HEART DISEASE PREDICTION

Group 5:
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PROJECT FLOW

STEP 01 — Dataset: Preprocessing

STEP 02 — Model Deployment

STEP 03 — ML Flow: Tracking

STEP 04 — Dockerization

STEP 05 — Cloud Deployment

DATASET

age	sex	chest_pain_type	resting_blood_pressure	cholestoral	fasting_blood_sugar	rest_ecg	Max_heart_rate	exercise_induced_angina	oldpeak	slope	vessels_colored_by_flourosopy	thalassemia	target
52	Male	Typical angina	125	212	Lower than 120 mg/ml	ST-T wave abnormality	168	No	1	Downsloping	Two	Reversable Defect	0
53	Male	Typical angina	140	203	Greater than 120 mg/ml	Normal	155	Yes	3.1	Upsloping	Zero	Reversable Defect	0
70	Male	Typical angina	145	174	Lower than 120 mg/ml	ST-T wave abnormality	125	Yes	2.6	Upsloping	Zero	Reversable Defect	0
61	Male	Typical angina	148	203	Lower than 120 mg/ml	ST-T wave abnormality	161	No	0	Downsloping	One	Reversable Defect	0
62	Female	Typical angina	138	294	Greater than 120 mg/ml	ST-T wave abnormality	106	No	1.9	Flat	Three	Fixed Defect	0
58	Female	Typical angina	100	248	Lower than 120 mg/ml	Normal	122	No	1	Flat	Zero	Fixed Defect	1
58	Male	Typical angina	114	318	Lower than 120 mg/ml	Left ventricular hypertrophy	140	No	4.4	Upsloping	Three	Normal	0
55	Male	Typical angina	160	289	Lower than 120 mg/ml	Normal	145	Yes	0.8	Flat	One	Reversable Defect	0
46	Male	Typical angina	120	249	Lower than 120 mg/ml	Normal	144	No	0.8	Downsloping	Zero	Reversable Defect	0
54	Male	Typical angina	122	286	Lower than 120 mg/ml	Normal	116	Yes	3.2	Flat	Two	Fixed Defect	0
71	Female	Typical angina	112	149	Lower than 120 mg/ml	ST-T wave abnormality	125	No	1.6	Flat	Zero	Fixed Defect	1
43	Female	Typical angina	132	341	Greater than 120 mg/ml	Normal	136	Yes	3	Flat	Zero	Reversable Defect	0
34	Female	Atypical angina	118	210	Lower than 120 mg/ml	ST-T wave abnormality	192	No	0.7	Downsloping	Zero	Fixed Defect	1
51	Male	Typical angina	140	298	Lower than 120 mg/ml	ST-T wave abnormality	122	Yes	4.2	Flat	Three	Reversable Defect	0
52	Male	Typical angina	128	204	Greater than 120 mg/ml	ST-T wave abnormality	156	Yes	1	Flat	Zero	No	0
34	Female	Atypical angina	118	210	Lower than 120 mg/ml	ST-T wave abnormality	192	No	0.7	Downsloping	Zero	Fixed Defect	1
51	Female	Non-anginal pain	140	308	Lower than 120 mg/ml	Normal	142	No	1.5	Downsloping	One	Fixed Defect	1
54	Male	Typical angina	124	266	Lower than 120 mg/ml	Normal	109	Yes	2.2	Flat	One	Reversable Defect	0
50	Female	Atypical angina	120	244	Lower than 120 mg/ml	ST-T wave abnormality	162	No	1.1	Downsloping	Zero	Fixed Defect	1
58	Male	Non-anginal pain	140	211	Greater than 120 mg/ml	Normal	165	No	0	Downsloping	Zero	Fixed Defect	1
60	Male	Non-anginal pain	140	185	Lower than 120 mg/ml	Normal	155	No	3	Flat	Zero	Fixed Defect	0
67	Female	Typical angina	106	223	Lower than 120 mg/ml	ST-T wave abnormality	142	No	0.3	Downsloping	Two	Fixed Defect	1
45	Male	Typical angina	104	208	Lower than 120 mg/ml	Normal	148	Yes	3	Flat	Zero	Fixed Defect	1
63	Female	Non-anginal pain	135	252	Lower than 120 mg/ml	Normal	172	No	0	Downsloping	Zero	Fixed Defect	1
42	Female	Non-anginal pain	120	209	Lower than 120 mg/ml	ST-T wave abnormality	173	No	0	Flat	Zero	Fixed Defect	1
61	Female	Typical angina	145	307	Lower than 120 mg/ml	Normal	146	Yes	1	Flat	Zero	Reversable Defect	0

