DevOps Project Report

Title: Build and deploy a YouTube Clone Using Azure DevOps Pipelines

By: Madhan Kumar (1CD22CS171)

▪ Abstract:

This project demonstrates the automation of building, testing, and deploying a YouTube Clone web application using Azure DevOps Pipelines. It covers the full Continuous Integration and Continuous Deployment (CI/CD) lifecycle. The pipeline is triggered automatically whenever changes are pushed to the GitHub repository, ensuring smooth and consistent deployment.

Key highlights:

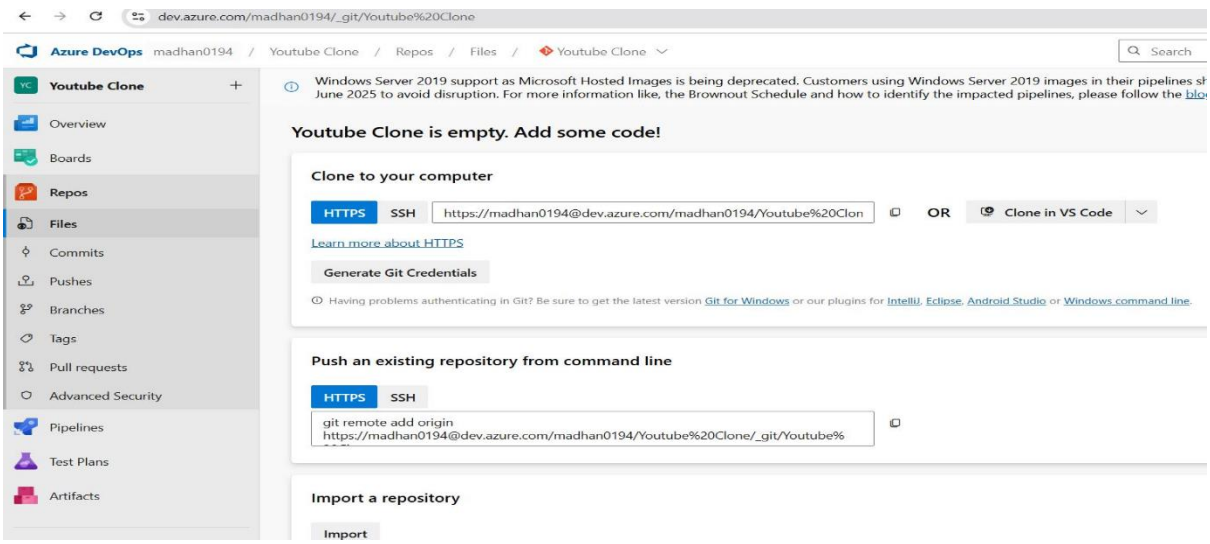
- Automates build, test, and deployment stages using Azure DevOps.
- Integrates with GitHub for version control and CI triggers.
- Deploys the app to Azure App Service (Web App for Linux).
- Uses best practices like artifact publishing and deployment slots.

This project is ideal for students and developers learning about real-world DevOps practices using Microsoft Azure.

Step-by-Step Execution Summary:

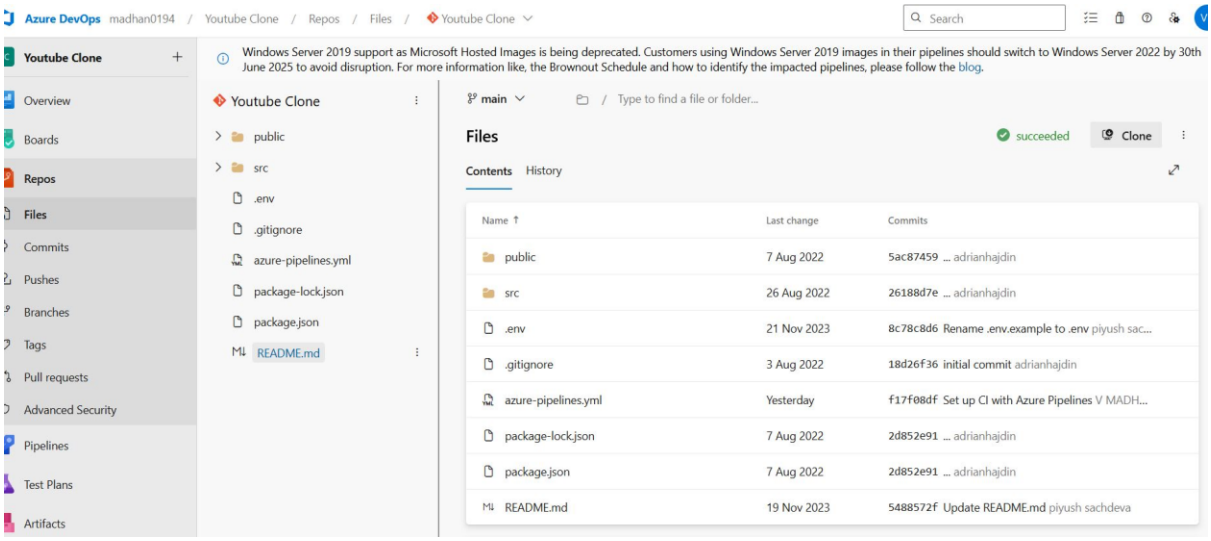
Step 1: Cloned a YouTube Clone Repository from GitHub

