

Web Programming(CS4032)**Sessional-I Exam**

Date: Feb 24, 2025

Course Instructor(s)

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Total Time: 1 hour

Total Marks: 40

Total Questions: 3

Roll No

Section

Student Signature

- Attempt all questions on the answer sheet
- ONE A4 Size handwritten cheat sheet with Roll# written on top of the sheet is allowed.

CLO 1: Demonstrate understanding of fundamental web technologies (HTML, CSS, JS)**Question 1****[5 marks]**

Scenario: You are managing a news website that delivers real-time news articles to a global audience. However, users in different countries report high latency when accessing the website. Some users experience slow image loading and delayed page rendering. Scenario Details are below:

- The web application and database are hosted in a single data center in the US.
- Traffic is highly distributed, with users accessing the site from Asia, Europe, & South America.
- The website serves static content (images, videos, CSS) and dynamic content (news articles, user comments).

Your Task:

1. Identify the **performance issue** in this setup.
2. Suggest **two solutions** to improve content delivery speed for global users.
3. Would using a **Content Delivery Network (CDN)** or **adding more servers in different regions** be a better solution to improve website speed for global users? Explain your choice.

CLO 2: Apply web programming principles to create responsive and functional interactive web apps**Question 2****[20 marks]**

You are given an API server with the address **backend.hireTalent.io** and the following endpoint:

API Endpoint: /applicants/search?applicantId=id

Response (if the applicant ID is valid)

```
{
  "name": "John Doe",
  "email": "johndoe@example.com",
  "experience": "5 years"
}
```

Response (if the applicant ID is invalid)

```
{
  "success": false,
}
```

"message": "Invalid applicant ID"

Task: Create a Webpage with

- A textbox for entering an applicant ID.
- A "Search" button to initiate the search.
- A `<div>` element (`id="applicantContainer"`) to display the applicant's details.

1

Applicant Name: Ali Ahmed
 Years of Experience: 5
 Email: ali.ahmed@gmail.com

Functionality:

1. When the HR enters an applicant ID and clicks "Search," an API request is sent to `/applicants/search?applicantId=id` using the Fetch API.
2. While the request is in progress, set the text of `applicantContainer` to "Loading..." (Hint: use `.textContent` attribute in js).
3. Once the API response is received:
 - If the applicant exists, display their name, email, and experience inside `applicantContainer` in vertical format. (Hint: you may need to use the `.innerHTML` attribute to embed applicant details in the div).
 - If the ID is invalid, show the error message from the response inside `applicantContainer`, styled in "red".

Question 3

[10 marks]

Display the output of the following code snippet using the concepts of Event loop/Async in JS.

```
console.log("Start");

function do_later() {
  console.log("Call at the end");
}

setTimeout(() => {
  console.log("Timeout 1");
}, 4000);

Promise.resolve().then(() => {
  console.log("Promise 1");
  return Promise.resolve();
}).then(() => {
  console.log("Promise 2");
});
```

```
(async () => {
  console.log("Inside async function");
  await Promise.resolve();
  console.log("After await");
})();

setTimeout(() => {
  console.log("Timeout 2");
}, 3000);

do_later();

console.log("End");
```