

# DevOps Intern Assessment R1

**Candidate:** P N V HARI SURYA PRAKASH REDDY

**Project:** Directus Deployment using Docker on AWS EC2 + GitLab CI/CD Validation

**Directus URL:** <http://13.232.23.3:8055>

**GitLab Repo:** <https://gitlab.com/hspr2227/directus-assessment.git>

## ✓ 1. Objective

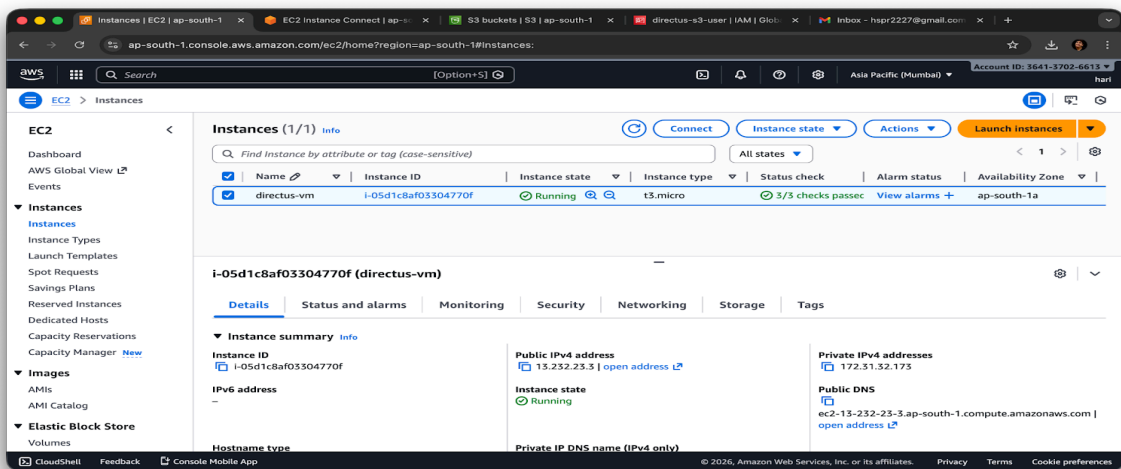
The goal of this assessment is to deploy **Directus (Headless CMS)** on a cloud VM using **Docker + PostgreSQL**, make it publicly accessible via **HTTP**, and validate the deployment using a **GitLab CI/CD pipeline** that performs health checks using **curl** and generates artifacts like homepage HTML and a deployment report.

## ✓ 2. Cloud Setup (AWS EC2)

### ✓ 2.1 EC2 Instance Creation

- **Cloud provider:** AWS
- **OS:** Ubuntu 22.04 LTS
- **Instance type:** t3.micro (Free Tier eligible)
- **Region:** ap-south-1 (Mumbai)
- **Instance name:** directus-vm

📌 **Screenshot:** EC2 Instance



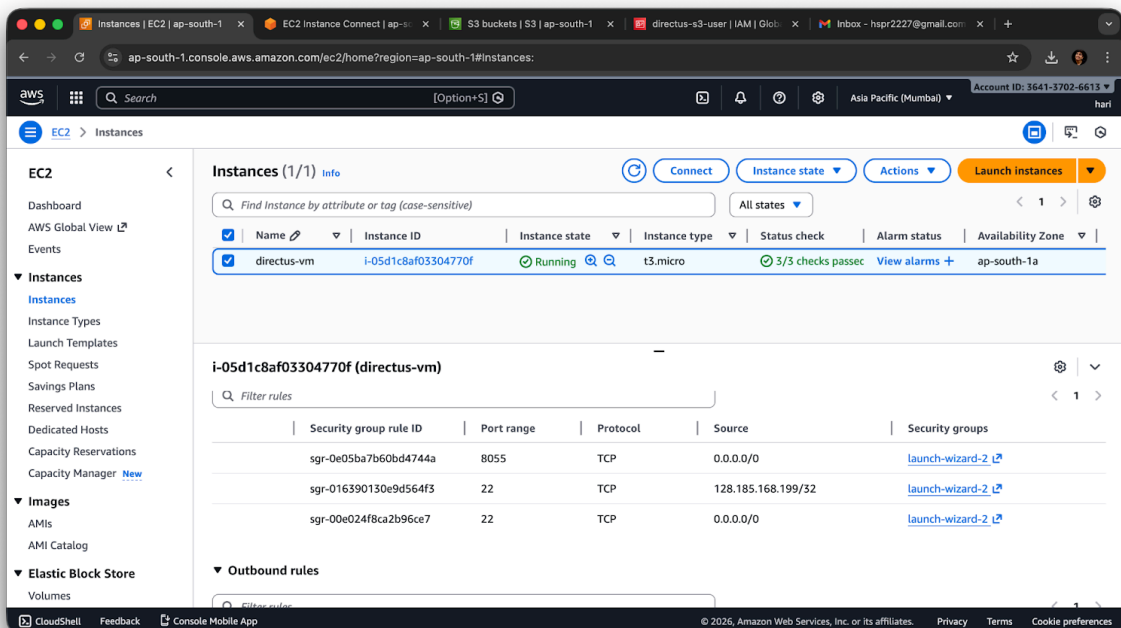
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## ✓ 2.2 Security Group Configuration

