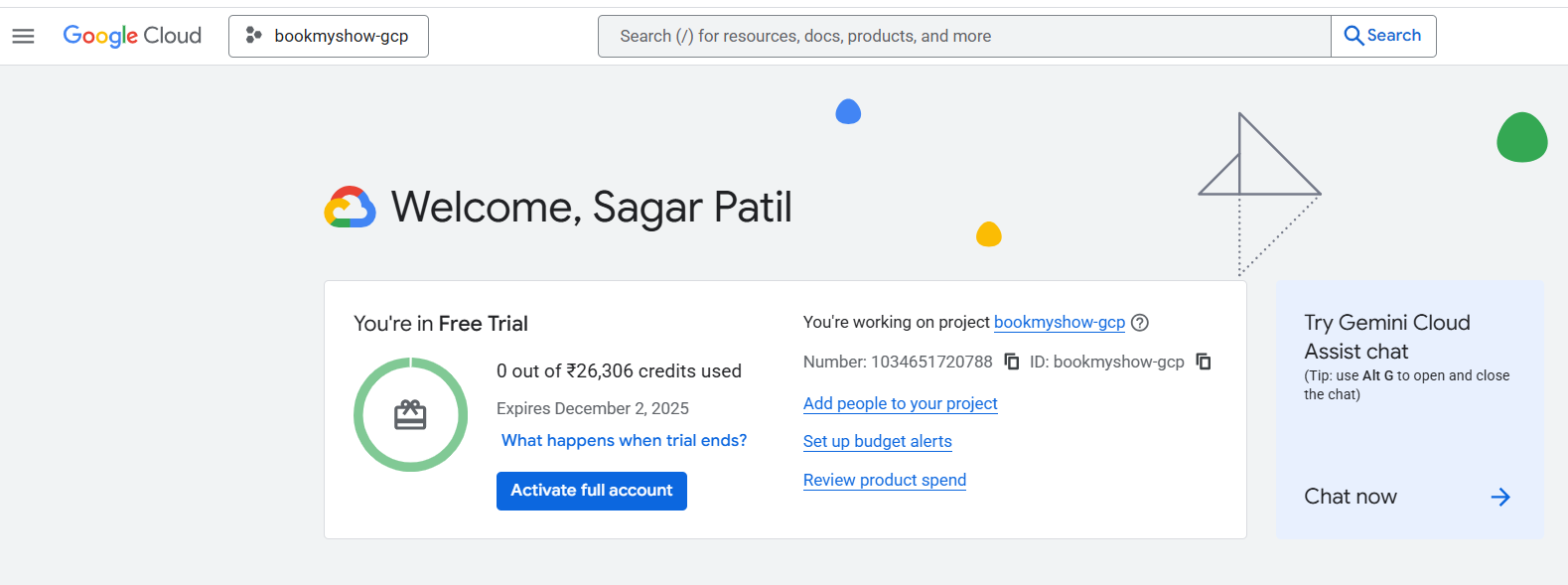
* **BookMyShow GCP Project**

**Task 1 – Setup GCP Project**

* **Console Steps**

1. Open Google Cloud Console.
2. Click **Select Project → New Project**
   * Name: bookmyshow-gcp
   * Save the **Project ID** (e.g., bookmyshow-gcp).
3. Enable required APIs:
   * **Compute Engine**
   * **Cloud Run**
   * **Cloud SQL Admin**
   * **Artifact Registry**
   * **Cloud Build**



* Create Bucket :

1. Using console CLI

gsutil mb -p bookmyshow-gcp -c STANDARD -l asia-south1 -b on gs://bookmyshow-terraform-state/



* **Install** Google Cloud CLI on windows .

<https://cloud.google.com/sdk/docs/install>

* Install **Terraform** on Windows

<https://developer.hashicorp.com/terraform/install#windows>

* **Install** Git on Windows

<https://git-scm.com/downloads/win>

1. **Google CLI Project Configuration**

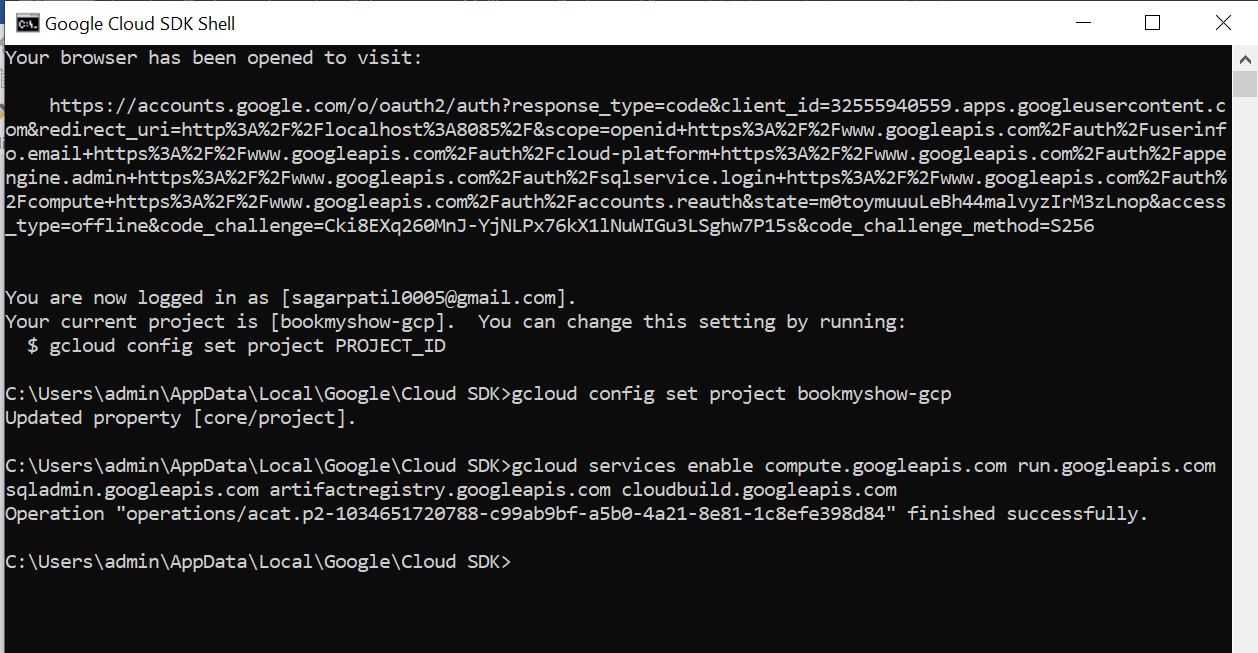
gcloud auth login

gcloud config set project bookmyshow-gcp

gcloud services enable compute.googleapis.com \

run.googleapis.com sqladmin.googleapis.com \

artifactregistry.googleapis.com cloudbuild.googleapis.com



**Task 2 – Clone Repo & Init Terraform**

* **Google CLI**

git clone https://github.com/sagarpatilbox/bookmyshow-project-gcp.git

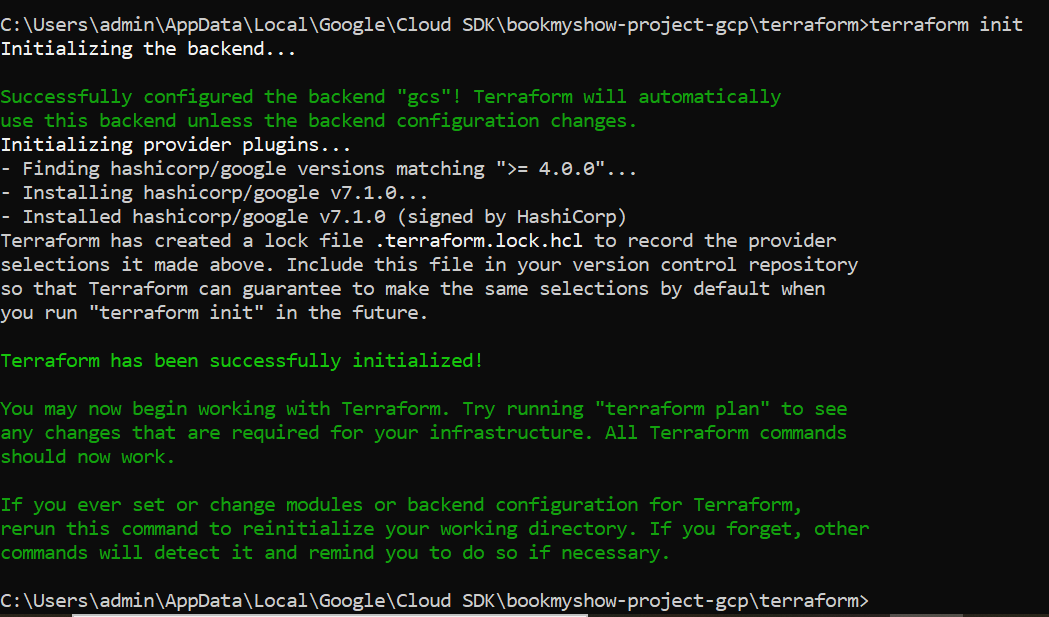
cd bookmyshow-project-gcp\terraform

* **Authentication :**

gcloud auth application-default login --project=bookmyshow-gcp

* **Terraform INIT**

terraform init



**Task 3 – Configure Variables**

* **Edit terraform.tfvars:**

project\_id = "bookmyshow-gcp"

