ICC – Assignment 01

Submitted By

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Course Section

ICC – BSE-5A

Course Instructor

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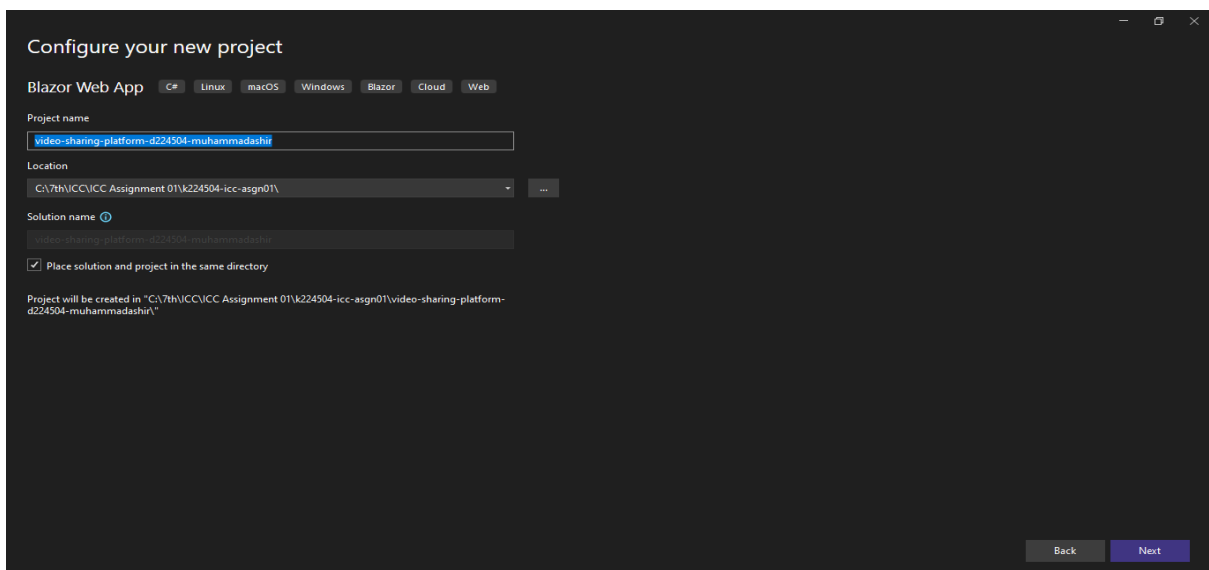
National University of Computer & Emerging Sciences

Project: FastTube – A Video Sharing Platform
Group: D

1. Setup and Configuration:

a) Configuring Visual Studio Project Folder – Blazor Web App
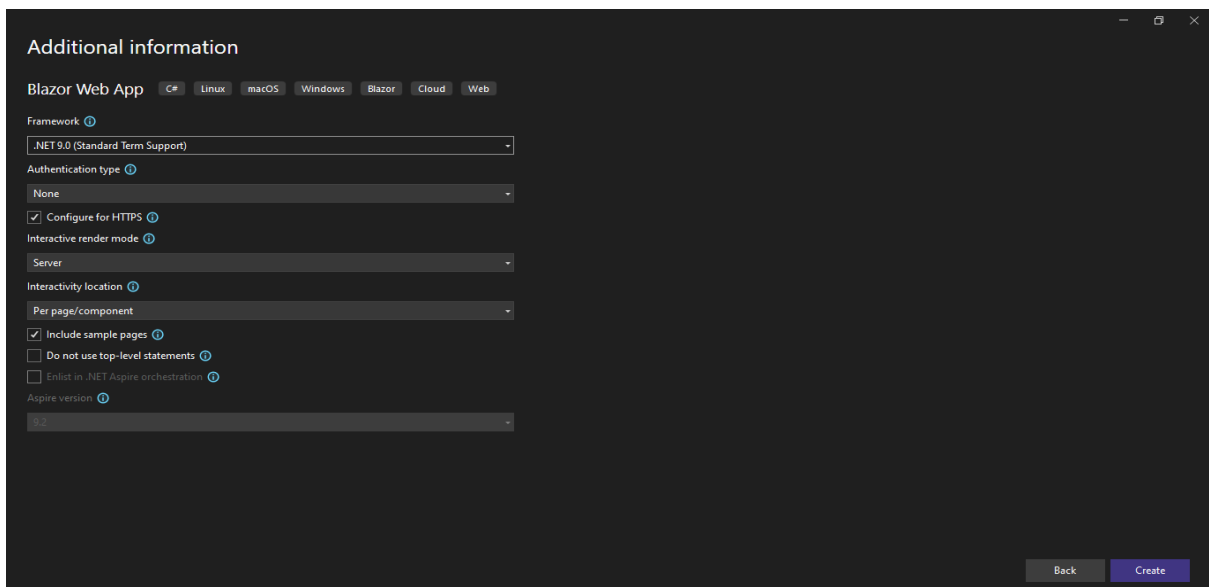
b) Configuring Framework & Protocol