Inbound rules configured:

- **22 / SSH** → My IP
- **8055 / TCP** → 0.0.0.0/0 (public access for Directus)

📌 Screenshot: security group



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## ✓ 3. Docker + Directus Deployment (Using Docker Compose)

### ✓ 3.1 Install Docker and Docker Compose

Installed Docker and Docker Compose on the EC2 Ubuntu instance.

Commands used:

```
sudo apt update
sudo apt install -y docker.io docker-compose
sudo systemctl enable docker
sudo systemctl start docker
docker --version
```

```
docker-compose --version
```

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## ✓ 3.2 Project Structure

Created the following directory:

```
mkdir ~/directus  
cd ~/directus
```

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## ✓ 3.3 Docker Compose Deployment

Created a `docker-compose.yml` which includes:

- PostgreSQL database container
- Directus container connected to PostgreSQL
- Directus exposed on port **8055**

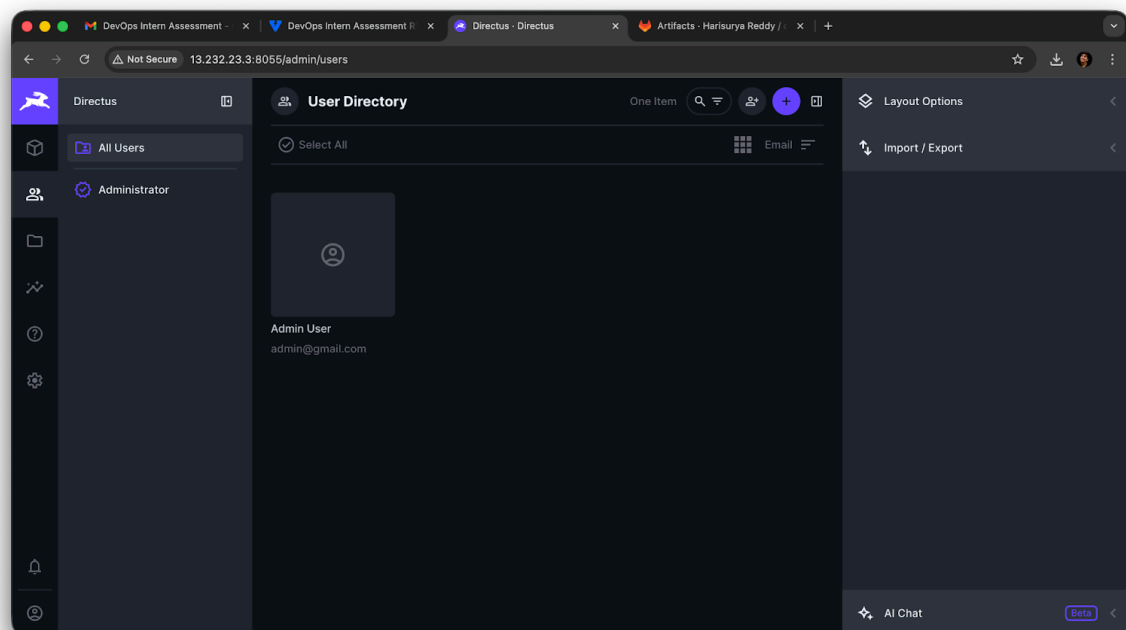
Started deployment:

```
docker-compose up -d  
docker ps
```