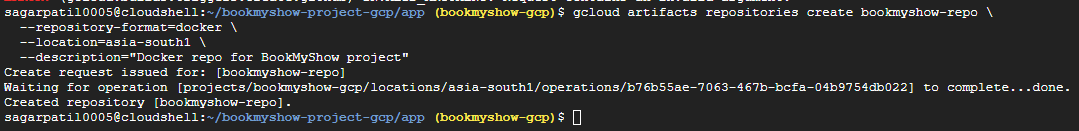
region = "asia-south1"

app\_image = "asia-south1-docker.pkg.dev/bookmyshow-gcp/bookmyshow-repo/app:latest"

db\_password = "ChangeMe123!"

use\_read\_replica = true

* **Repo Create :**

****

**Project Deployment Steps**

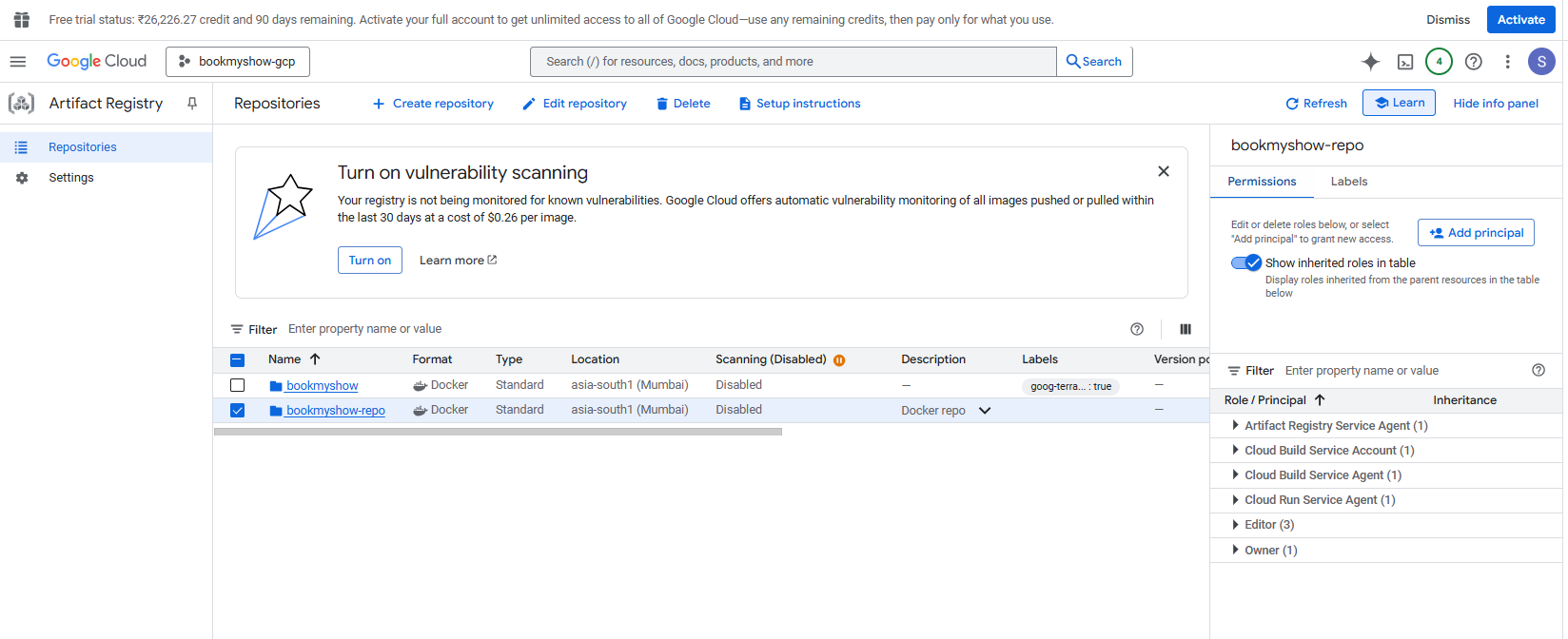
**Task 4 – Provision Core Infra**

* **Run the following command:**

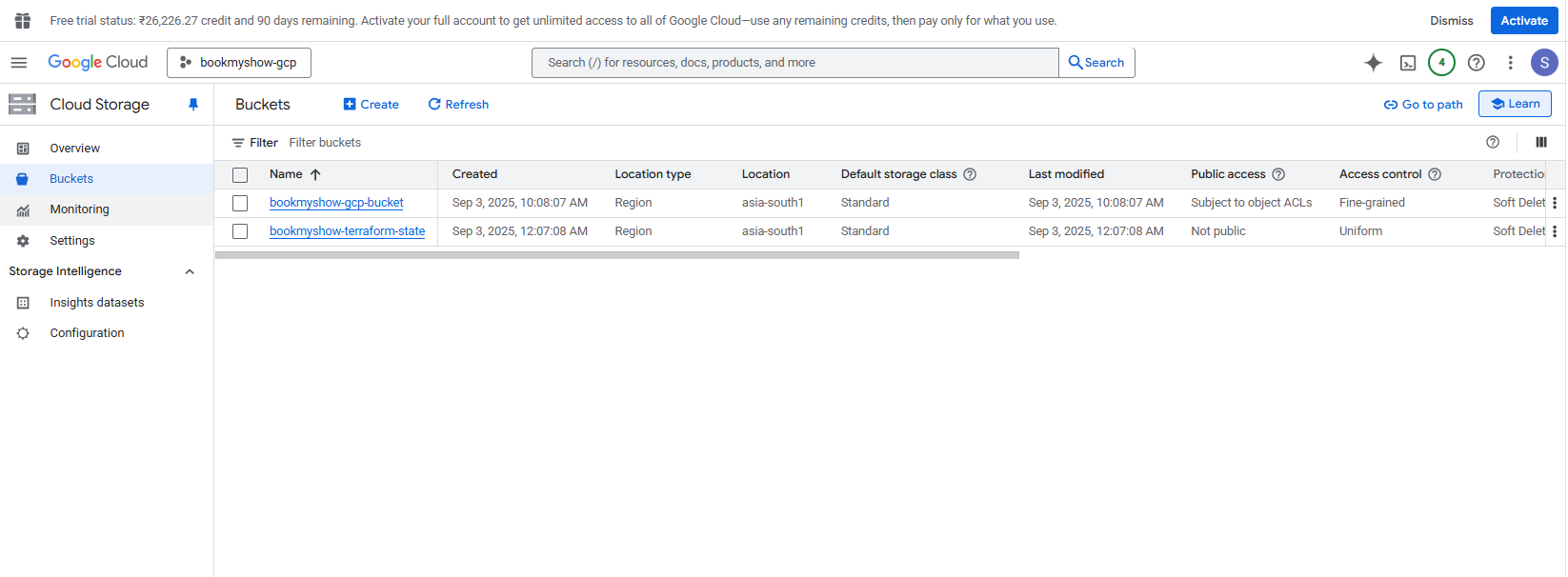
terraform apply -auto-approve

This provisions all **core infrastructure** defined in the following .tf files:

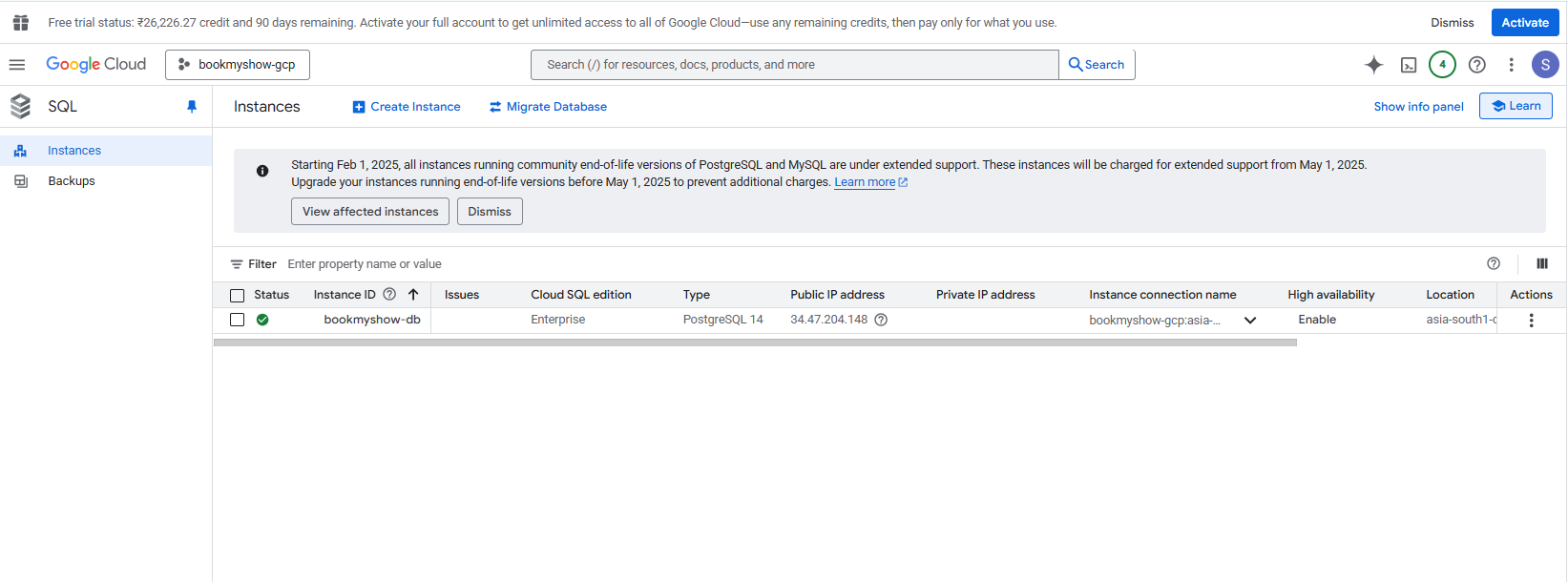
* artifact.tf → **Artifact Registry**
* bucket.tf → **GCS Bucket**
* sql.tf → **Cloud SQL (Postgres)**
* redis.tf → **Redis (MemoryStore)**
* connector.tf → **VPC Access Connector**
* cloudrun.tf → **Cloud Run Service**
* **Artifact Registry repo**



