PROJECT INTRODUCTION (MLOPS PROJECT - 1)

HOTEL RESERVATIONS PREDICTION

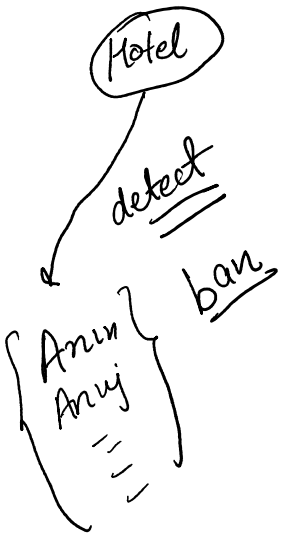
Can you predict if the customer is going to honor the reservation or cancel it ?

(Machine Learning Project)

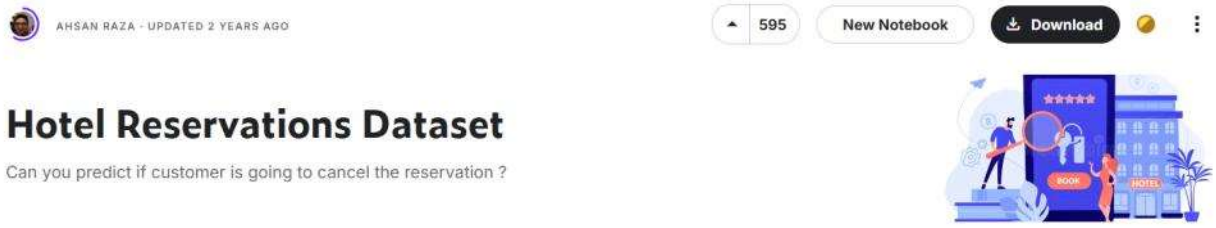
USE CASE

08 January 2025 18:47

1. Revenue Management
2. Targeted Marketing
3. Fraud Detection

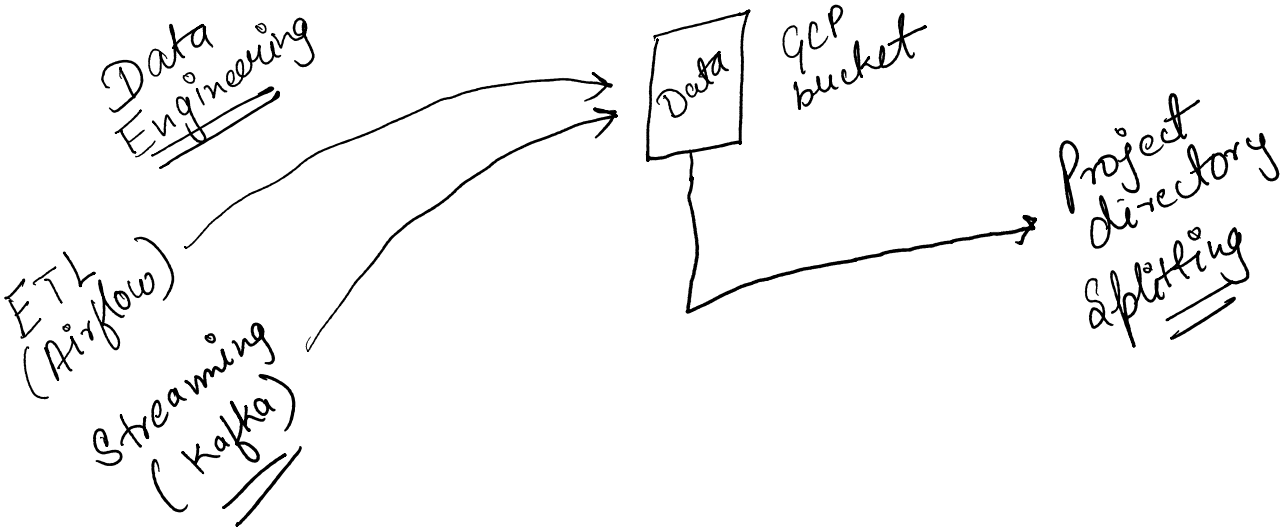


DATASET USED



Link to Dataset is in Description

WORKFLOW OF MLOPS PROJECT - 1


Data Engineering
ETL (Airflow)
Streaming (kafka)
Data
GCP bucket
Project directory splitting