c) Adding .gitignore & making Commit

d) Uploading Project to GitHub

e) Configuring Basic Azure App Service

f) Configuring Deployment Azure Service

g) All Configuration Summary

Description:

I used Microsoft Visual Studio 2022, with installing Workloads 'ASP.NET & Web Development', and 'Azure development'. Then I downloaded and installed 'dotnet-sdk-9.0.305-win-x64' for Blazor Web App Template. I created the Project with the configuration illustrated in Figures a) and b) above. For Azure Account, I used 'Azure for Students' Subscription, which provide free credits for a year. I setup am account there making new resource group, and instance. The runtime stack I used is .NET 9 Standard Term Support (STS) being the latest version released recently, and choosing Windows as OS which is normal. For region, I first tried South India being closer to my location i.e. Karachi, Pakistan, but unfortunately, it was getting failed so I ended up choosing UAE North which worked eventually. Windows Plan was generated by Azure Itself based on project name, and pricing plan was set to Free F1 as for 'Azure for Students' subscription (ref. figure 'e'). Then I integrated my GitHub account and repo (public) with azure for CI/CD Deployment. I didn't go with Basic authentication option (ref. figure 'f'). Then it provided me whole configuration summary. Upon cross-verifying all the details, I finally hit Review+Create button upon which it first created .GitHub workflow .yml file for me. This detailed configuration of the App Service, including runtime, OS, and

region, was paramount. Each setting played a vital role in tailoring the environment precisely for the Blazor Web App, ensuring optimal compatibility and performance.