Verified Directus is running publicly:

✓ <http://13.232.23.3:8055>

📌 **Screenshot:** Directus running



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## ✓ 4. S3 Storage Setup (AWS S3)

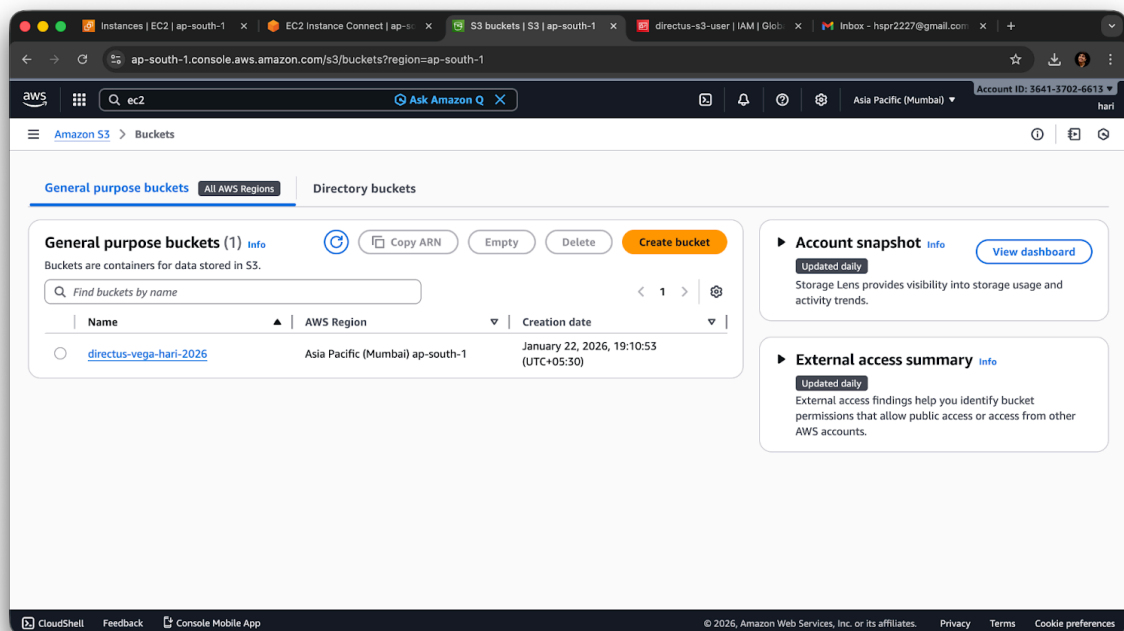
Created an S3 bucket:

- **Bucket name:** directus-vega-hari-2026
- **Region:** ap-south-1

IAM User created for Directus S3 access:

- **User:** directus-s3-user
- **Permissions:** S3 access policy attached
- Generated **Access Key + Secret Key** for Directus Storage

📌 **Screenshot: S3 bucket**



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## ✓ 5. GitLab Repository Setup

