STREAMLIT – DEPLOYMENT MODULE

Subjective Test

1.What is Streamlit and what are its main features?

A Streamlit is an open-source Python framework for data scientists and AI/ML engineers to deliver data apps with only a few lines of code and Build and deploy powerful data apps in minutes.

The features of streamlit are:

a) It is easy to use
b) It has lots of Editing options
c) Has interactive widgets
d) Can do customizations
e) Can Deploy models

2.How does Streamlit differ from other web application frameworks like Flask or Django?

Flask or Django are the frameworks used to build wide range of web applications.

These frameworks require the knowledge of HTML, CSS, JavaScript and so on.

For deployment they require more setup and configuration.

Streamlit is designed for Data Science and Machine Learning applications.

It is easy to use and the apps can be developed with few lines of python code which is easy and understandable.

Deployment of the app also takes few minutes of time.

3.What are some typical use cases for Streamlit?

i) Creating interactive dashboards to visualize and interact with data using charts, graphs, tables ect.

ii) Model testing is done by building apps to demonstrate and test the machine learning models and allowing the users to input data and do predictions.

iii) Prepare reports based on user input.

iv) We can develop tools to explore and analyze large datasets, to find patterns and insights.

4.How do you create a simple Streamlit app?

To create a simple Streamlit app, we can follow these simple steps:

Step 1: Install the Streamlit using pip

->pip install streamlit

Step 2: Write a one line code to check if the streamlit is installed or not and run it

->streamlit hello

Step 3: Create a new Python file by importing the streamlit library and write a simple code

```
Eg:  import streamlit as st
st.title('Hello Streamlit!')
st.header("Let's see if it works!")
st.subheader("Yes it does!")
st.text("I like Python and Streamlit")
st.image("Image.jpg")
st.button("Click Me!")
st.video("Galaxy.MP4")
```

The code contains different texts, titles, header, subheader, image, button and we can add many functions to the code to make the app interactive.

Step 4: Run the app using ‘streamlit run app.py’ on the command prompt or in the terminal of the python environment. The app automatically opens in the browser.

5.Can you explain the basic structure of a Streamlit script?

The basic structure of streamlit script is:

1)Import the Streamlit

2)Define the components of streamlit(title, text, images, widgets…)

3)Run the app

6.How do you add widgets like sliders, buttons, and text inputs to a Streamlit app?

By using widgets, streamlit allows to put buttons, sliders, text inputs into the app.

->For buttons we use st.button()

->For slider we use st.select_slider()

->For text inputs we use st.text_input()

7.How does Streamlit handle user interaction and state management?

Streamlit handle user interaction and state management by simplifying the development of the app, by automating the updates and leveraging the Python's flow. They do not store any information about the user interactions. It provides a very simple way to create apps.

8.What are some best practices for organizing and structuring a Streamlit project?

i)When a Streamlit project is organized, it becomes easy for the user to find the files, and more over saves the time of the user.

i)By other means we can divide the code into parts like data preprocessing, loading the data, data visualizations and so on.

iii)By using different parameters we can customize the inputs.

iv)By adding comments to the code makes it easy to understand the code by anyone who refers to it.

v)By implementing an error free code.

9.How would you deploy a Streamlit app locally?

To deploy a Streamlit app locally, you can run it using the streamlit run command.

"streamlit run file_name.py"

10.Can you describe the steps to deploy a Streamlit app?

1) Install Streamlit

2) Prepare the Streamlit App

3) Run the App (use streamlit run app.py)

4) Put your app in a public GitHub repo

5) Sign into share.streamlit.io.

6) Click 'Deploy an app' and then paste in your GitHub URL.

7) Deploy the app on Streamlit

11.What is the purpose of the requirements.txt file in the context of Streamlit deployment?

The 'requirements. txt' file specifies the packages to be installed. The versions of the packages must be specified to avoid the 'it works on my machine' problem.