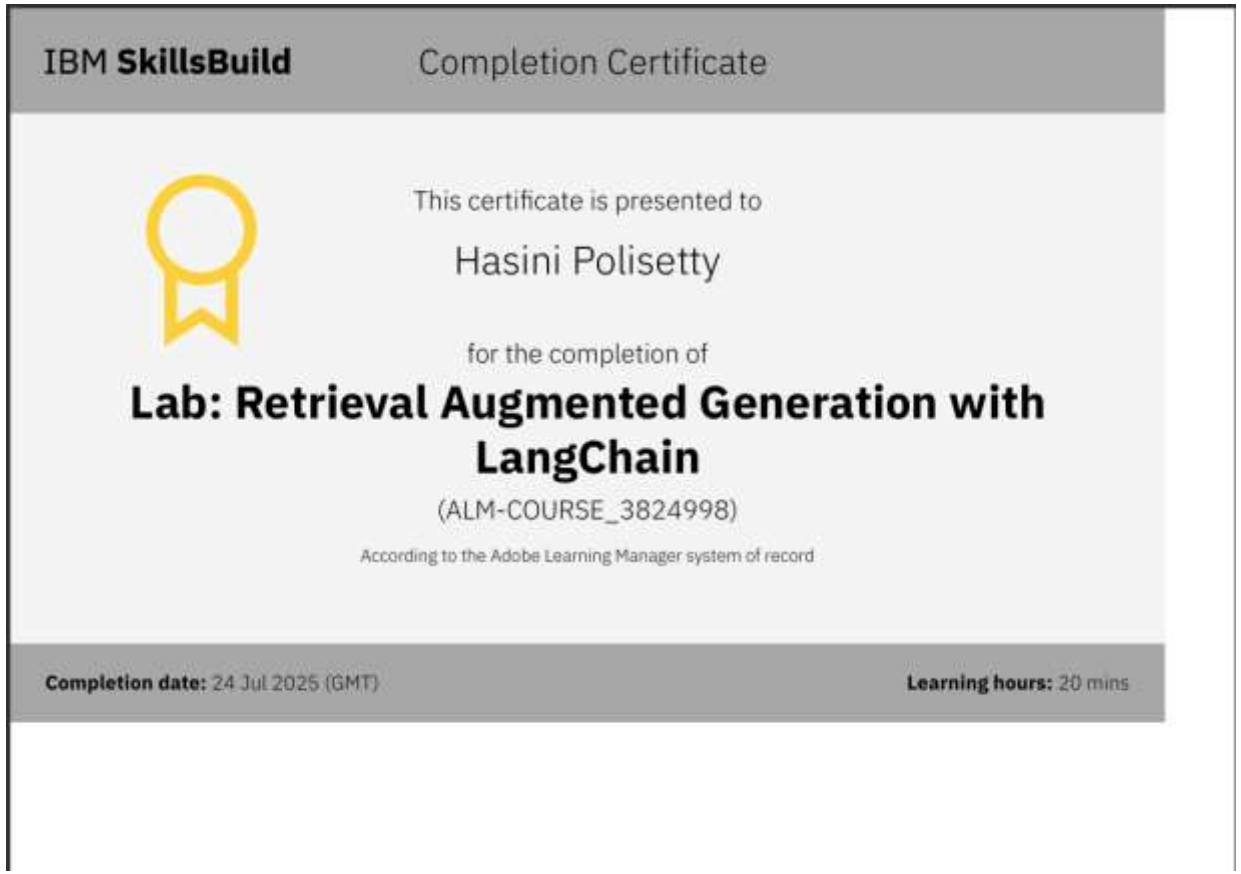
REFERENCES

- IBM Granite & Cloud Lite Documentation
- LangChain & HuggingFace (RAG Framework)
- Official College Admission Circulars
- Research on RAG (Lewis et al., 2020)

IBM CERTIFICATIONS

IBM CERTIFICATIONS

IBM CERTIFICATIONS



IBM **SkillsBuild** Completion Certificate

This certificate is presented to

Hasini Polisetty

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT) **Learning hours:** 20 mins

THANK YOU

edunet foundation