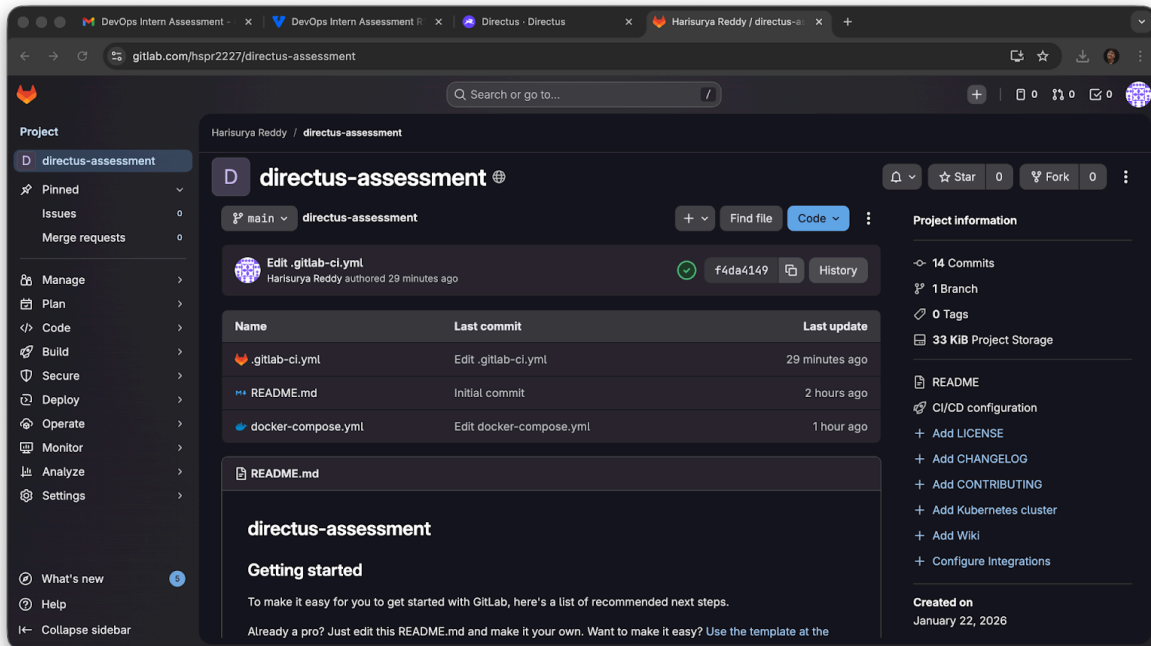
Created a public GitLab project:

- **Repo name:** directus-assessment
- **Repo link:** <https://gitlab.com/hspr2227/directus-assessment.git>

Added required files:

- `docker-compose.yml`
- `.gitlab-ci.yml`

 **Screenshot: gitlab repo**



## ✓ 6. GitLab CI/CD Pipeline Setup

### ✓ 6.1 Pipeline Stages

Pipeline contains 3 stages:

1. **Validate** → validate configuration files
2. **Test** → curl Directus deployment + download homepage
3. **Report** → generate deployment summary report

### ✓ 6.2 Jobs Included

Jobs configured in `.gitlab-ci.yml`:

#### ✓ `validate_config`

- Validates Docker Compose file

#### ✓ `health_check`

- Checks Directus URL using `curl -I`

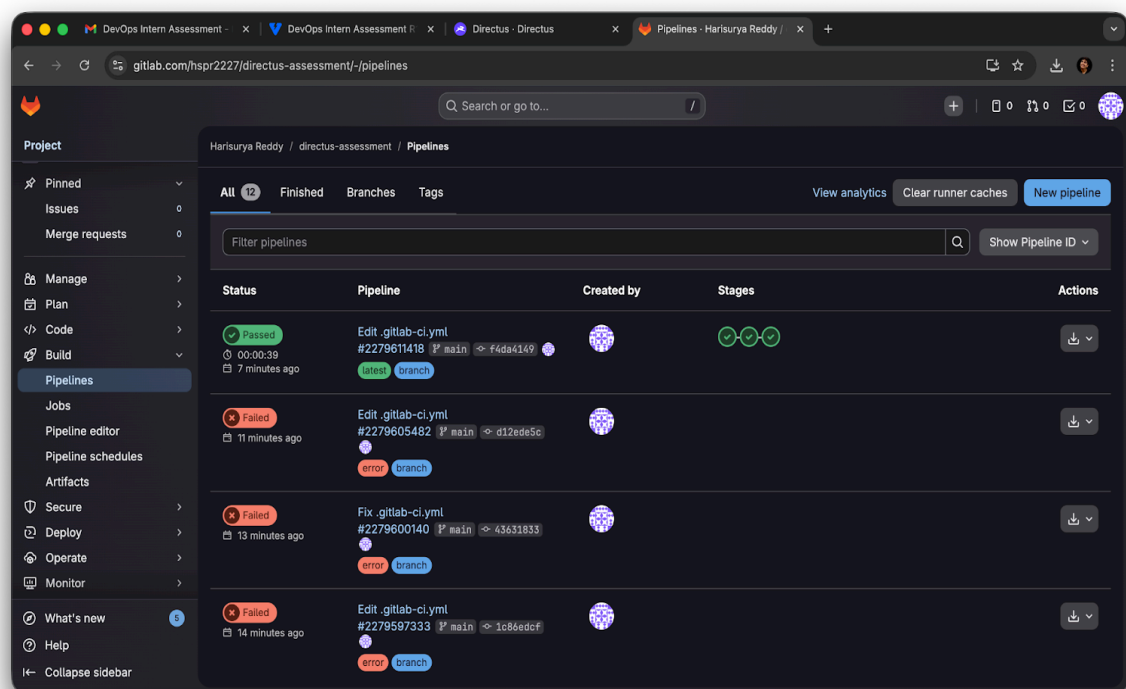
### ✅ capture\_homepage

- Downloads homepage HTML
- ✅ Artifact generated: `directus_homepage.html`

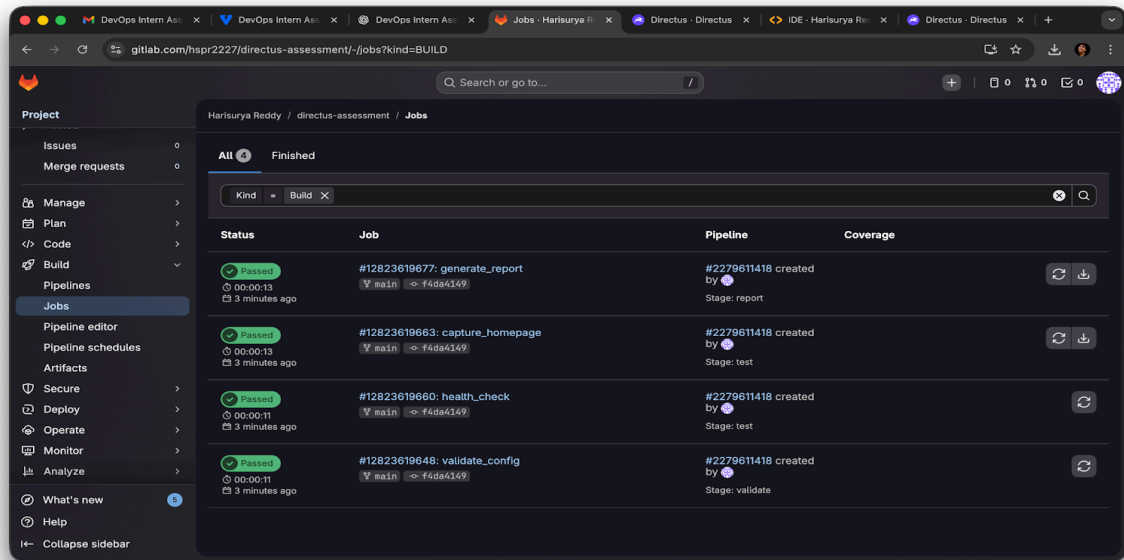
### ✅ generate\_report

- Generates report
- ✅ Artifact generated: `deployment_report.md`

### 📌 Screenshot: pipelines



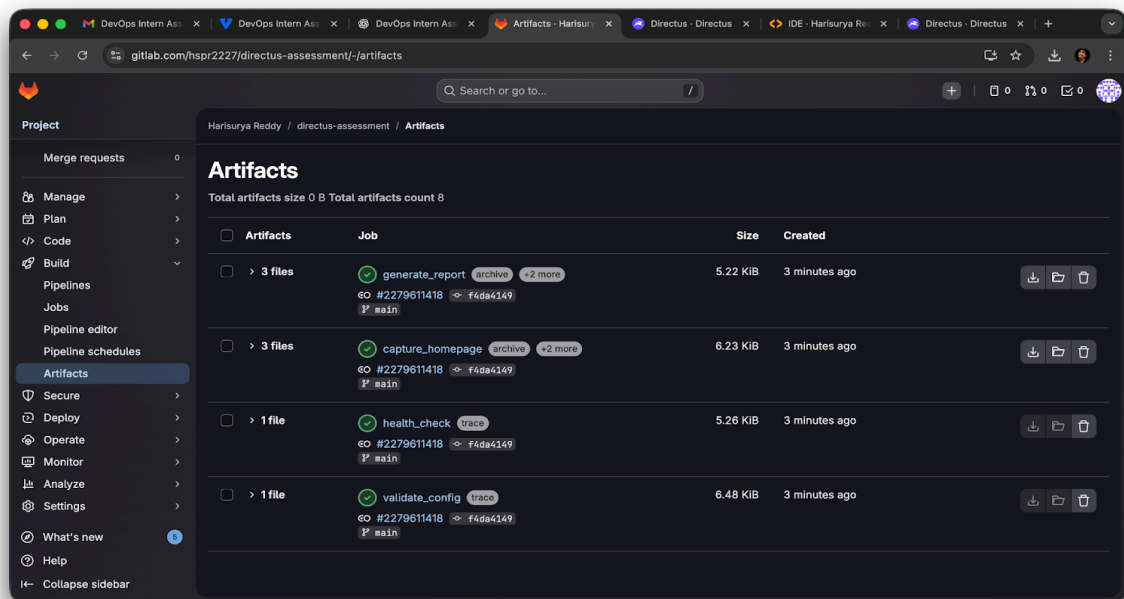
## Screenshot: jobs



The screenshot shows the GitLab interface for the 'Jobs' page of a project named 'directus-assessment'. The left sidebar contains navigation options like 'Issues', 'Merge requests', 'Manage', 'Plan', 'Code', 'Build', 'Pipelines', 'Pipeline editor', 'Pipeline schedules', 'Artifacts', 'Secure', 'Deploy', 'Operate', 'Monitor', 'Analyze', 'What's new', and 'Help'. The main content area displays a table of completed jobs. The table has columns for 'Status', 'Job', 'Pipeline', and 'Coverage'. All jobs are marked as 'Passed' and completed 3 minutes ago. The jobs listed are: 'generate\_report', 'capture\_homepage', 'health\_check', and 'validate\_config'. Each job is associated with a specific pipeline and stage.

Status	Job	Pipeline	Coverage
Passed	#12823619677: generate_report 00:00:13 3 minutes ago	#2279611418 created by Stage: report	
Passed	#12823619663: capture_homepage 00:00:13 3 minutes ago	#2279611418 created by Stage: test	
Passed	#12823619660: health_check 00:00:11 3 minutes ago	#2279611418 created by Stage: test	
Passed	#12823619648: validate_config 00:00:11 3 minutes ago	#2279611418 created by Stage: validate	