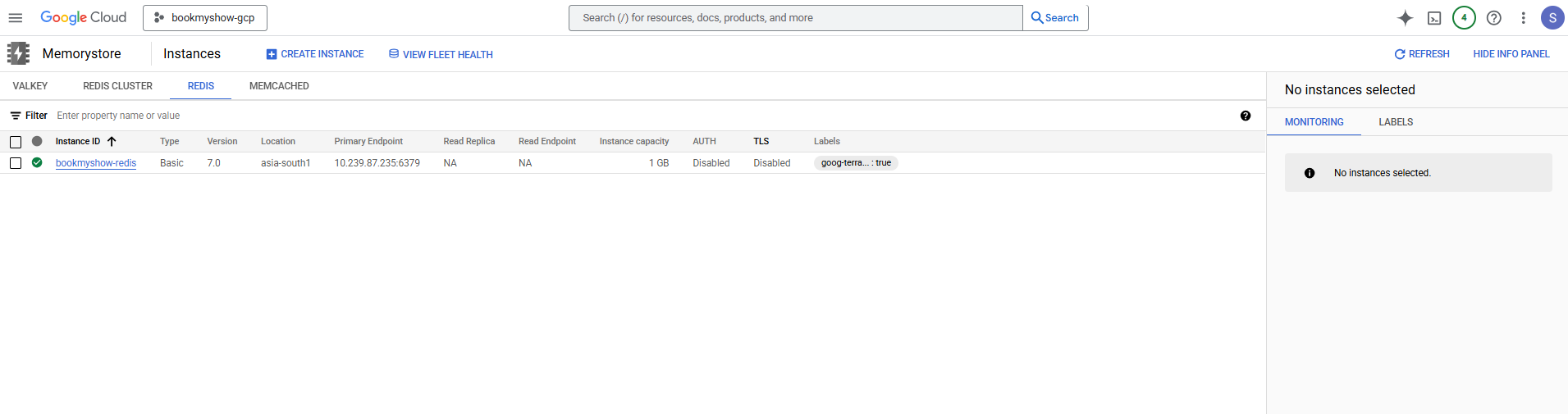
* **GCS bucket**



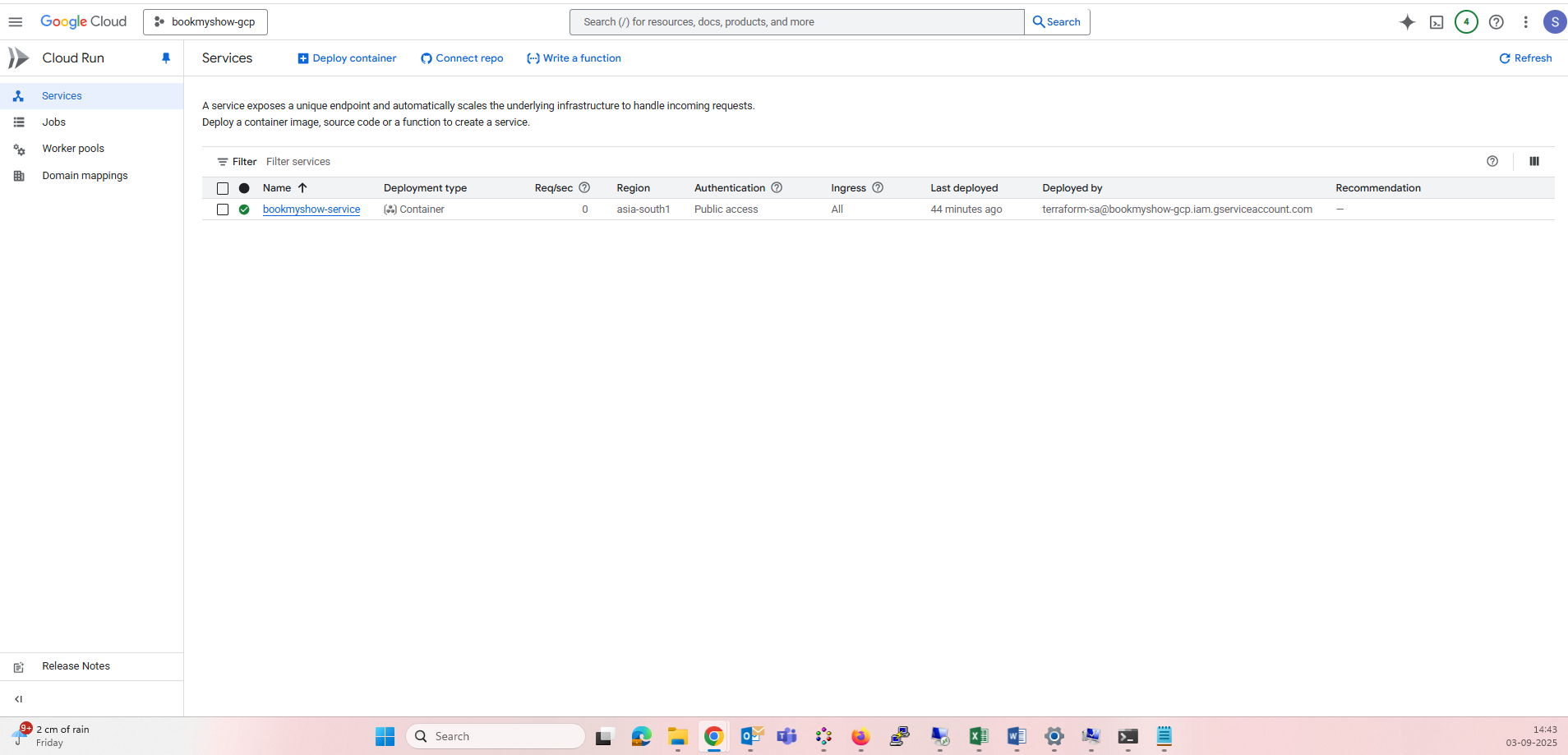
* **Cloud SQL instance**



* **Redis instance**



* **Cloud Run service running**

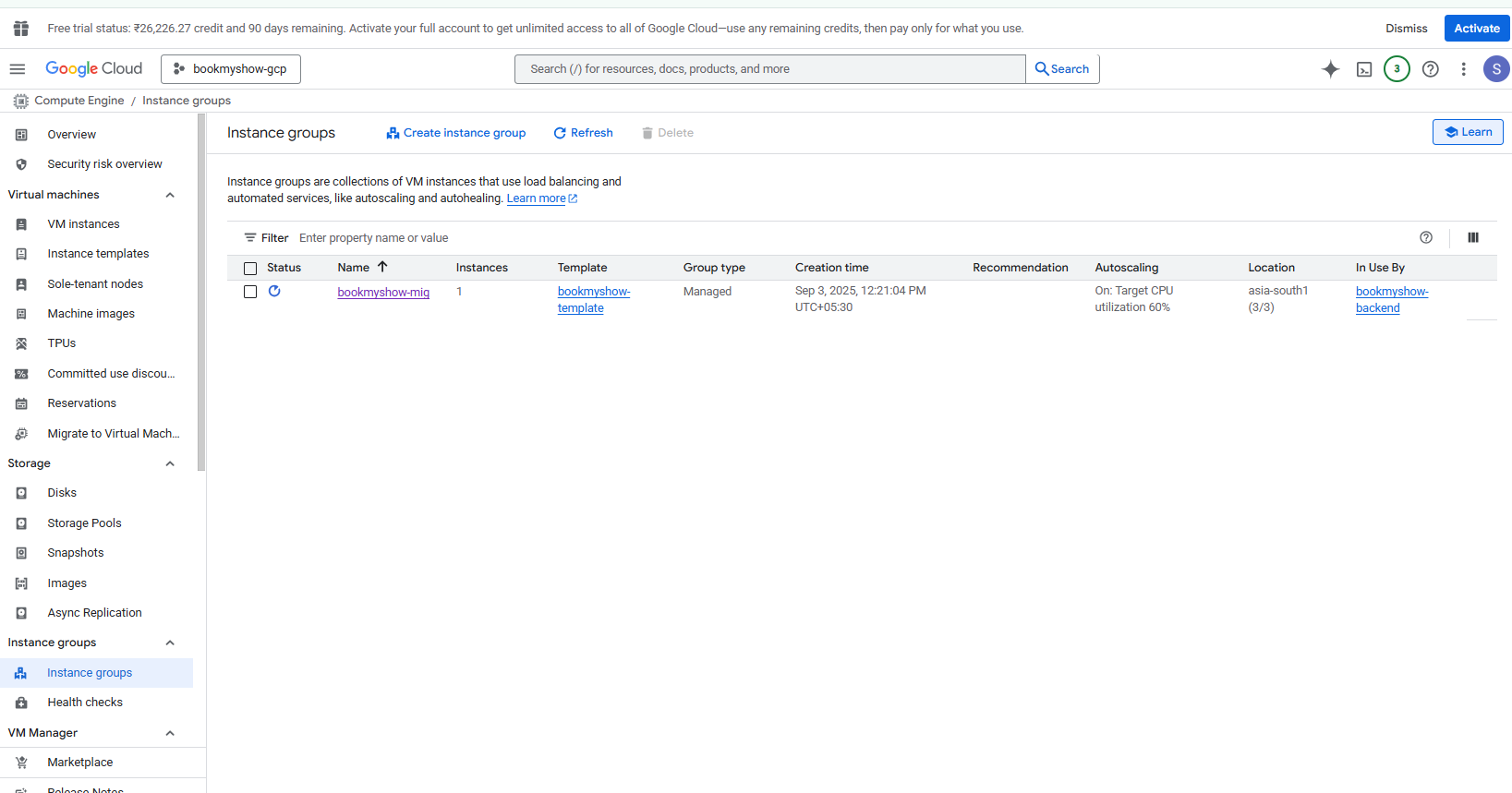


**Task 5 – VM Scaling (MIG + Load Balancer)**

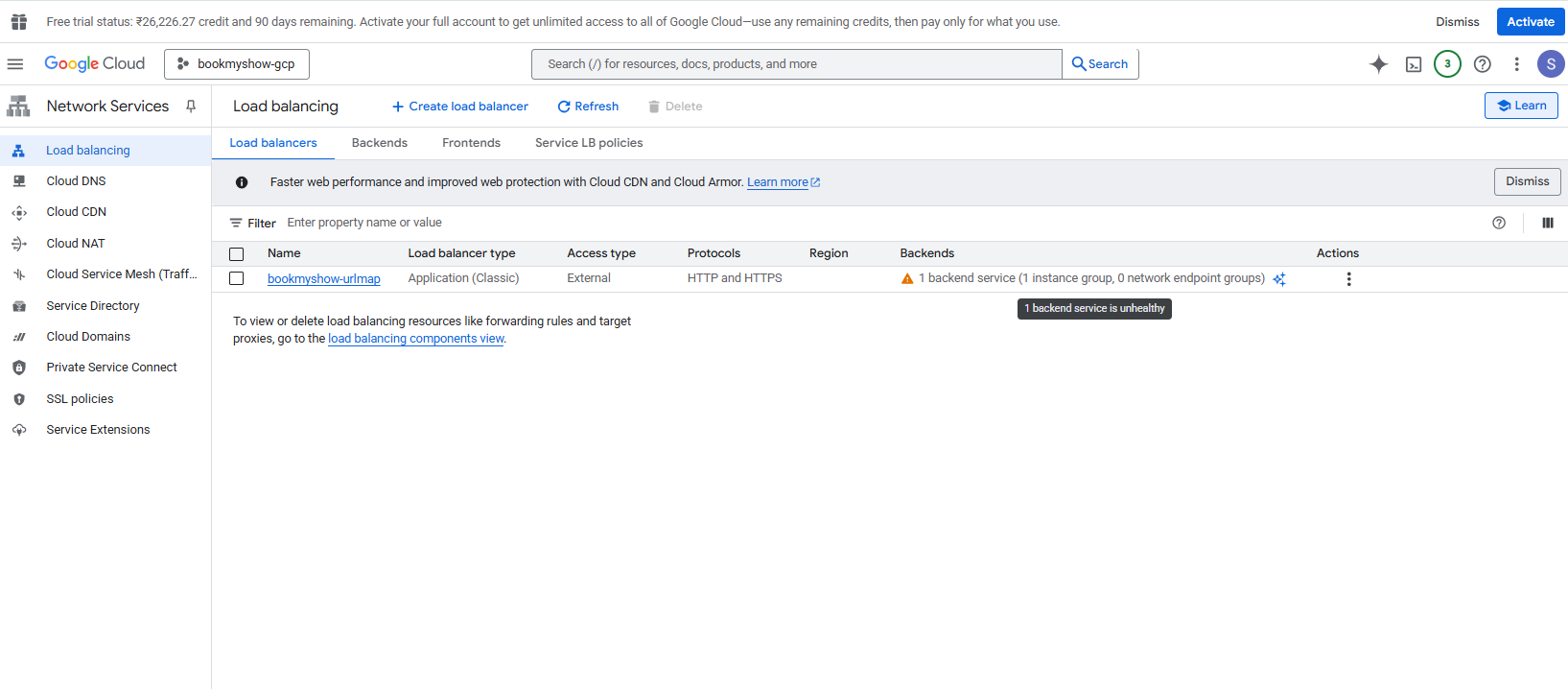
* **The following files handle compute scaling and external access:**
* mig.tf →
  + Instance Template (with startup script to run app)
  + Managed Instance Group (multi-zone)
  + Autoscaler (based on CPU utilization)
  + Health Check
* lb.tf →
  + HTTPS Load Balancer (with SSL certs)
  + Backend service
  + URL Map & Forwarding Rules (HTTP → HTTPS redirect)
* **Deploy (if core infra is already applied):**