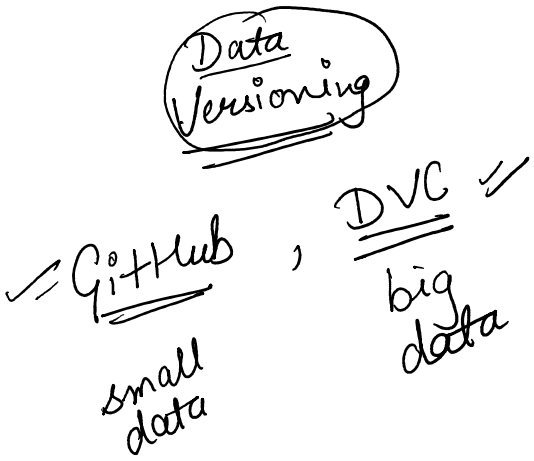
Model Training

Experiment Tracking

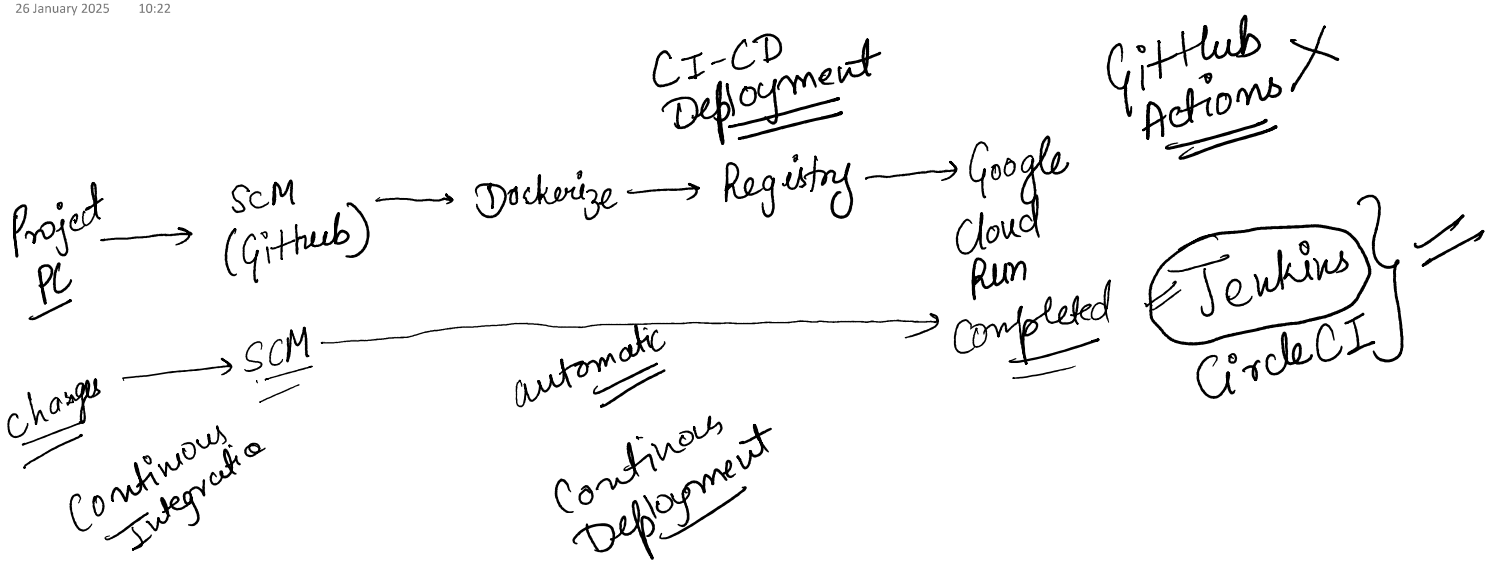
MLflow

1 ⟶ 90% 10000 rows Model 1

2 ⟶ 92% 1200 rows Model 2


Data Versioning
GitHub
small data
DVC
big data


Code Versioning
GitHub
1
2
3


CI-CD
Deployment
GitHub Actions
Project
PL
SCM
(GitHub)
Dockerize
Registry
Google
Cloud
Run
Changes
SCM
Completed
Jenkins
CircleCI
automatic
Continuous
Integration
Continuous
Deployment

① GCP ⇒ Google Cloud Platform

Database / Storage
Virtual Machine
