

Q1) what are the characteristics of Rich Internet application (RIA)?

⇒ ① Rich internet applications are web-based applications that provide a rich and engaging user experience.

② They are typically built using technologies like HTML5, CSS, Javascript, AJAX or frameworks like React, Angular, Vue.

③ characteristics of RIA:

(i) Enhanced interactivity

① RIA's provide a highly interactive user experience with features such as drag and drop and real-time user feedback without requiring full-page reloads.

(ii) Improved performance

① RIA's use asynchronous data allowing the application to fetch only the required data from the server.

(iii) Desktop-like user interface

① RIA's mimic the look and feel of desktop applications

(iv) Cross platform compatibility

① RIA's are designed ensuring compatibility across different operating system and various devices.

(v) Offline functionality

① Many RIA's can function partially or fully offline, allowing users to access data and edit data without an active internet connection



(vi) Asynchronous communication

(a) RIAs use technologies like AJAX or WebSocket for asynchronous communication with server.

(vii) Rich media support

(a) RIAs can handle and display multimedia content like audios and videos.

(viii) Scalability & flexibility

(a) RIA's are highly scalable and flexible, making them suitable for applications with dynamic user bases.

(ix) Enhanced security

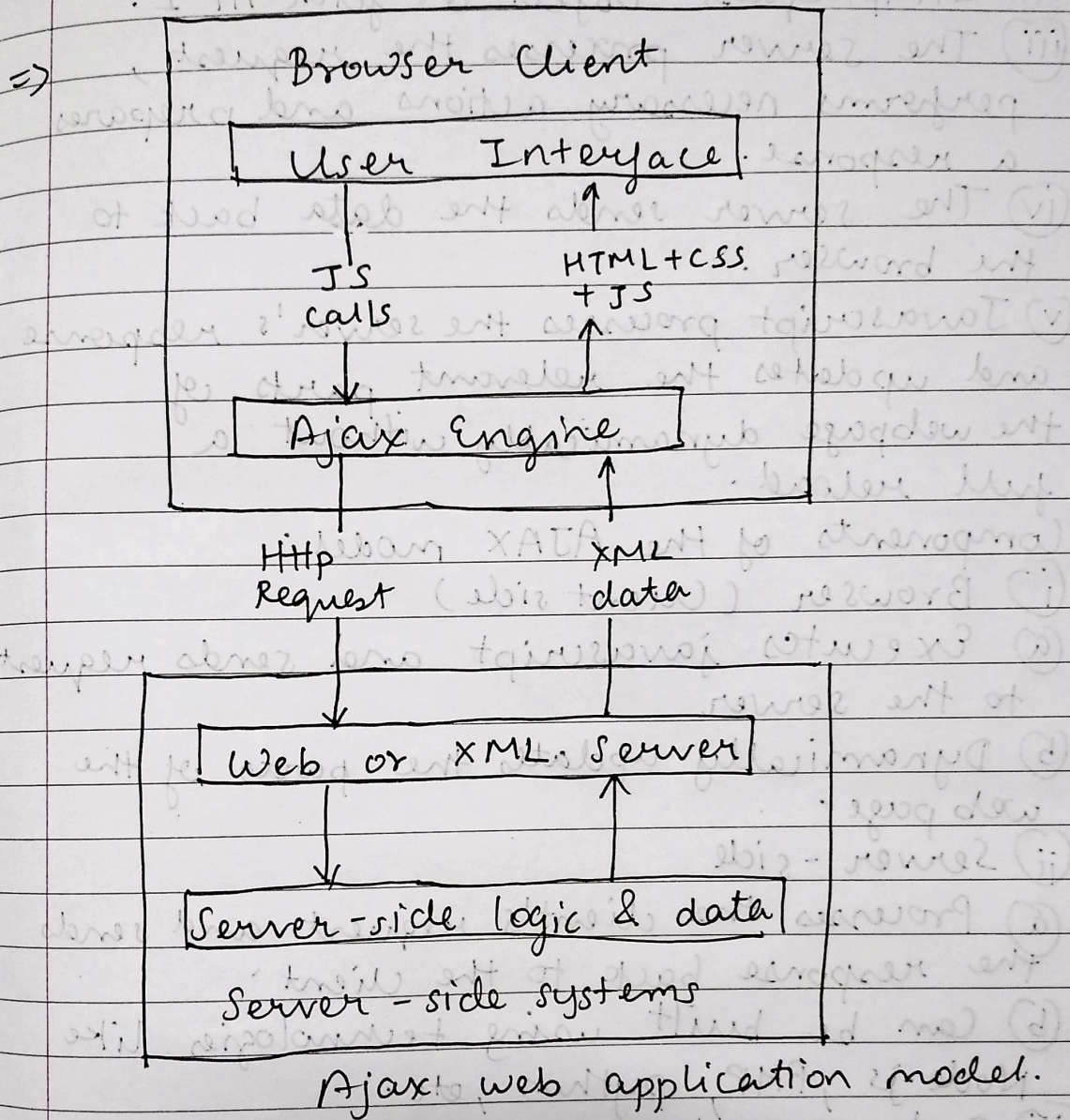
(a) Modern RIA's implement security mechanisms to protect user data.

(x) Reduced server load

(a) RIAs perform many computations on the client side instead of server-side.



Q2) Explain in detail AJAX web Application model with neat diagram



① AJAX is also known as Asynchronous Javascript and XML. It is a technique that allows web applications to send and receive data asynchronously without requiring a full-page reload.

② Working

① A user interacts with the webpage i.e. clicks a button or submits the form



(ii) The browser sends an HTTP request to the server asynchronously using the XMLHttpRequest object or fetch API.

(iii) The server processes the request, performs necessary actions and prepares a response.

(iv) The server sends the data back to the browser.

(v) Javascript processes the server's response and updates the relevant parts of the webpage dynamically without a full reload.

(3) Components of the AJAX model:

(i) Browser (Client side)

(a) Executes javascript and sends request to the server

(b) Dynamically updates the parts of the web page

(ii) Server - side

(a) Processes the client's request and sends the response back to the client.

(b) Can be built using technologies like Node.js, PHP, python, etc.

(iii) Data Format

(a) Data is typically exchanged in formats like JSON or XML.

Q3) What is AJAX ? Explain its role in web apps?

=>

↑  
Refer Q2

↑  
Refer Q1