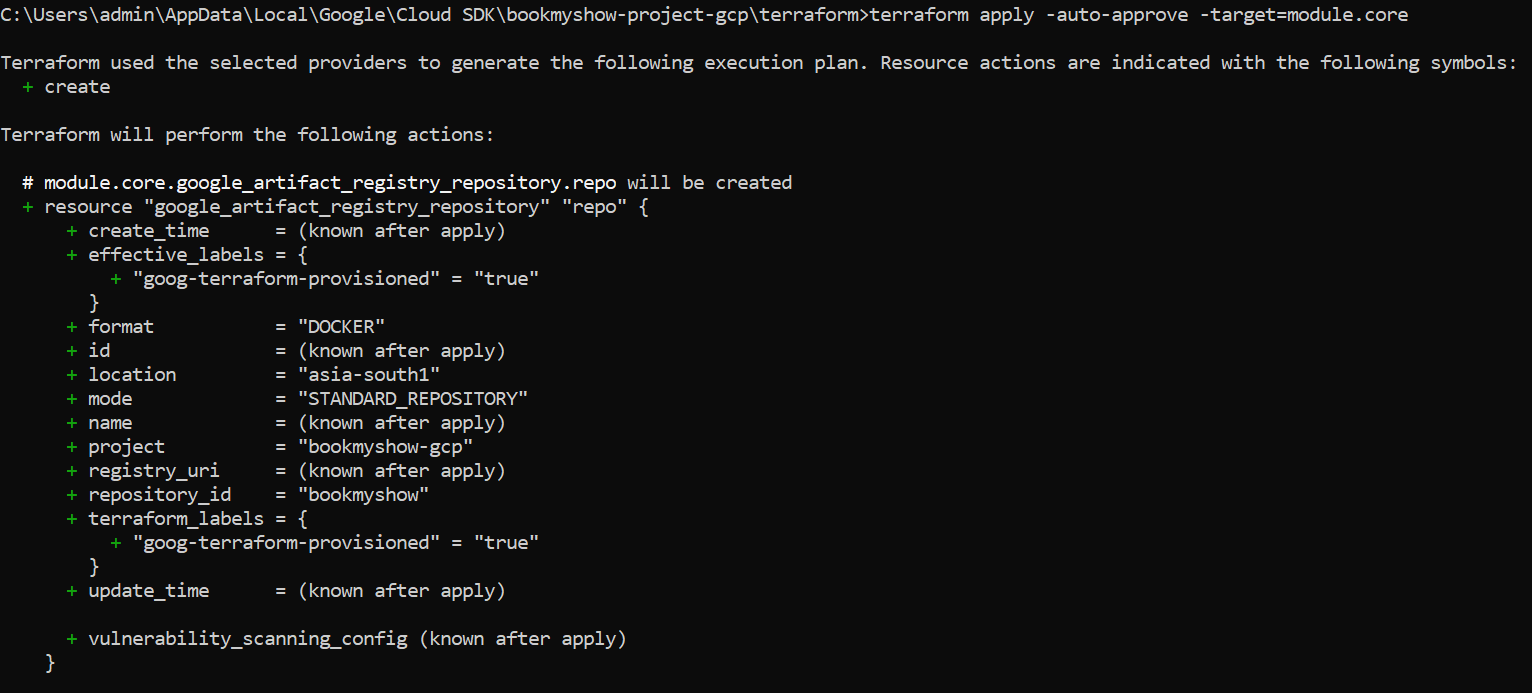
terraform apply -auto-approve

* **Managed Instance Group scaling instances**



* **Load Balancer frontend IP**

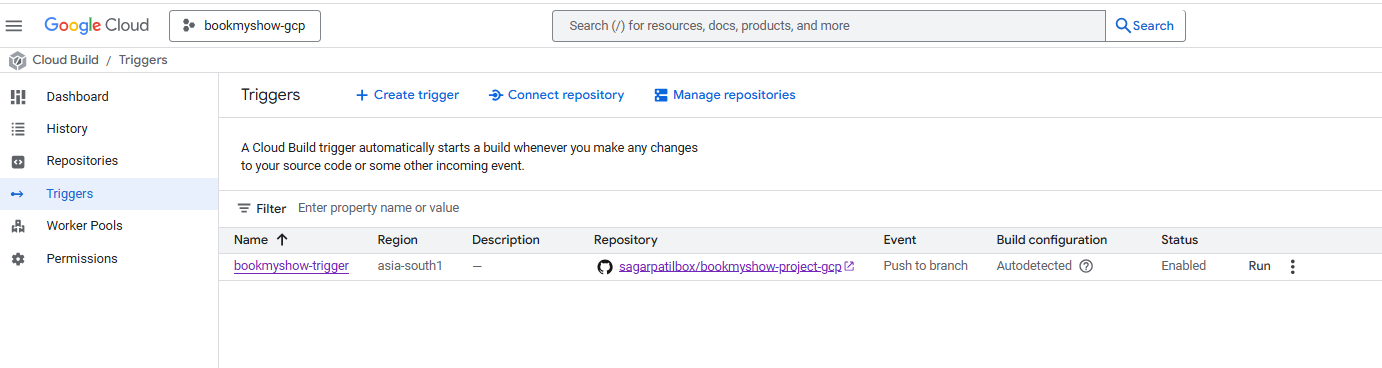




**Task 6 – CI/CD Pipeline**

* **Install GitHub App for Cloud Build & Create Cloud Build trigger**

1. Go to GCP Cloud Build GitHub App page
2. Select **“Connect Repository”** → GitHub
3. Authenticate with GitHub and **install the Cloud Build GitHub App** on your repository (bookmyshow-project-gcp)
4. Grant **read & write permissions** to triggers

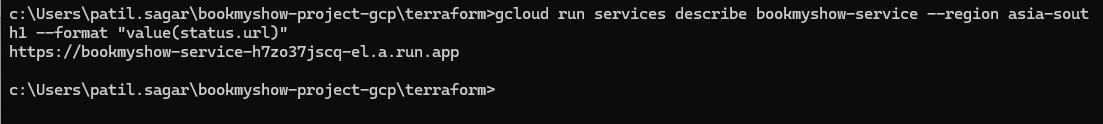
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**Task 7 – Outputs & Verification**

terraform output

* **Check URLs:**

gcloud run services describe bookmyshow-service --region asia-south1 --format "value(status.url)"



**Task 8 – Testing & Upload**

**Step 1 – Push App Image to Artifact Registry**

1. **Authenticate Docker with Artifact Registry:**

gcloud auth configure-docker asia-south1-docker.pkg.dev

1. **Build the container image:**

docker build -t asia-south1-docker.pkg.dev/bookmyshow-gcp/bookmyshow-repo/app:latest .

1. **Push the image:**

docker push asia-south1-docker.pkg.dev/bookmyshow-gcp/bookmyshow-repo/app:latest

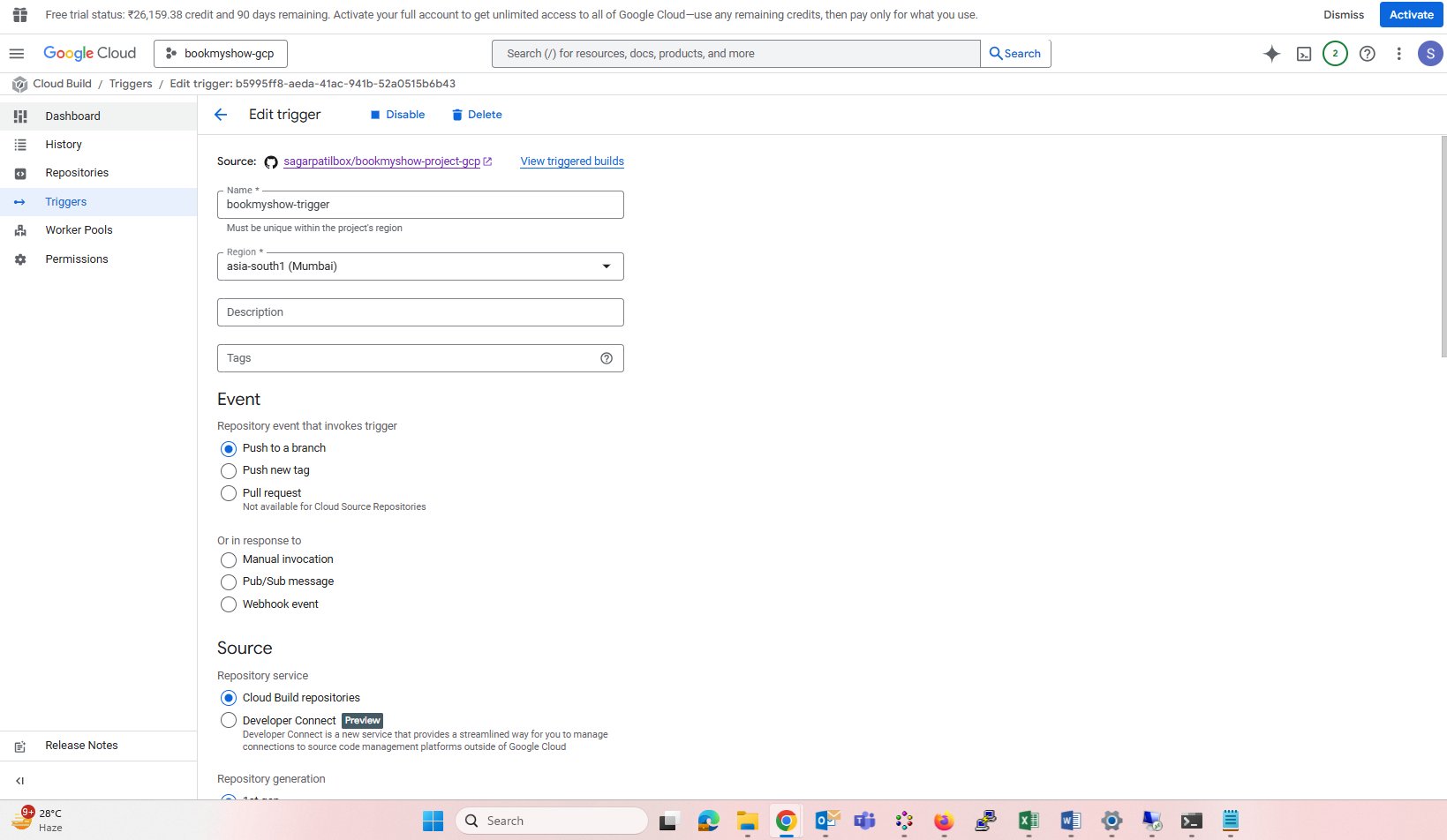
**Step 2 – Upload Static Assets to GCS**

