**Test locally with Docker:**

*docker build -t <folder\_name>:local .*

*docker run --rm -p 8501:8501 --env-file .env <folder\_name>:local*

*# open* [*http://localhost:8501*](http://localhost:8501)

**Azure resources (one-time setup):**

## Variables

*RG=<your-resource-group-name>*

*LOCATION=<region>*

*ACR\_NAME=<youracr12345> # must be globally unique, lowercase*

*PLAN\_NAME=<plan-name>*

*WEBAPP\_NAME=<web-app-name> # unique in Azure*

*IMAGE\_NAME=<image-name> # repository name inside ACR*

## Create resource group

*az group create -n $RG -l $LOCATION*

## Create Azure Container Registry (ACR)

*az acr create -n $ACR\_NAME -g $RG --sku Basic*

*ACR\_LOGIN\_SERVER=$(az acr show -n $ACR\_NAME -g $RG --query "loginServer" -o tsv)*

## Enable admin user

*az acr update -n $ACR\_NAME --admin-enabled true*

*ACR\_USERNAME=$(az acr credential show -n $ACR\_NAME --query "username" -o tsv)*

*ACR\_PASSWORD=$(az acr credential show -n $ACR\_NAME --query "passwords[0].value" -o tsv)*

## Create App Service plan (Linux)

*az appservice plan create -n $PLAN\_NAME -g $RG --is-linux --sku B1*

## Create Web App for Containers

*az webapp create -n $WEBAPP\_NAME -g $RG --plan $PLAN\_NAME --runtime "PYTHON|3.11"*

## Configure container settings (image will be set by CI later; set port now)

*az webapp config appsettings set -g $RG -n $WEBAPP\_NAME --settings WEBSITES\_PORT=8501 APP\_ENV=prod*

# #Optional: turn on logging retention

*az webapp log config -g $RG -n $WEBAPP\_NAME --web-server-logging filesystem --retention-days 7*

**GitHub secrets for CI/CD:**

In your GitHub repo → **Settings → Secrets and variables → Actions → New repository secret**:

* AZURE\_CREDENTIALS — Service principal JSON (for azure/login).
* ACR\_USERNAME — from command above.
* ACR\_PASSWORD — from command above.

To obtain the service principal JSON, run below code in your Azure CLI:

SUB\_ID=$(az account show --query id -o tsv)

SP\_JSON=$(az ad sp create-for-rbac \

--name "gh-sp-titanic-mlops" \

--role contributor \

--scopes /subscriptions/$SUB\_ID \

--sdk-auth)

echo "$SP\_JSON"

Copy that entire JSON into the AZURE\_CREDENTIALS secret.

Also add repository **variables** (Settings → Secrets and variables → *Secrets*):

* AZ\_SUBSCRIPTION\_ID = your subscription id ($SUB\_ID)
* AZ\_RESOURCE\_GROUP = mlops-rg (or your RG)
* AZ\_REGION = eastus (or your region)
* ACR\_NAME = your ACR name
* ACR\_LOGIN\_SERVER = youracr12345.azurecr.io
* WEBAPP\_NAME = your web app name
* IMAGE\_NAME = titanic-mlops

Those credentials are:

* **ACR\_USERNAME** → the login username for your Azure Container Registry.
* **ACR\_PASSWORD** → the password/token for that user.

You generate them with this command (after creating the ACR):

# Replace with your ACR name

*az acr update -n <ACR\_NAME> --admin-enabled true*

*az acr credential show -n <ACR\_NAME>*