No of Rows: 14

No of Columns: 1025

Column Name: **Description**

age: Age of the patient (in years).

sex: Gender of the patient (1 = male, 0 = female).

chest_pain_type: Type of chest pain (e.g., typical angina, atypical angina, non-anginal pain, asymptomatic).

resting_blood_pressure: Resting blood pressure (in mm Hg).

cholestoral: Serum cholesterol level (in mg/dl).

fasting_blood_sugar: Fasting blood sugar > 120 mg/dl (1 = true, 0 = false).

rest_ecg: Resting electrocardiographic results (e.g., normal, ST-T abnormality, LV hypertrophy).

Max_heart_rate: Maximum heart rate achieved during exercise.

exercise_induced_angina: Exercise-induced angina (1 = yes, 0 = no).

oldpeak: Depression induced by exercise relative to rest (ST depression).

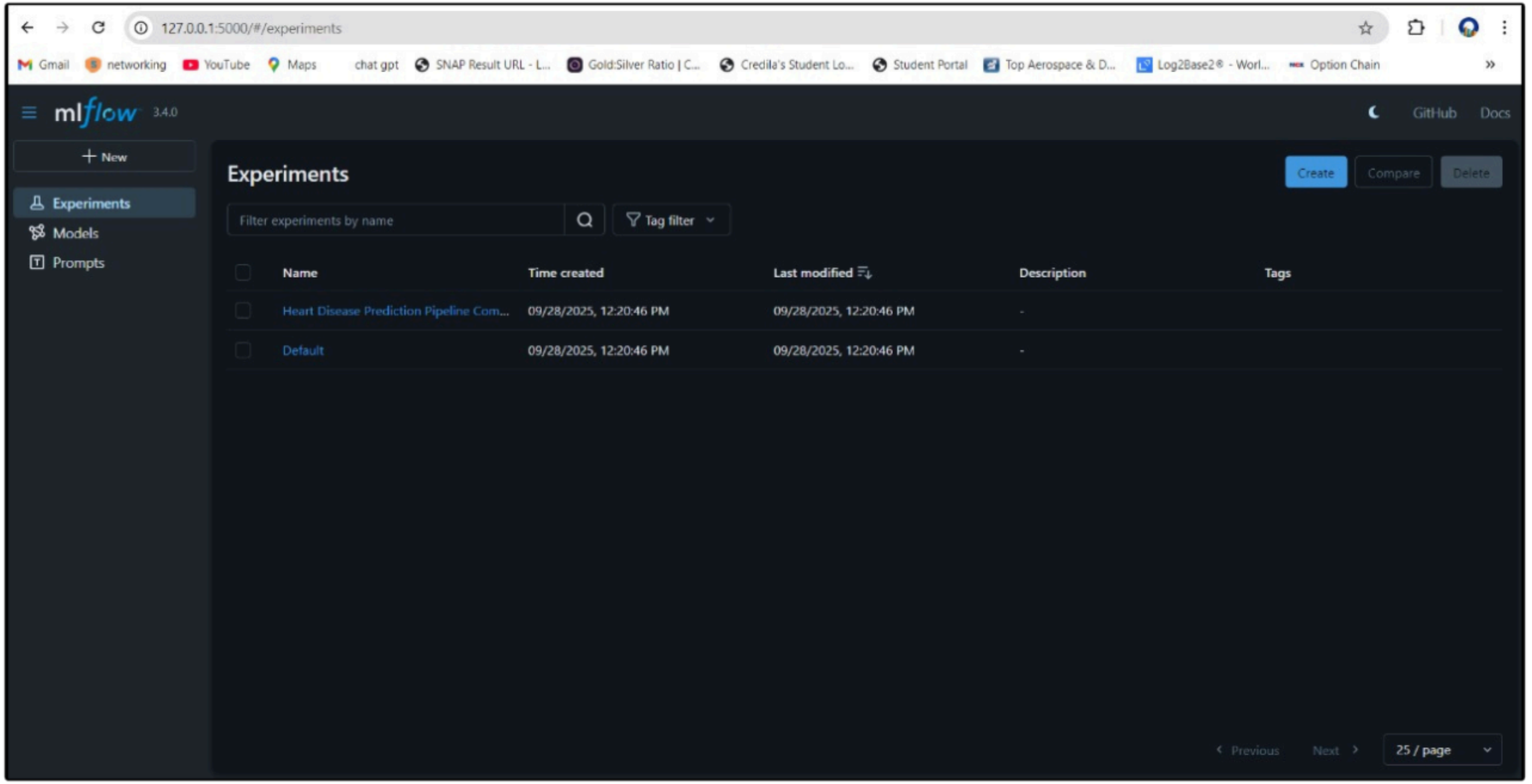
slope: Slope of the peak exercise ST segment (upsloping, flat, downsloping).