## Screenshot: artifacts




The screenshot shows the GitLab interface for the 'Artifacts' page of the same project. The left sidebar is identical to the previous screenshot. The main content area displays a table of artifacts. The table has columns for 'Artifacts', 'Job', 'Size', and 'Created'. There are four artifacts listed, each corresponding to a job from the previous screenshot. Each artifact is associated with a specific pipeline and stage. The artifacts are: 'generate\_report' (5.22 KiB), 'capture\_homepage' (6.23 KiB), 'health\_check' (5.26 KiB), and 'validate\_config' (6.48 KiB). Each artifact is marked as 'archive' and '+2 more' files are available.

Artifacts	Job	Size	Created
> 3 files	generate_report eo #2279611418 P main	5.22 KiB	3 minutes ago
> 3 files	capture_homepage eo #2279611418 P main	6.23 KiB	3 minutes ago
> 1 file	health_check eo #2279611418 P main	5.26 KiB	3 minutes ago
> 1 file	validate_config eo #2279611418 P main	6.48 KiB	3 minutes ago

## 7. Final Verification

 Directus is reachable publicly at:  
<http://13.232.23.3:8055>

 GitLab CI/CD pipeline passes successfully and validates the deployment.

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## ✅ 8. Challenges Faced & Fixes

### ❌ Issue:

Initially, GitLab pipeline failed due to YAML errors (indentation and script format issues), especially around:

```
jobs:generate_report:script config should be a string or nested array
```

### ✅ Fix:

- Simplified the `.gitlab-ci.yml`
- Corrected YAML indentation
- Validated in **GitLab Pipeline Editor**
- Re-ran and confirmed pipeline passed successfully

✅ After fixing, the pipeline ran and generated required artifacts.

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## ✅ 9. Submission Links

✅ Directus URL: <http://13.232.23.3:8055>

✅ GitLab Project URL: <https://gitlab.com/hspr2227/directus-assessment.git>

✅ Google Doc URL:

<https://docs.google.com/document/d/12aI7qAf2XRNvcnNhpWfrSC4OinwEs4Z5Q2bYrPZOcPM/edit?usp=sharing>