2025

4Geeks Academy: data science cohort 12

DAY 31: ML APP DEPLOYMENT

TODO

ML APP DEPLOYMENT

Parts list, workflow

MOVIE RECOMMENDATION SYSTEM

Finish movie recommendation system (course materials repo - substitute for ‘Recommendation Systems - Your Future with Data’, Recommendation Systems module)

DEPLOY

Deploy movie recommendation system web app to Render

TOPICS

01 DEPLOYMENT PARTS LIST

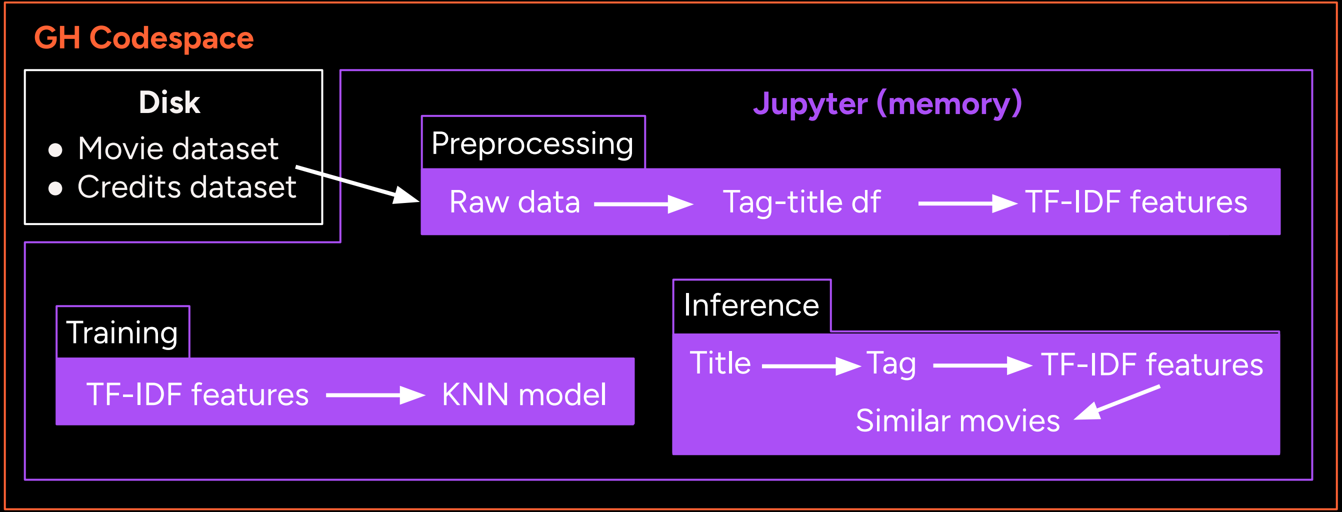
02 DEPLOYMENT WORKFLOW

DEPLOYMENT PARTS LIST

STARTING POINT

Working KNN recommendation model with TF-IDF features in Jupyter notebook

- **Raw data:** movie & credits dataframes
- **Tag-title df:** ‘tag’ feature and movie title dataframe
- **TF-IDF matrix:** ‘tag’ features encoded as TF-IDF matrix
- **Model:** KNN trained on TF-IDF feature matrix

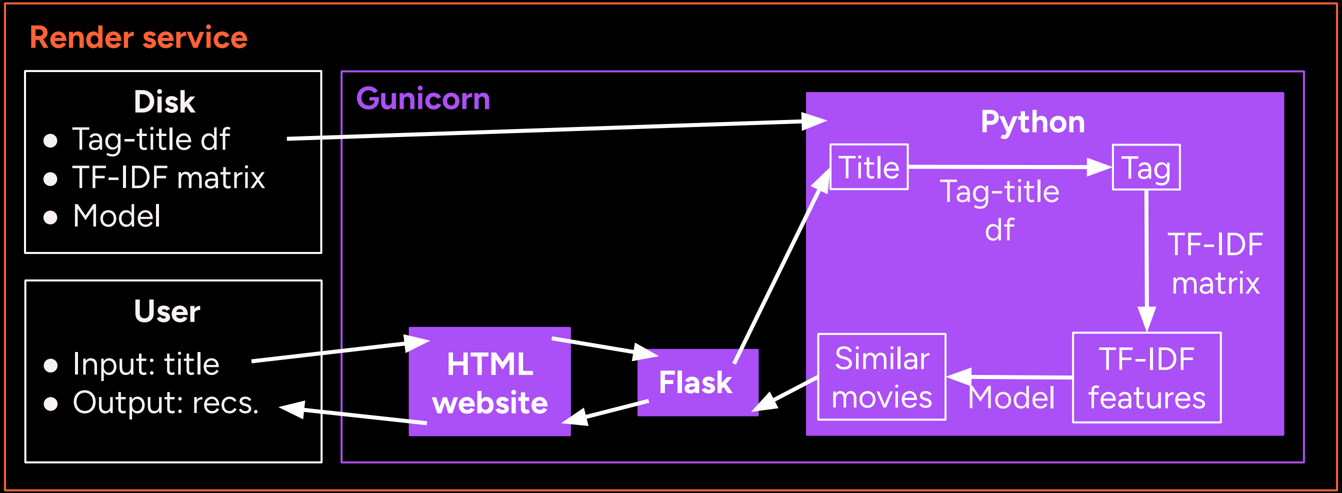


DEPLOYMENT PARTS LIST

DEPLOYMENT

Web app where user enters movie title, gets back similar movies

- **Gunicorn:** runs everything, serves the web page to users
- **HTML website:** rendered by Flask from template, served to the user by gunicorn
- **Flask:** renders HTML website, sends & receives data - go-between for Python and user
- **Python:** handles asset loading, making recommendations



DEPLOYMENT WORKFLOW

SAVE ASSETS FROM NOTEBOOK

Save assets needed to make recommendation to data & models directories:

- Tag-title df
- TF-IDF matrix
- KNN model

REFACTOR RECOMMENDATION FUNCTION

In a app.py file under src/, write a Python function that does the following:

- Loads assets
- Takes title as argument
- Returns recommendations as list

BUILD AND DEPLOY FLASK APP

- Add index.html template in src/templates
- Define flask function in src/app.py (see lines 11-33 in example)
- Deploy to Render (see README instructions)