* **Upload frontend/static assets to the storage bucket:**

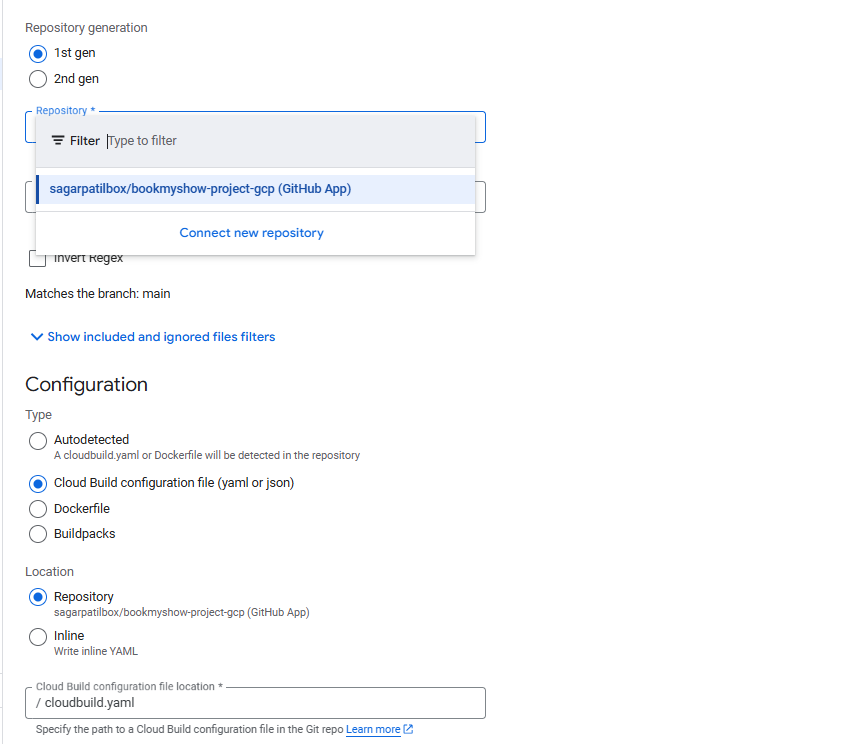
gsutil cp -r public/\* gs://bookmyshow-gcp-bucket/

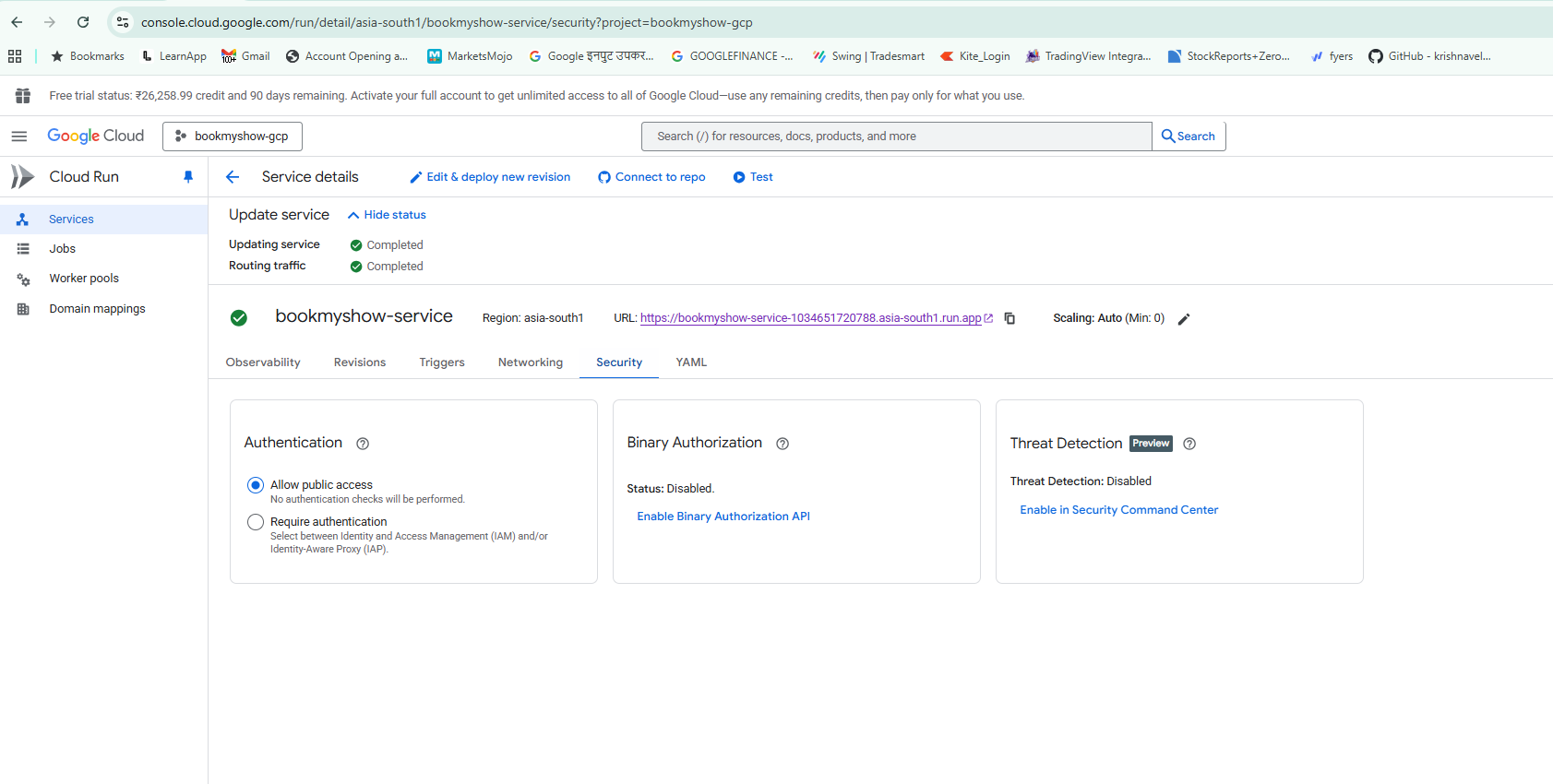
**Step 3 – Configure Cloud Build Trigger (GCP Console UI)**

1. Navigate to **GCP Console → Cloud Build → Triggers → Create Trigger**
2. Fill in:
   * **Name:** bookmyshow-trigger
   * **Event:** Push to a branch
   * **Source:** Connect to GitHub → select repo bookmyshow-project-gcp
   * **Branch (regex):** ^main$
   * **Build config file:** cloudbuild.yaml
3. Under **Advanced Settings**:
   * **Service Account:** ❌ Leave empty (Cloud Build uses default SA)
   * **Logging:** ✅ Select **Cloud Logging only** (default option)
4. Save trigger.