Servers

② GCP Buckets.

↳ Storage service

→ Group of folder & files.

PROJECT SETUP

09 January 2025 21:38

① Create a venv

python - 3.8

Project 1
pandas ver 1.
python 3.11

Project 2.
pandas ver 2.

② Requirements →

ML App

③ setup.py → project management

pip install pandas

④ logger.

logs.

1st step completed
2nd - . . . .
final - . . . .

2nd step failed

⑤ Custom exception

⑥ src
artifacts.
pipeline

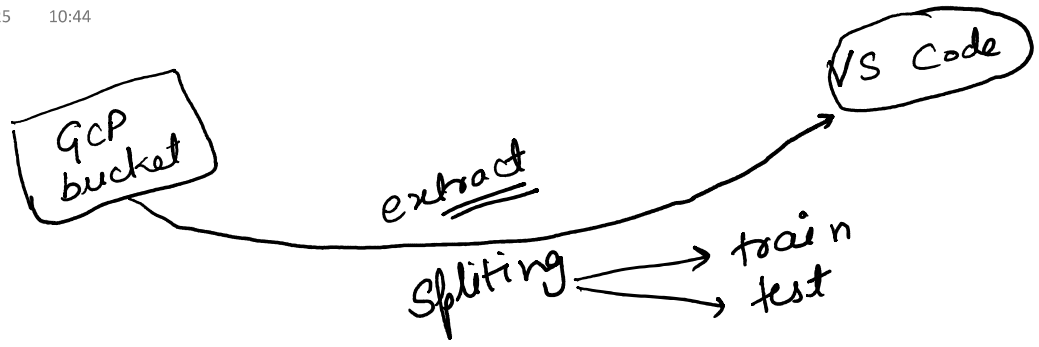
notebook
config.
utils.

templates
Static.

project structure.