2. Development of a Basic Web App:

h) Introduction Full Page Capture
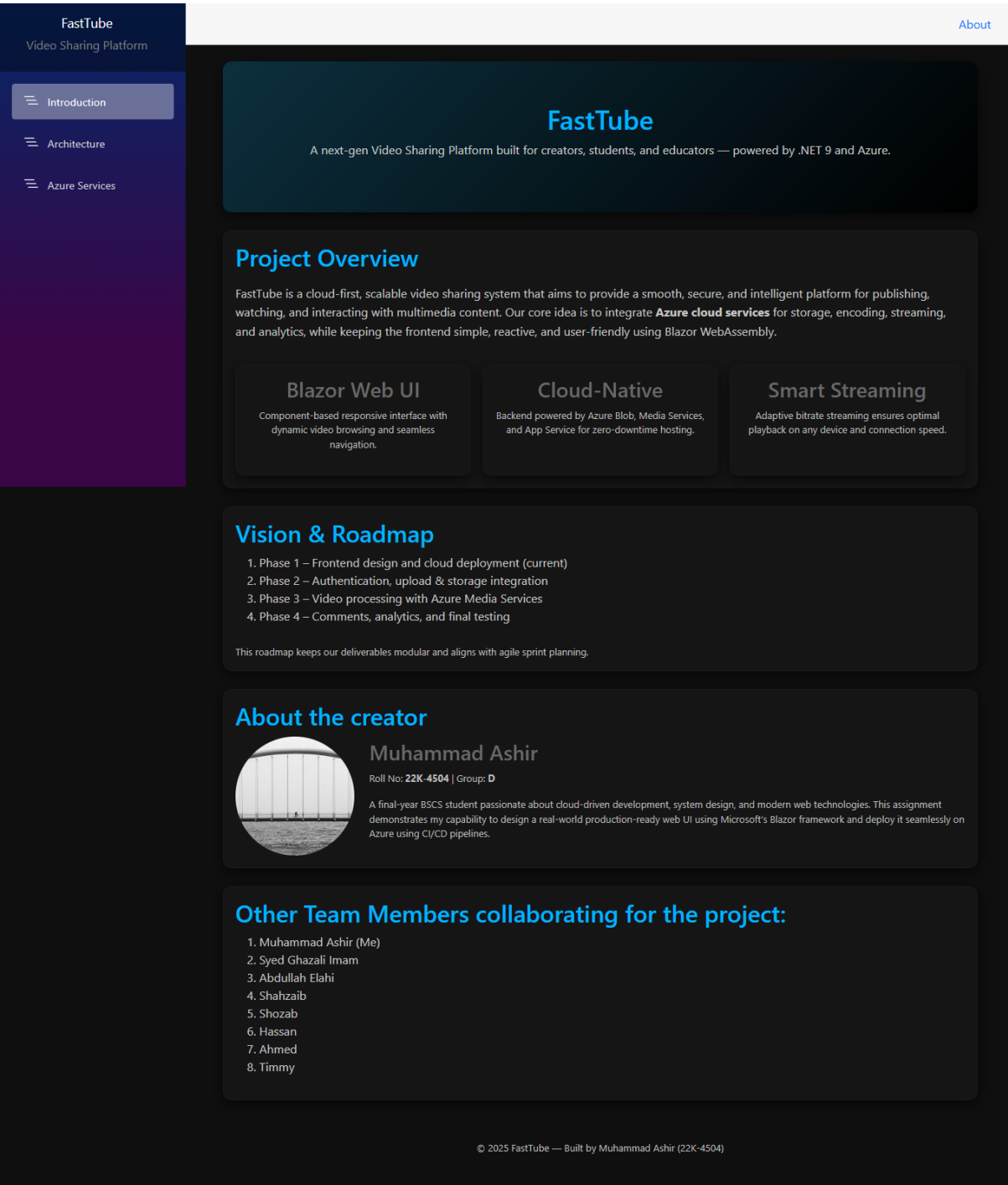
i) Architecture Full Page Capture
