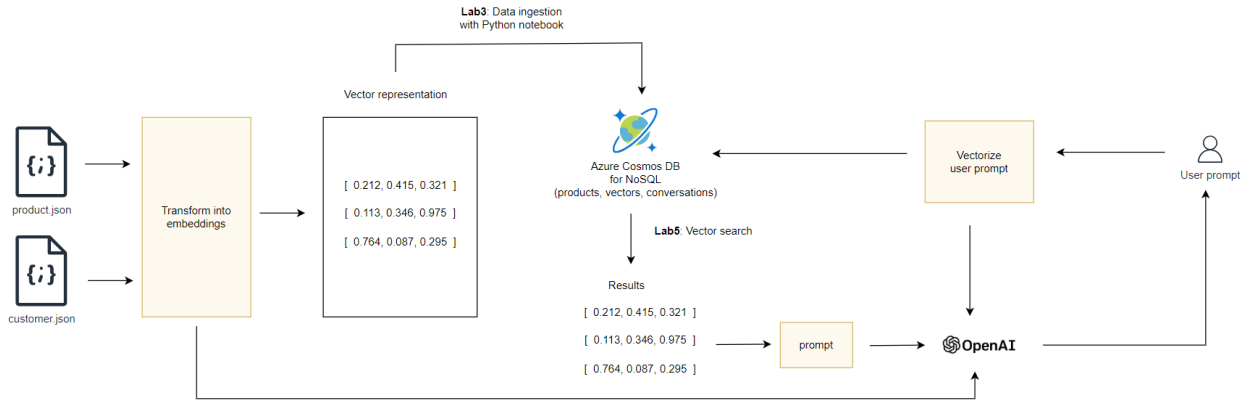
Labs Data & AI Innovation Day

Labs Overview

The purpose of these labs is to build a Retrieval Augmented Generation (RAG) system. This system can then be used to ask questions using Natural Language Queries.



Components

The following components are used to build the application:

Azure OpenAI service	Chat and embedding models inferencing
Azure Cosmos DB for NoSQL	Store products data and vector representations
Streamlit + Python	Chatbot front-end

Lab 1 – Create environment

Purpose of the lab:

- Prepare a Python virtual environment for all labs
- Create a database (one per team)
- Create a products container (one per team)

Lab 2 – Ingest data from json files

Purpose of the lab:

- Deploy Azure AI models for chat and embeddings
- Ingest json files (product.json + customer.json) into Azure Cosmos DB for NoSQL, using a Python notebook in Visual Studio Code
- Verify that data was properly ingested

Lab 3 – Create a web app using Azure AI Studio

Purpose of the lab:

- Use Azure AI Studio to deploy a web app that allows a user to query its own data
- Configure of Azure AI Studio to add your own data source
- (Optional) add voice recognition to the Azure AI Studio
- Deploy a web app front-end application

Lab 4 – Create a Python chatbot

Purpose of the lab:

- Create a Python chatbot (Streamlit application with Langchain) to query the Azure Cosmos DB for NoSQL products container, using natural language

Lab 5 – Get statistics on the Open AI Usage

Purpose of the lab:

- Create a report with powerBI desktop who will analyze the usage of your application develop in previous LAB