DATA INGESTION

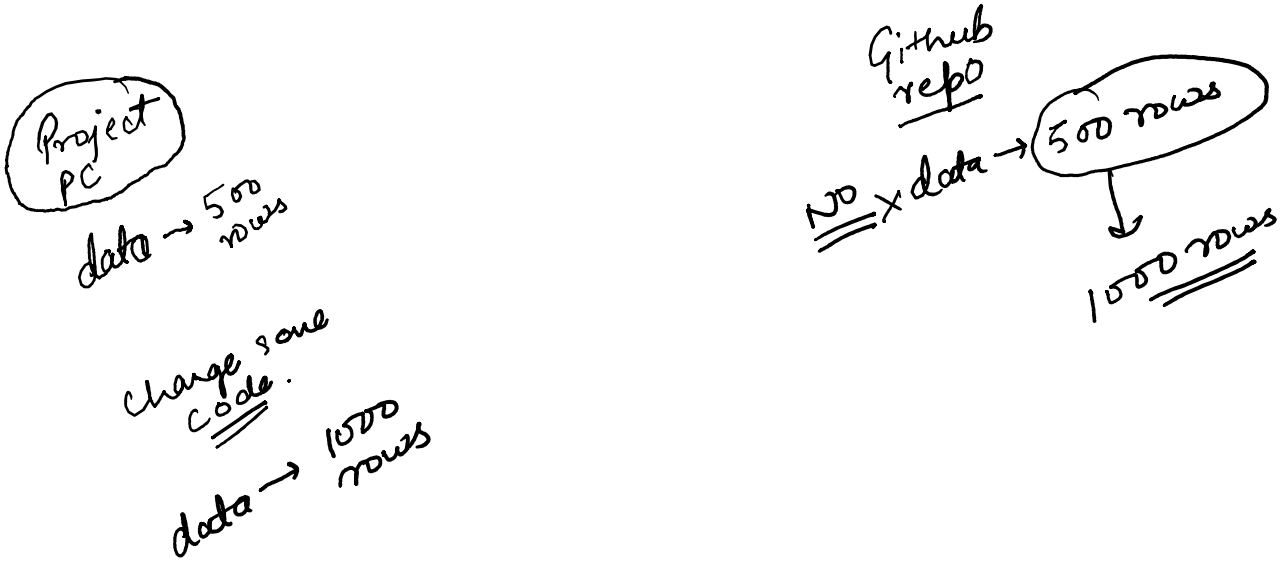
10 January 2025 10:44



① Service account → Restricted access of your Google Cloud services

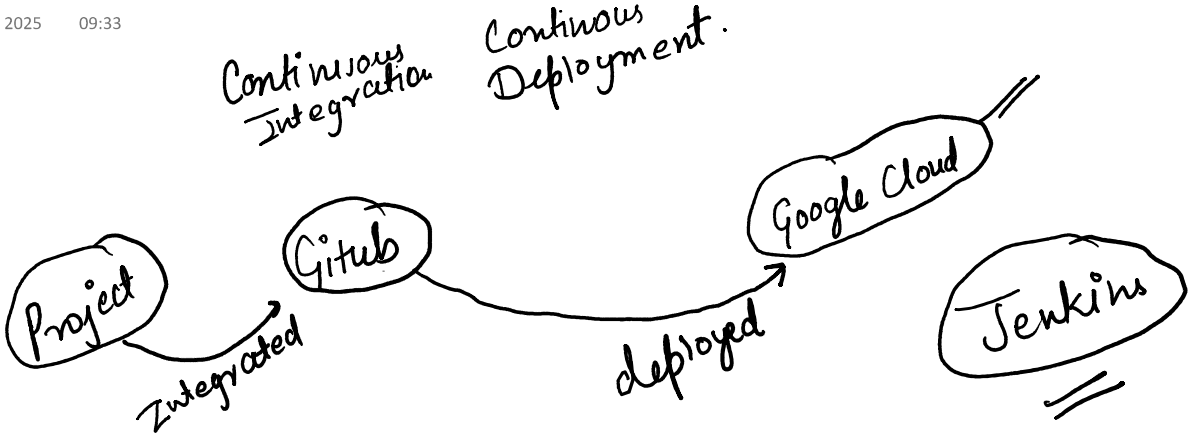
DATA VERSIONING

11 January 2025 16:16



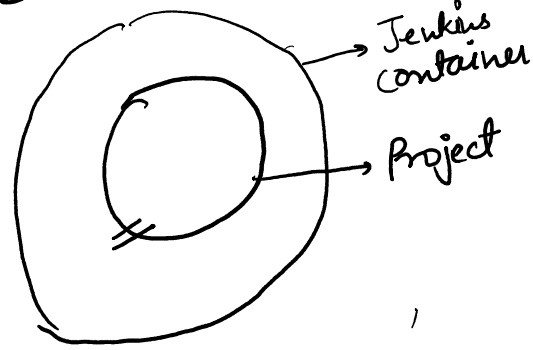
CI-CD DEPLOYMENT

12 January 2025 09:33



1. Setup Jenkins Container
2. Github Integration
3. Dockerization of Project (Dockerfile)
4. Create a venv in your Jenkins
5. Build Docker Image of your Project → Push to GCR (Google Cloud Registry)
6. Extract image from GCR → Push to Google Cloud Run

DinD
Docker in Docker



App is deployed

Done....