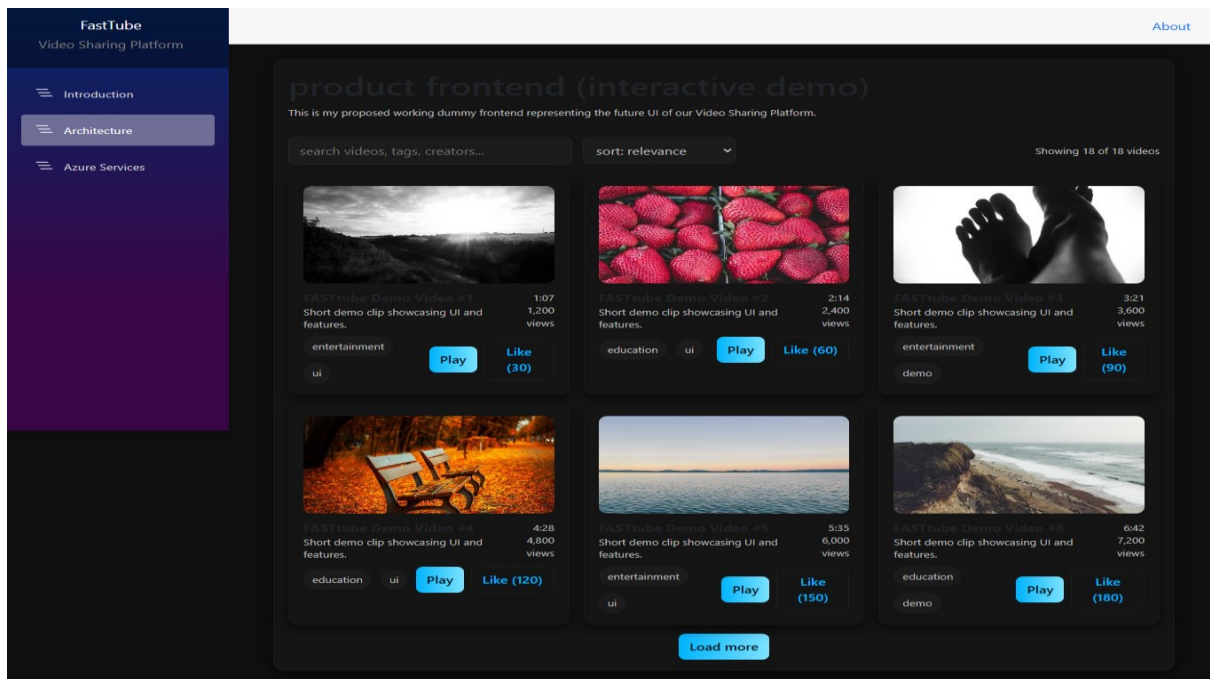
j) Azure Services Full Page Capture
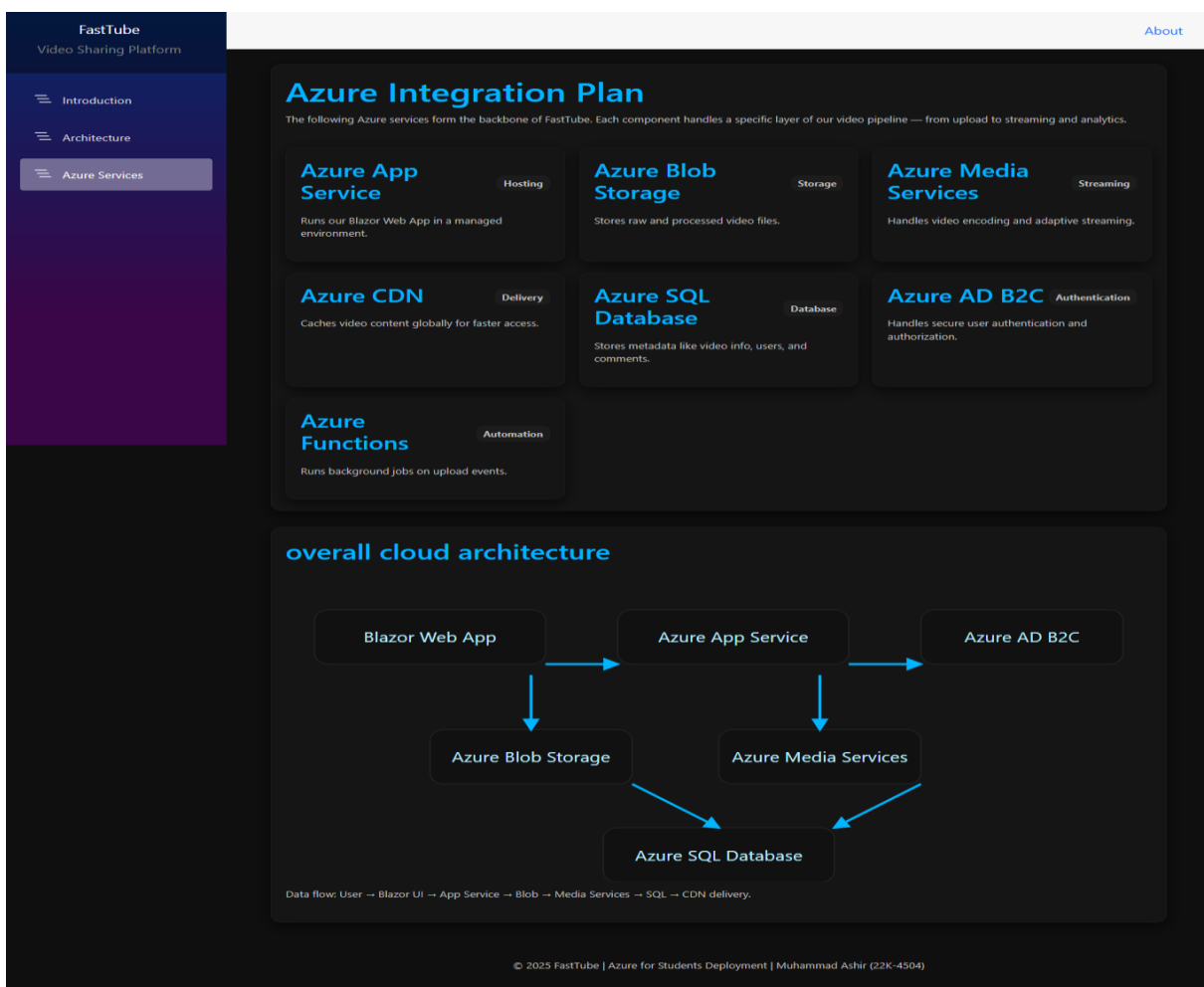
Description:

The website I've developed is a minimal, Blazor-based frontend for our video sharing platform, which I've named "FastTube." When navigating the site, I've included an Introduction page that comprehensively describes the project's vision and introduces my group members. Following this, I've designed my proposed Architecture page that provides a detailed outline of our cloud-first modular design, illustrating the planned componentization for scalability and maintainability. On this page, I also elaborate on the prospective Azure services I intend for integration, such as Azure Blob Storage for media files, Media Services for advanced streaming capabilities, and Azure Cosmos DB or SQL Database for efficient metadata management.

For the user interface, I've employed a sophisticated dark modern theme, enhancing visual appeal and user comfort. I've strategically utilized Blazor components to enable smooth, single-page application style navigation, eliminating full page reloads and providing a highly responsive experience. For this foundational assignment, my primary focus was on establishing a robust, deployable frontend and meticulously documenting our architectural blueprint, rather than fully implementing complex media upload and streaming pipelines. The successful deployment on Azure App Service, facilitated by an automated CI/CD pipeline using GitHub Actions, demonstrates my proficiency in scaffolding a .NET web app, crafting a distinct and appropriate user interface, and configuring modern cloud deployment workflows. These critical steps unequivocally showcase my team's readiness and capability to seamlessly integrate backend services in forthcoming development sprints.