vessels_colored_by_flourosopy: Number of major vessels colored by fluoroscopy (0-3).

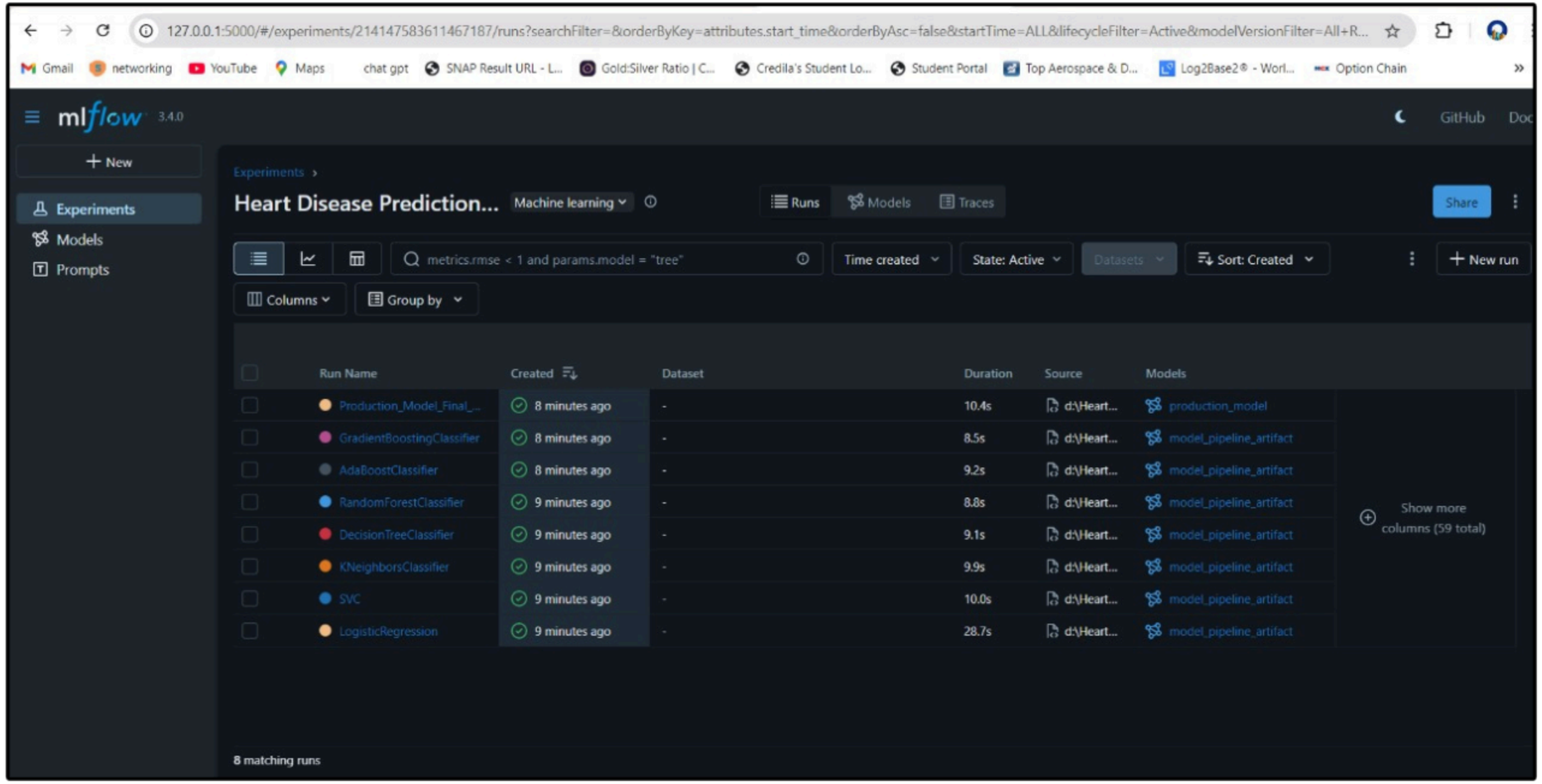
thalassemia: A blood disorder (e.g., normal, fixed defect, reversible defect).

target: Diagnosis of heart disease (1 = disease present, 0 = no disease).

