PART 2 – RESEARCH & CONCEPT ANALYSIS QUESTIONS

1.Differences between front-end and backend applications

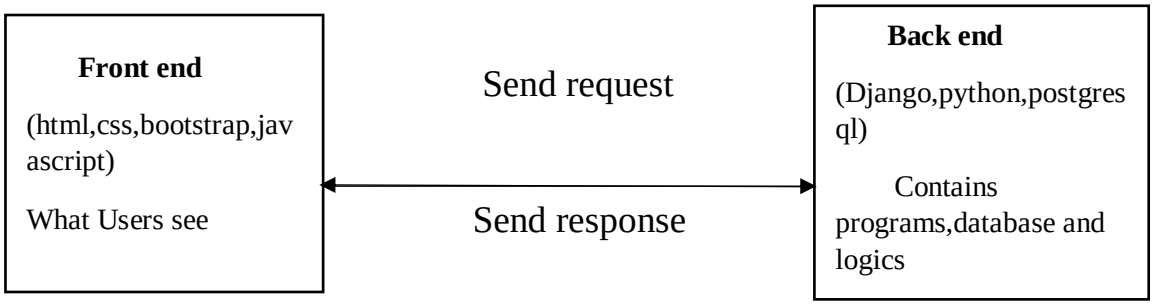
Front-end:

- This is the area where the user see and interact with
- It includes buttons,images,colors,text,and other formatting icons
- This is the user look and feel part
- This created by html,css,bootstrap,js
- This is run the client softwares like browsers

Back-end:

- The part that the user cannot see**.**
- Includes databases, authentication, logic**.**
- Built using languages like Java, Python, Php**,** etc.
- It runs on the server.

Diagram



2.API

- Api is the application programming interface.
- It allows two applications to talk to each other.

In weather app

Client:

- It asks for weather using browser

- Sends a request to the server, like Give me today's weather.
- Displays the weather on the screen after receiving

Server:

- it stores weather data from the sensor
- it accept the user request and process it
- then send the response to the browser

request:

- it send the message
- send using http through the internet
- example: give today's weather

response:

- The server replies to the client with the weather data.
- Sent back in json format.

JSON:

- It is the simple text format used to send between client and server
- It is the key-value paired data
- Example: {
  "temperature": 29,
  "city": "India",
  "weather_type": "too cold"
  }

3. Cloud Computing:

- Cloud computing is the way that using servers for run apps and store files instead of using your own computers

Three Companies:

- Netflix – Watch videos in online without downloading.
- Gmail – Send and receive messages through online
- WhatsApp – do video calls, and messages in online using this cloud servers.

4. Generative AI

- Generative AI is a type of artificial intelligence
- it can create new content like text, images, music, videos based on what it learned.
- It learns from existing data.
- Examples include writing, drawing, composing, or coding.

Three real world use cases:

1. **ChatGPT**: Can write emails, stories, and can answer questions.

2.**GEMINI:** Can create pictures, designs, and even diagrams better

3.**Music & Video Creation**: Can compose new songs and generate short videos

5. (i) Database:

- Databases are used to store large amount of data
- It is two types.they are database management system(dbms) and relational database management system(rdbms)
- Dbms are file type.rdbms are table type.
- We can store and retrieve data using databases.
- It possible to work with conditions and aggregate functions
- Example: mysql,postgresql,mongoDB

(ii) Version control git:

- Using git we can track our code changes
- It is useful for version controlling
- We can create branches and developers can upload their projects saftely the merge finally
- It offer commads like init,commit,etc….
- Example : github,gitlab

PART 3 – APPLIED CASE STUDY (Analysis & planning)

A.Requirement Breakdown:

1.HTML:

- Use html for create the structure of the webpage

- Useful for create customer form layout

2.CSS:

- Important for styling and coluring

3.js:

- It is useful for adding user interactions
- Example:alert confirmations, onclick events

4.python

- For backend logic

5.database(postgresql):

- Should need for stores customers details and store orders details

6.Api's:

- Needed for communications of frontend and backend,database,chatbot
- It allows transfer orders and dashboard updates

Cloud hosting:

- Should need for deplot the website
- For customers can access anytime

Ai/chatbot

- Used to create simple FAQ chatbot