3. Deploy the Web App to Azure App Service:

k) Introduction page Live Preview
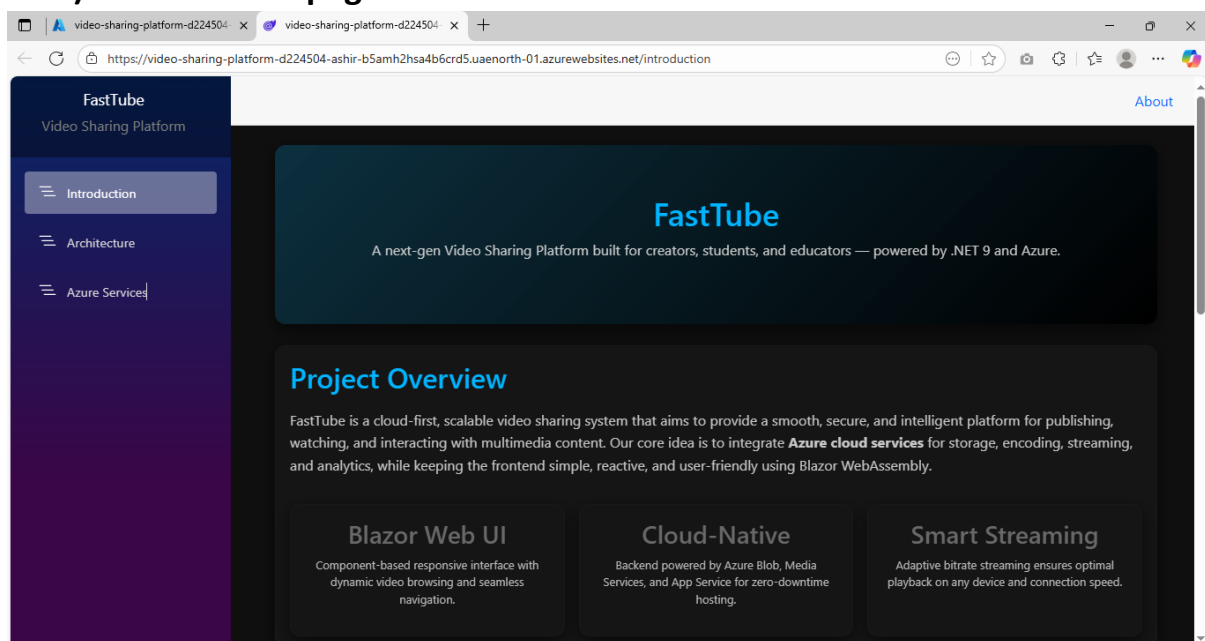
l) Architecture Page Live Preview
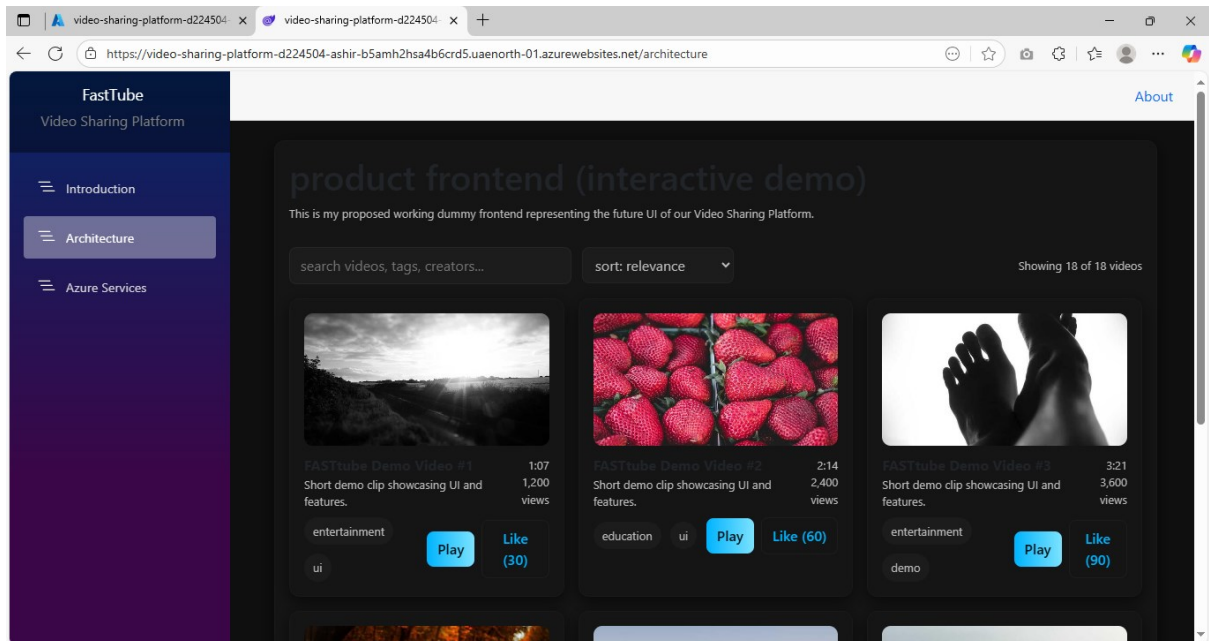