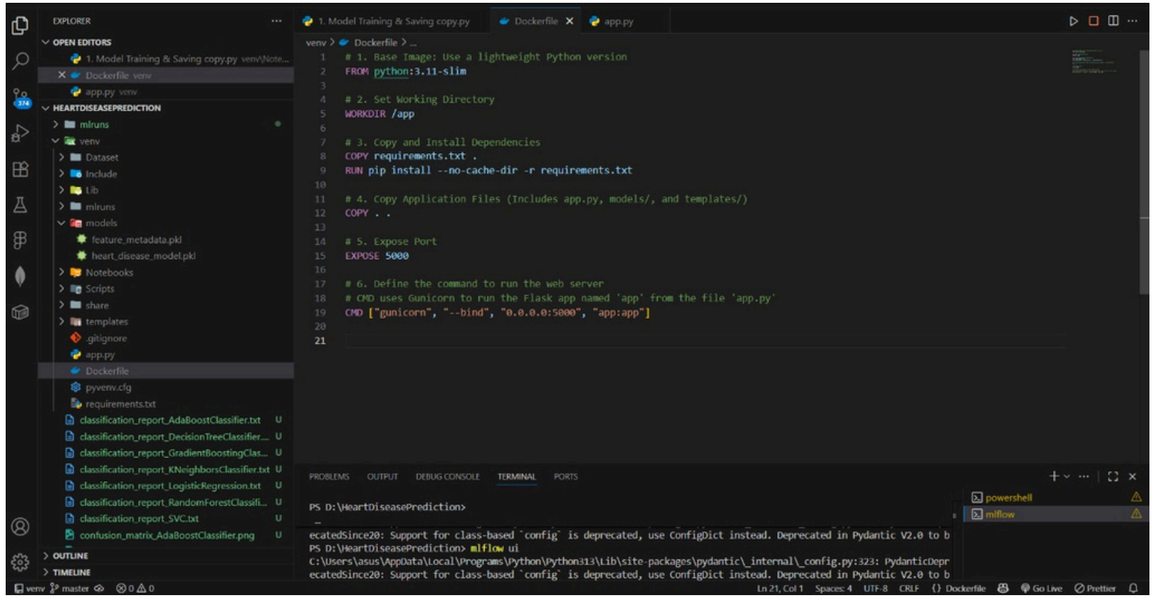
ML FLOW MODEL



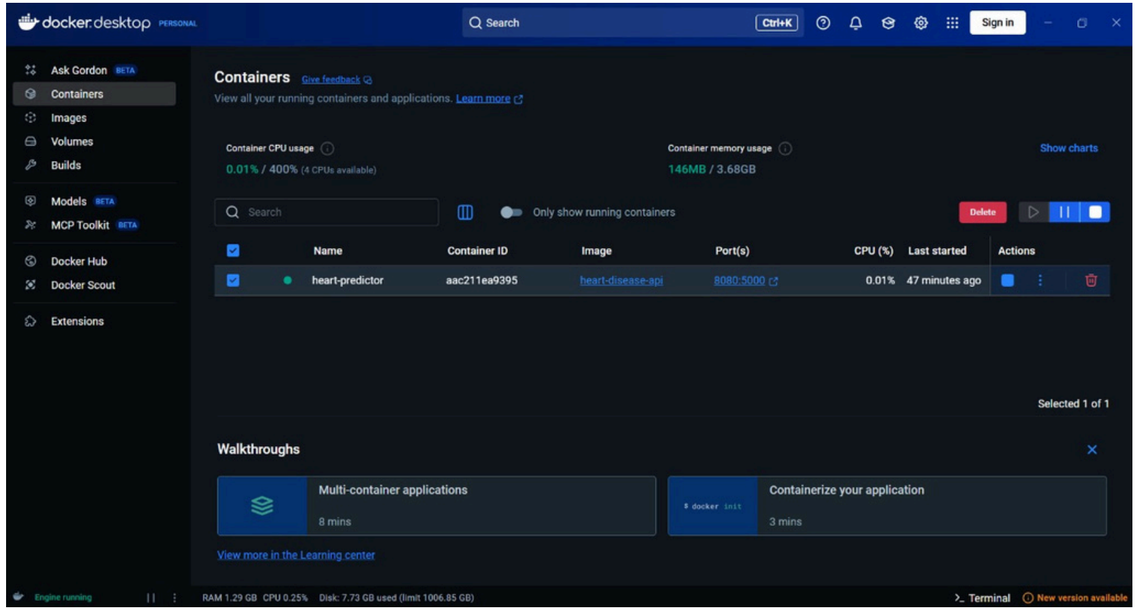
ML FLOW TRACKING



DOCKERIZATION

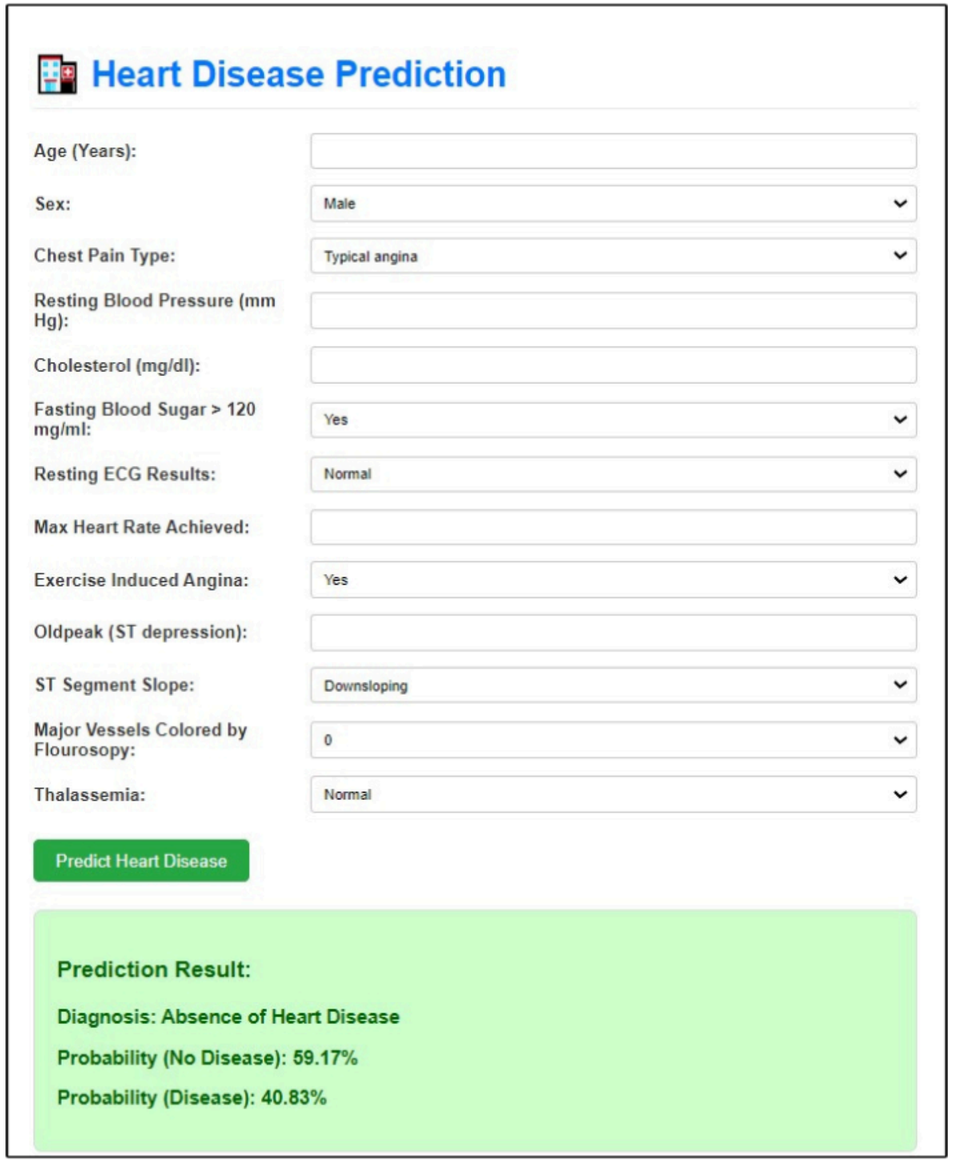


DOCKER FILE



CONTAINER

USER INTERFACE



LINK: http://localhost:8080/

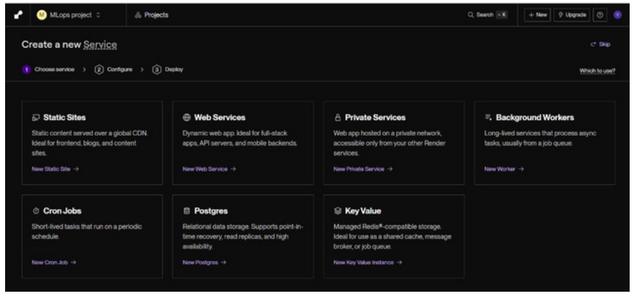
RENDERING STEPS

Step 1: Prepare GitHub Repository

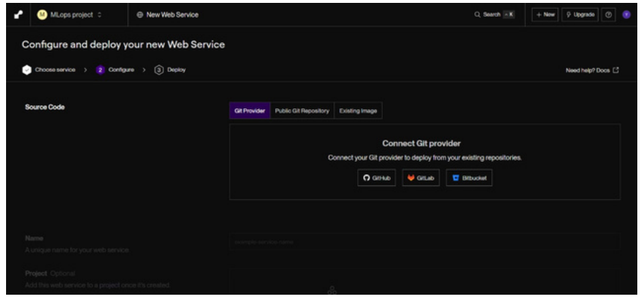
First, ensure your project is complete and pushed to GitHub:

1. **Verify Project Structure:** Confirm your project's root folder contains the following essential files and folders:
   - `app.py`
   - `Dockerfile`
   - `requirements.txt`
   - `models/` (containing `.pkl` files)
   - `templates/` (containing `index.html`)

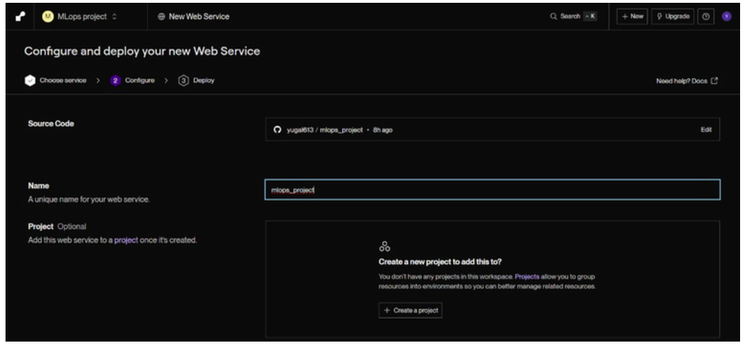
PREPARING GIT REPOSITORY



SELECTING WEB SERVICES

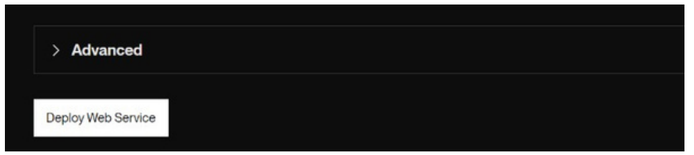


CONNECTING TO GITHUB REPOSITORY



Setting	Value to Select	Reason
Service Name	A unique name (e.g., `heart-disease-predictor`)	This will be part of your live URL.
Region	Select a region geographically close to you.	Improves latency.
Branch	`main`	The branch containing the code you want to deploy.
Environment	**Docker** (Select this explicitly)	This tells Render to ignore standard Python builds and use your `Dockerfile`.
Build Command	**Leave Blank**	Docker uses the instructions inside your `Dockerfile`.
Start Command	**Leave Blank**	Docker uses the `CMD` instruction from your `Dockerfile` (`gunicorn app:app`).
Instance Type	**Free**	Suitable for testing and personal projects. *Note: Free instances spin down after 15 minutes of inactivity.*

CONFIGURING DEPLOYMENT



DEPLOYING WEB SERVICES

THANK YOU