



ST. XAVIER'S COLLEGE, MAPUSA GOA

Report of Activity conducted in the Academic Year 2025-26

Name of Activity	Building AI Powered Applications
Date/ Duration	12-03-2026 / 1 Hour
Venue	Computer Science Laboratory
Name of organizing Department/Cell	Computer Science
In collaboration with	
Name/s of Faculty Co-ordinator	Ms. Sandra Fernandes
Stratum of Event	College
Name & details of Resource Person/s if any	Ms. Lucia Rodrigues, Senior Full Stack Developer, Maltego Technologies, Munich, Germany
Report	The webinar on “Building AI-Powered Applications” was conducted by Resource Person Ms. Lucia Rodrigues, who provided participants with a comprehensive introduction to modern AI-enabled web application development. The session began with an overview of full-stack architecture, explaining the roles of the frontend and backend and how technologies such as React, Vite, Express.js, Node.js, MongoDB and the Google Gemini API work together to create intelligent web applications. Ms. Rodrigues discussed key frontend concepts, including React components, the Virtual DOM, JSX, React Hooks, component lifecycle and state management, highlighting their importance in building efficient and scalable user interfaces. The session further explored backend development using Express.js, API routing, database integration with MongoDB through Mongoose and secure API key management using environment variables. Participants were introduced to the process of integrating the Google Gemini API into a web application to generate AI-powered responses, while also understanding the importance of storing chat history in a database for improved efficiency and reduced API usage. A significant portion of the webinar focused on the practical implementation of an AI Study Assistant project. The resource person demonstrated the complete workflow of the application, showing how user queries are processed through the React frontend, transmitted to the Express backend, forwarded to the Gemini AI model and stored in a MongoDB database before being displayed to the user along with previous chat history. The live coding demonstration in Visual Studio Code provided participants with valuable insights into project structure, application development, server configuration, API integration and database connectivity. The webinar also introduced participants to key Artificial Intelligence

	concepts, including AI models, AI agents and conversational AI applications, followed by an overview of GitHub Copilot as an AI-powered coding assistant. Practical guidance was provided on using Copilot for code generation, debugging, documentation, test creation and improving developer productivity, along with best practices such as effective prompt engineering, reviewing AI-generated code and responsible use of AI tools. The session concluded with a live demonstration of the completed AI Study Assistant application, illustrating its functionality from user input to AI-generated responses and database storage. The webinar successfully enhanced participants' understanding of full-stack development, AI integration and modern software development practices, equipping them with practical knowledge to build intelligent, AI-powered web applications.
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Certificate	NA