m) Azure Services Page Live Preview
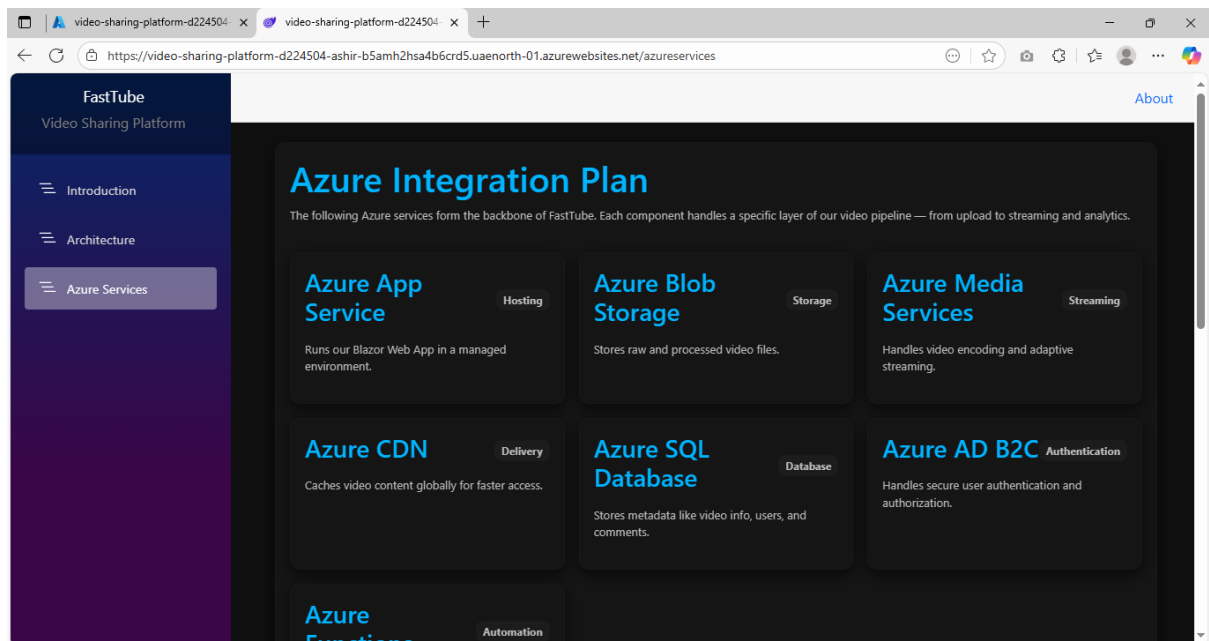
o) App Service Dashboard
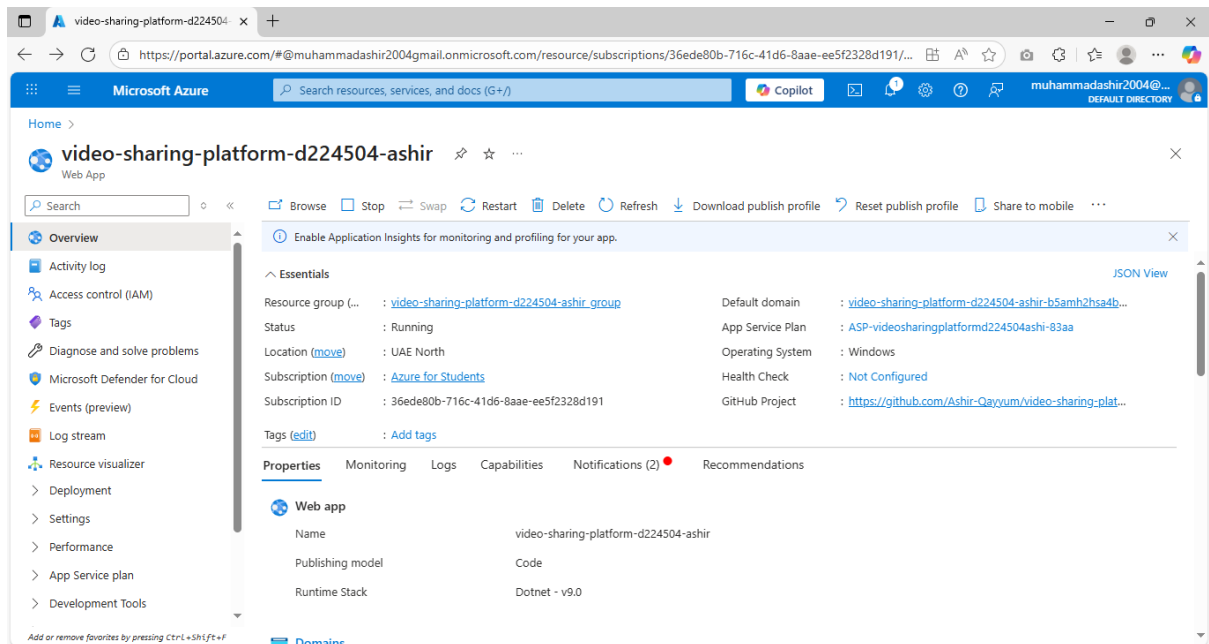
Description:

My journey to deploy the "FastTube" frontend on Azure was marked by several significant challenges, requiring persistent troubleshooting and a deeper understanding of cloud deployment architectures. Initially, I mistakenly attempted to deploy my Blazor Web App (Razor) project to an Azure Static Web App service. This fundamental mismatch led to a series of frustrating failures, as the Static Web App environment, designed for purely static content, struggled to process my server-side reliant Blazor application. I encountered an Oryx build script syntax error, which was baffling at first. Even after resolving that, a subsequent error indicated a missing index.html file, clearly signaling that the service expected a client-side SPA entry point, not the ASP.NET Core hosting my Blazor app required.

My deployment attempts often crashed, as illustrated by the red 'x' marks in my GitHub Actions workflow history, indicating continuous integration failures:
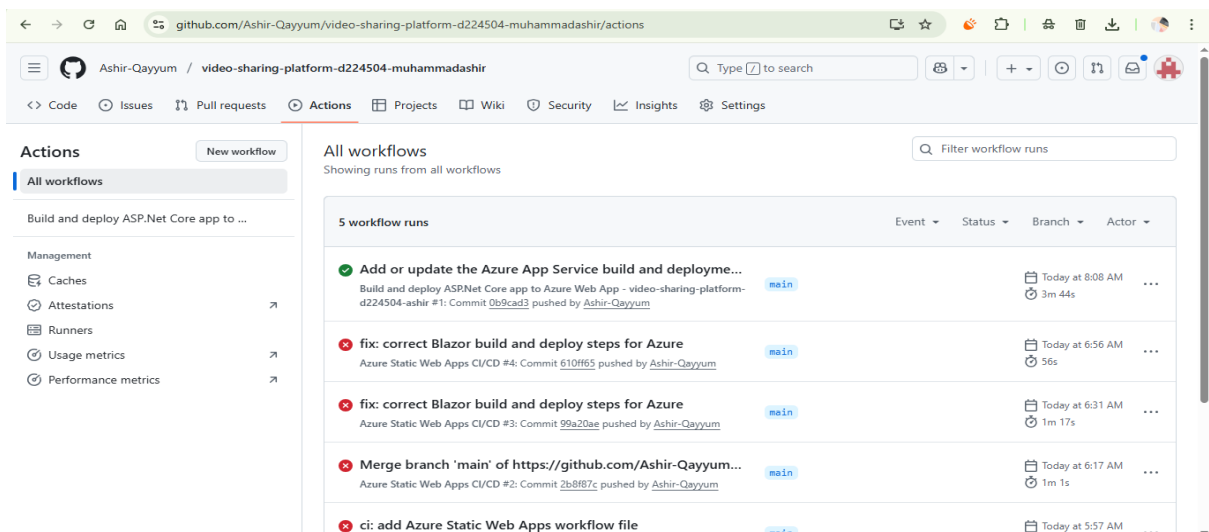
After realizing the architectural incompatibility, I decided to shift to an Azure Web App (App Service), which is the correct environment for ASP.NET Core applications. This switch initially also cause hurdles, initial issues with regional capacity in South India using my 'Azure for Students' subscription. I then tried Central Asia but it also failed, then eventually UAE North. Finally, after reviewing all the files again and again multiple times including .gitignore and .yml workflow files, it eventually started progressing and GitHub action passed the deployment, making the domain active and web got live. Overcoming these layers of complexity, from architectural choice to specific configuration details and authentication, was a significant learning experience that ultimately led to the successful deployment of my application.

Live URL for Preview:

https://video-sharing-platform-d224504-ashir-b5amh2hsa4b6crd5.uaenorth-01.azurewebsites.net

Please find the Codes and other Project Materials in the GitHub repo below:

https://github.com/Ashir-Qayyum/video-sharing-platform-d224504-muhammadashir