- Started by finding a working YouTube Clone frontend project from GitHub.
- Downloaded or cloned the project to local system for setup.



Step 2: Pushed the Project into Azure DevOps Repo

- Created a new repository in Azure DevOps.
- Pushed the cloned YouTube Clone project into this Azure DevOps repository using Git commands.

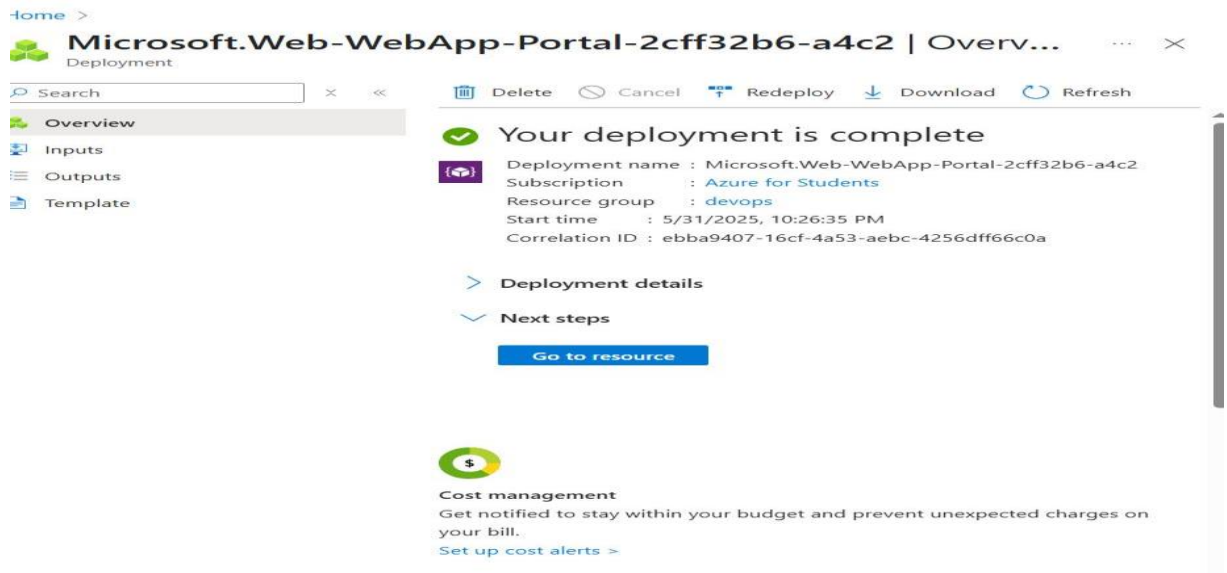


Step 3: Set Up Azure DevOps Project

- Created a new project inside Azure DevOps Portal.
- Linked the newly created Azure DevOps repo to the project.

