DevOps Project

Deployment Pipeline of Django Application

Performed under the guidance of Mark Israel <u>marki@hit.ac.il</u>

Project Members (***)

GitHub repository 📞 🥒



Raziel Shushan - Raziel Shushan (github.com).

Matan Alter - Matan Alter (github.com).

Alissa Mochalov - Alissa Mochalov (github.com).

Ori Ronen - orironen555 (github.com).

Github repository -

RazielShushan/DevopsProject (github.com)

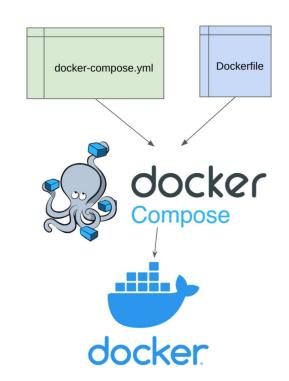
Also, for this project, we used the following GitHub repository for the Django App -

RazielShushan/DjangoLoginApp (github.com)

Project Overview

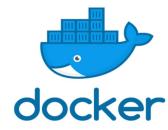
The main goal of this project was to create automated deployment pipeline for a GitHub application. There is two Git branches:

- master branch for Docker
 Compose deployment
- **kubernetes_pipeline** branch for Kubernetes deployment.



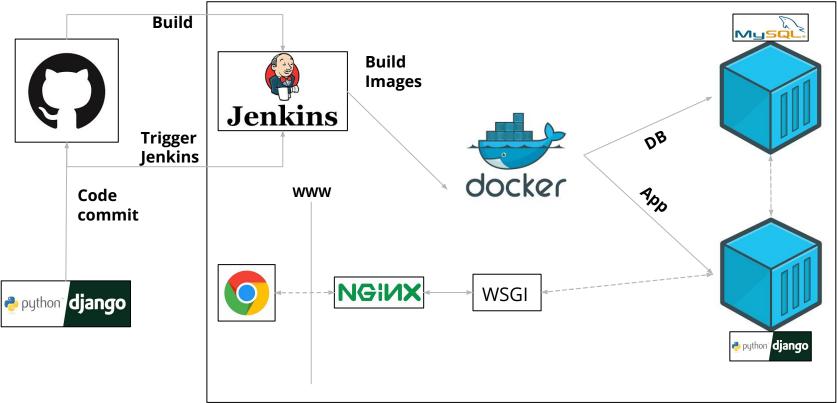






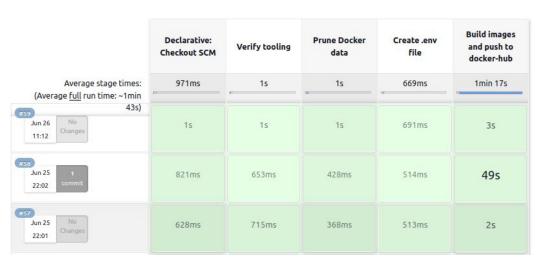
Docker Compose pipeline





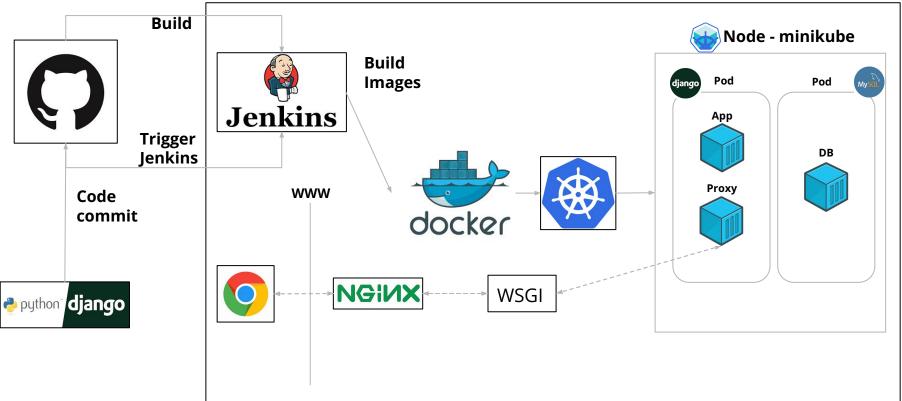
Pipeline flow for Docker compose Method

- Verify tooling: We begin by checking the presence and versions of Docker, Docker Compose, to ensure everything is properly installed and set up.
- 2. **Prune Docker data**: This stage removes any unused Docker data to free up space on our machine.
- 3. **Create .env file**: Create the .env file with the required environment variables and passwords for the Django App.
- 4. **Build images and push to docker-hub**:
 Build the Docker images for the Django
 App and its services and push them to
 Docker Hub.



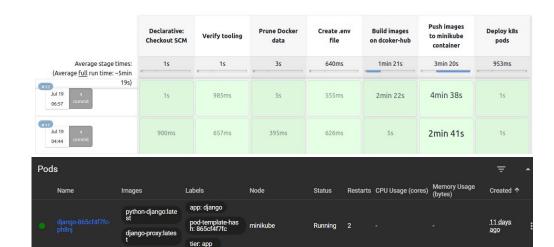
Kubernetes pipeline





Pipeline flow for Kubernetes Method

- 1. **Verify tooling**: We first check the presence and versions of Docker, Minikube, and Kubernetes CLI for proper setup.
- 2. **Prune Docker data**: This stage removes any unused Docker data to free up space on our machine.
- Create .env file: Create the .env file with the required environment variables and passwords for the Django App.
- 4. **Build images on docker-hub**: Build the Docker images for the Django App and tag them accordingly for use in Kubernetes.
- 5. **Push images to minikube container**: The Docker images are loaded into the Minikube container for deployment.
- 6. **Deploy k8s pods**:Finally, we apply the Kubernetes deployment files to deploy the Django App using Minikube.



11 days

app: django

tier: mysql