Cloud Machine Learning

DINH HOANG VIET PHUONG – 301123263

LAB 01

Analysis report

EXERCISE 3

1.

a, Updated architecture:

A screen shot of a computer

Description automatically generated

b,

A diagram of a software application

Description automatically generated

c,

Design decisions in a software project are driven by the need to fulfill certain requirements while considering constraints like time, cost, and maintainability.

* Service-Oriented Architecture (SOA): The decision to modularize functionality into services (Storage Service, Translation Service) promotes separation of concerns, making the system more maintainable and scalable. This approach allows for individual services to be updated or replaced without affecting the entire system:
* Testing as a Separate Component: By structuring testing as a separate component with clear interfaces to the services, we ensure that testing is an integral part of the development lifecycle, facilitating continuous integration and deployment practices.
* Use of External Translation API: Opting for an external Translation API instead of building your own translation service leverages existing robust solutions, reducing development time and potentially increasing translation quality and feature richness.
* Centralized Application Entry Point (app.py): Having a single-entry point simplifies the routing logic and centralizes request handling, which can simplify debugging and provide a clear overview of the application's capabilities.
* Static Website Front-end: Serving a static website with index.html and scripts.js minimizes server-side processing and can reduce hosting costs while ensuring fast load times for the end-user.
* Each of these decisions supports key principles of modern software engineering, such as modularity, reusability, and efficiency, and they are justified by their contribution to the robustness, scalability, and maintainability of the PictorialTranslator project.

2.

This update seamlessly integrates with existing architecture, which comprises modular services for storage, recognition, and translation. The newly introduced TextToSpeechService within chalicelib stands out by converting translated text into speech, leveraging advanced text-to-speech APIs for natural and accessible audio output. Pivotal update focuses on the /images/{image\_id}/translate-text endpoint, now enriched to not only translate but also vocalize the text from images, providing a URL to the generated speech audio. This enhancement signifies commitment to accessibility and innovation, making application more inclusive and user-friendly.

3, 4, 5, I can't download the Javascript file from Lab05 so this is what I have done so far.