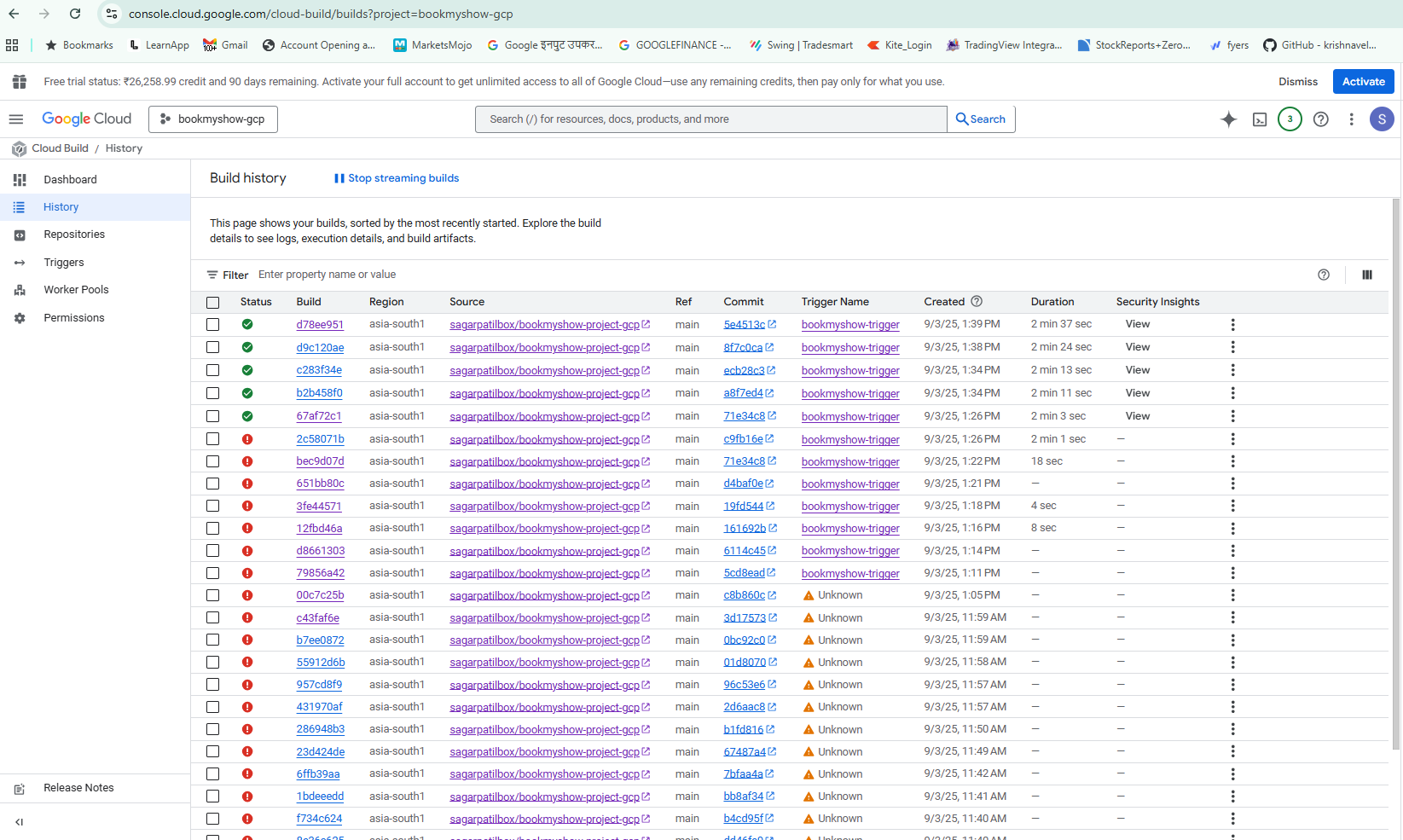


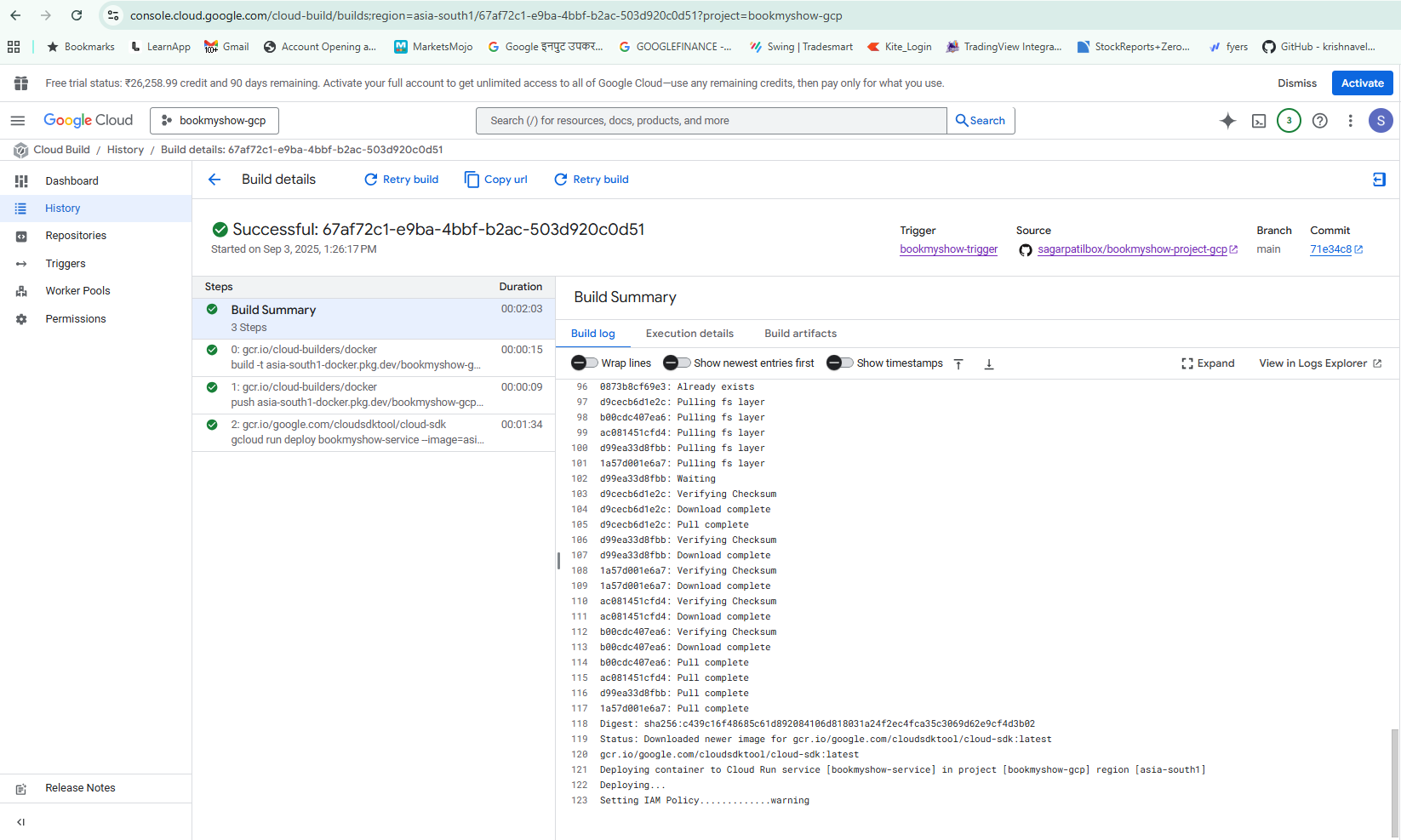
**Step 4 – Trigger Build**



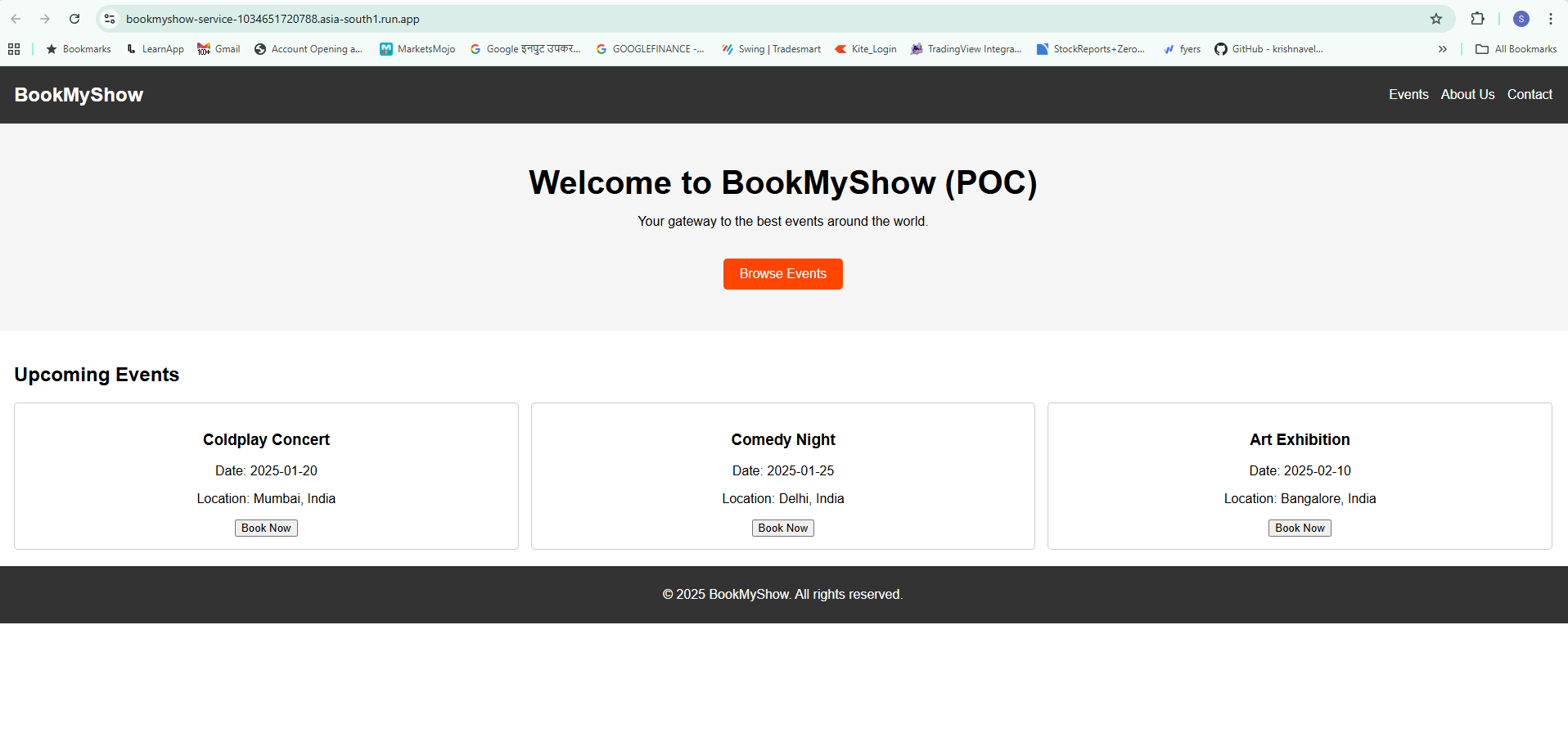
****

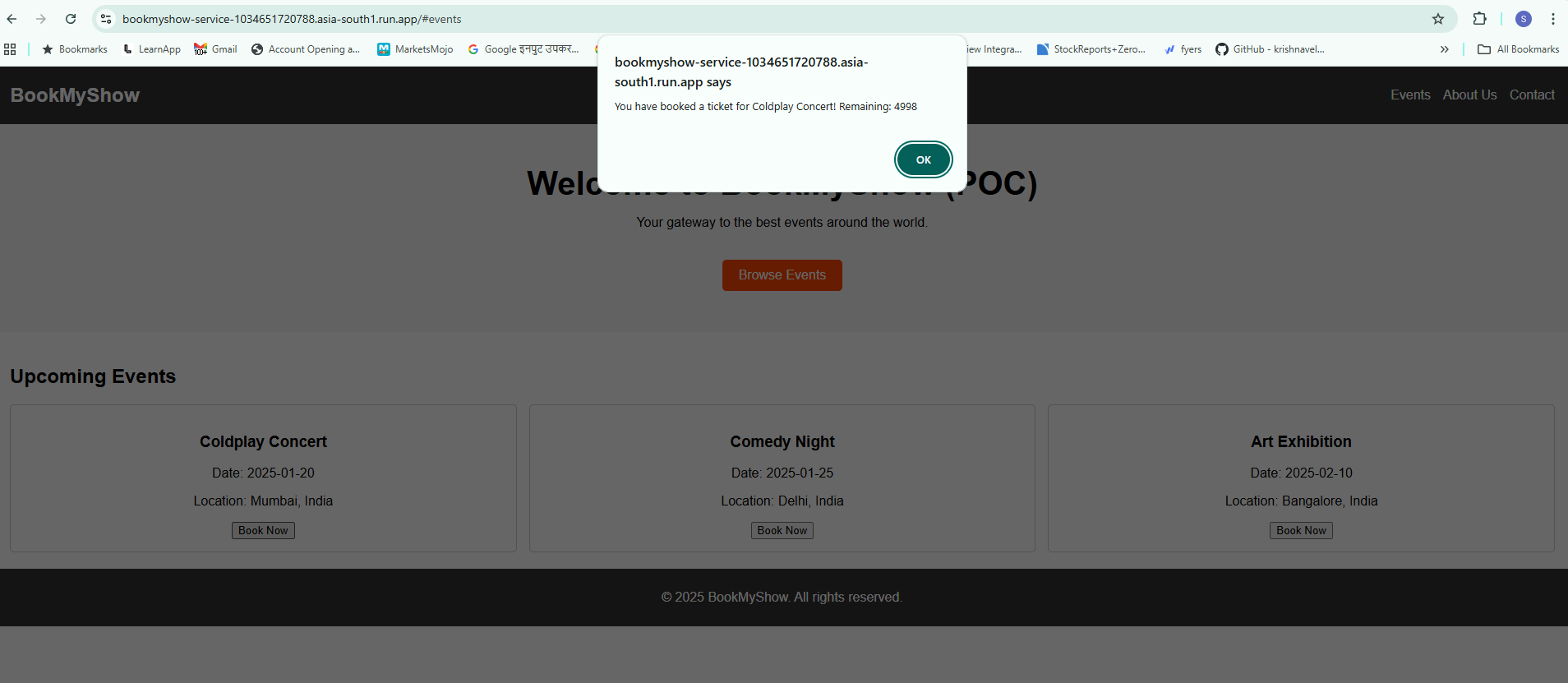
* **Cloud Build Running :**

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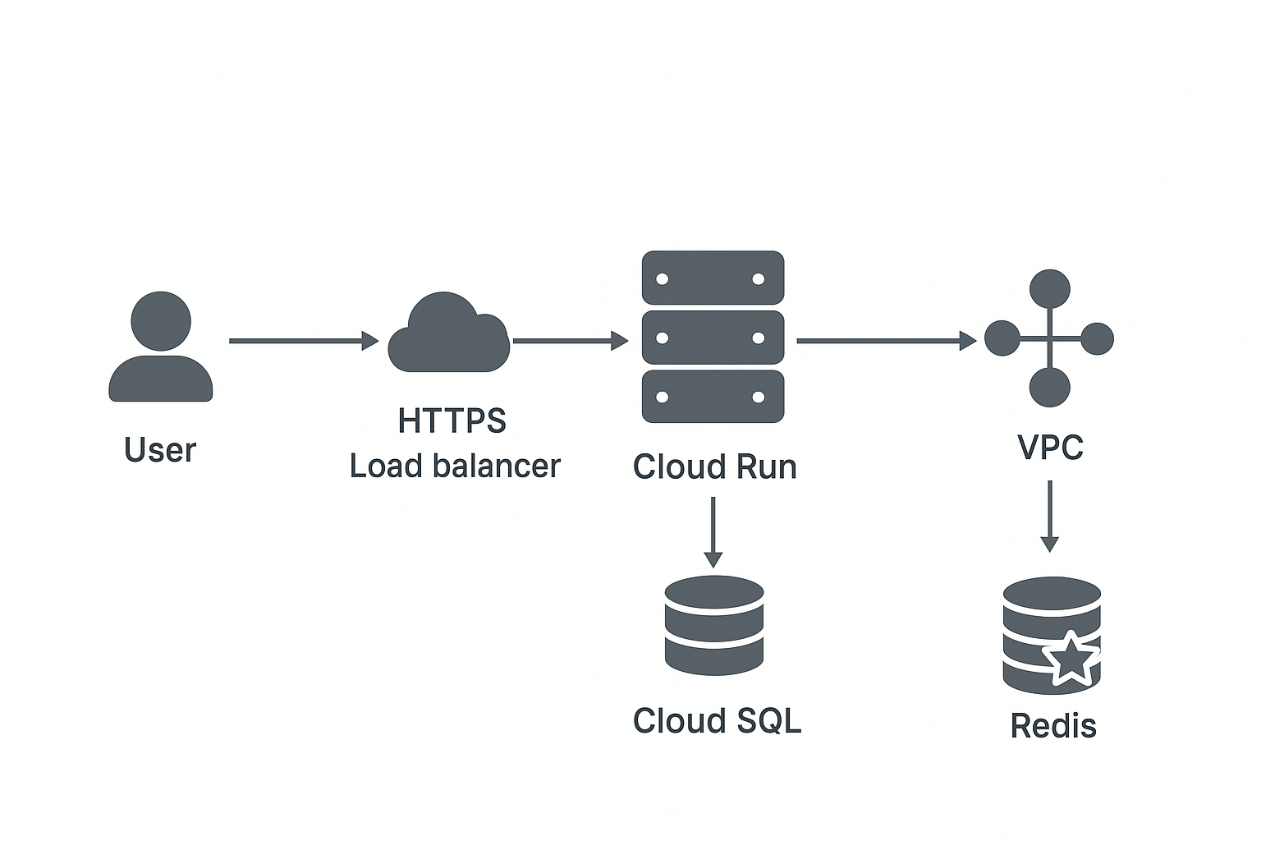
* **Application Running on cloud run**

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**Final Deliverables:**

* **Simple Architecture Diagram**



* **Project Link :**

**Github :** <https://github.com/sagarpatilbox/bookmyshow-project-gcp>

**Googel Drive :** <https://drive.google.com/drive/folders/1Rv0g1dSHwRaysRv2ewGeCh9NGCKEn3zF?usp=sharing>