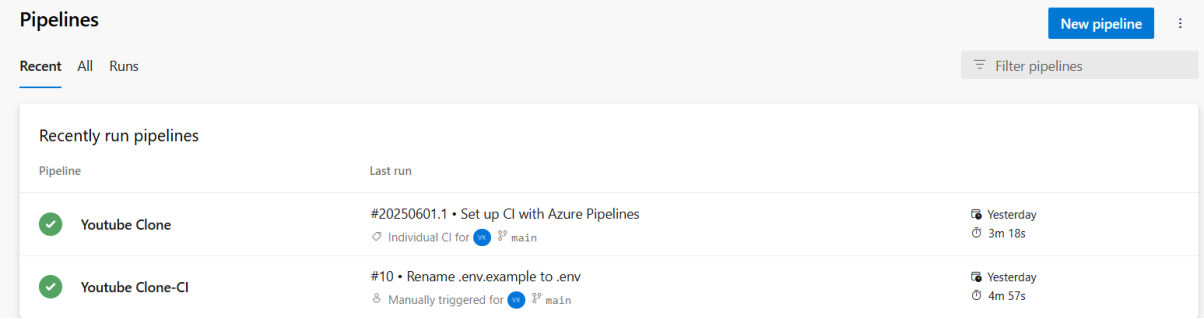
Step 4: Created Azure App Service

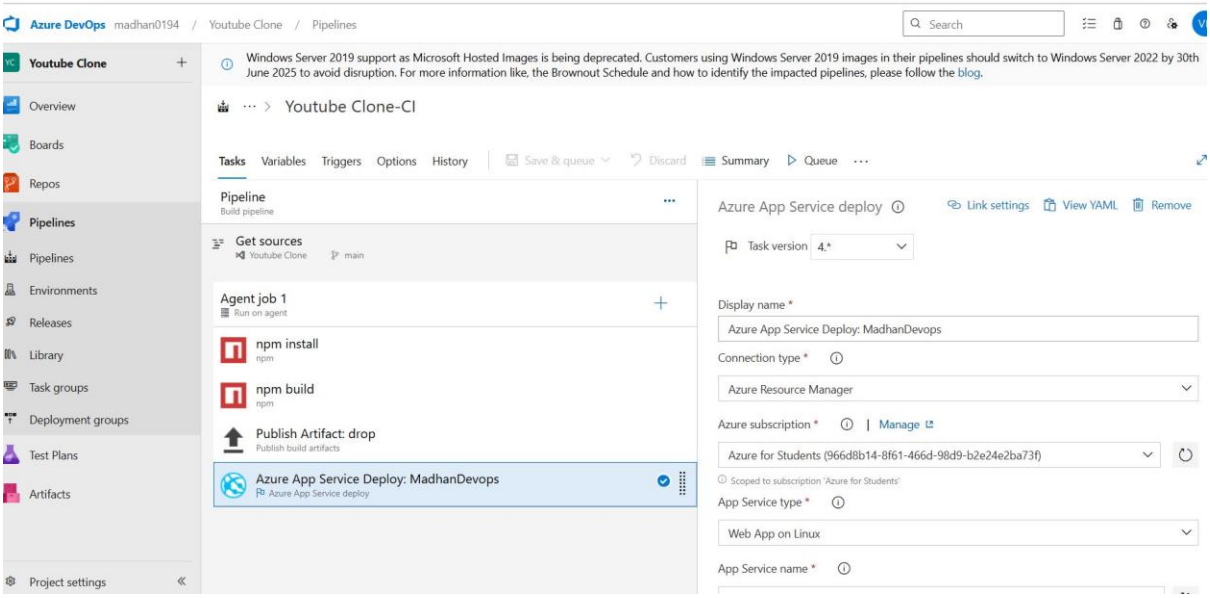
- In the Azure Portal, created an App Service with the following settings:
  - Web App on Linux
  - Runtime Stack: Node.js 18 LTS
  - Chose region and created a resource group



Step 5: Created the Azure DevOps Pipeline

- Defined a YAML pipeline file with build and deployment steps:
    - **npm install** and **npm run build** to build the project
    - Published build artifacts to a folder named drop
    - Used Azure App Service Deploy task to deploy artifacts to the App Service





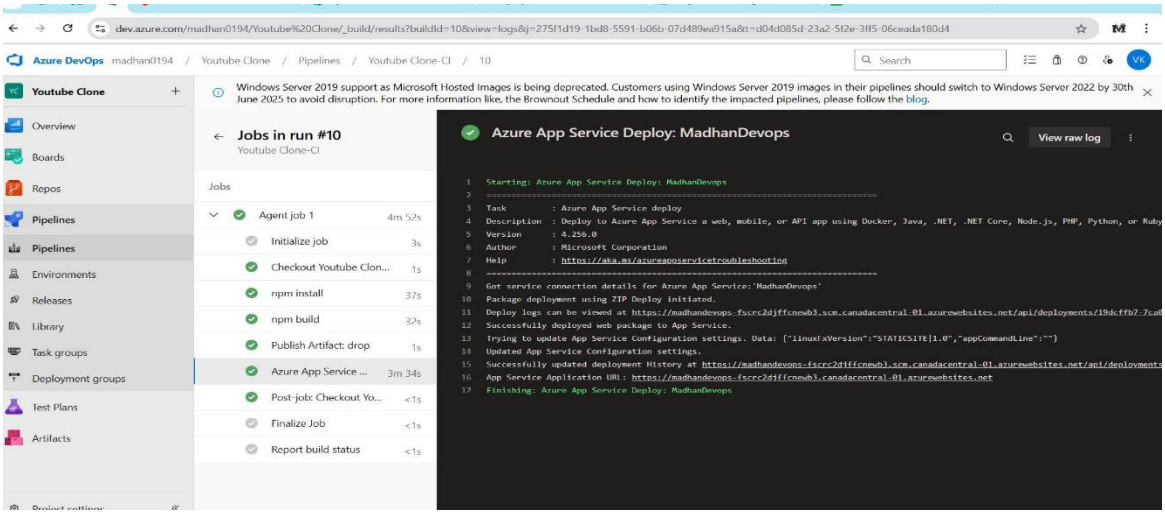
Step 6: Ran the Pipeline

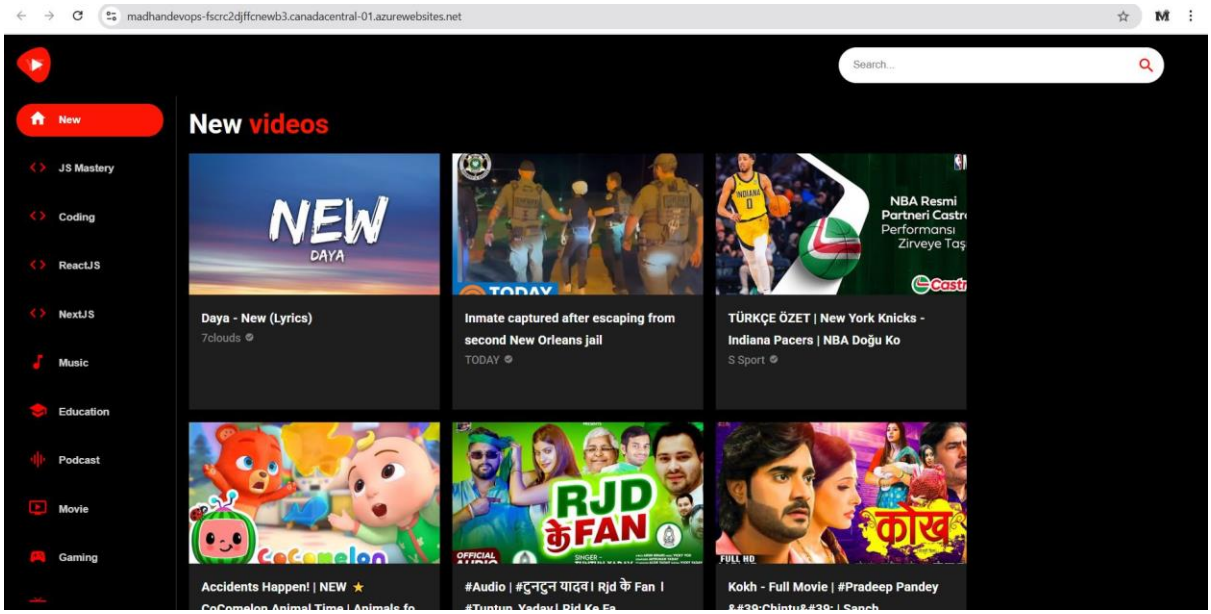
- Saved and committed the YAML file.
- Pipeline automatically triggered on push to main branch.
- All steps successfully executed: build, publish, and deploy.

Final Output:

- After the pipeline execution, the build artifacts were available.
- A deployment URL was generated from Azure App Service.

- Visiting the URL successfully shows the deployed YouTube Clone web application.





This project demonstrates a full DevOps lifecycle: from source code integration to automated build and seamless deployment using Azure DevOps tools.