School of Computer Engineering & Technology
Class: Third Year B.Tech CSE (Semester V)
Course: Full Stack Development

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MIT WORLD PEACE UNIVERSITY | PUNE
TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS
|| विश्वशान्तिर्धुवं ध्रुवा ||

FSD Laboratory 02

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Aim: Design and develop a responsive web page using Bootstrap front end framework.

Objectives:

1. To understand HTML tags
2. To learn the styling of web pages using CSS
3. To learn Bootstrap Front End Framework.

Theory:

1. Bootstrap Grid System.

The Bootstrap Grid System is a powerful layout system used to create responsive, mobile-first web designs. It is based on a 12-column grid layout, which allows developers to divide the screen into 12 equal columns. The grid system is flexible and enables content to be arranged in a variety of ways, depending on the screen size.

- **Basic Structure:**
  - The grid system is wrapped within a `.container` or `.container-fluid`.
  - Rows (`.row`) are used to group columns.
  - Columns (`.col`) are the building blocks, and they can be defined with classes like `.col-6`, `.col-md-4`, `.col-lg-3`, etc., to span different numbers of columns on various screen sizes.
- **Responsive Grid Classes:**
  - `.col-xs-*`: Extra small devices (portrait phones, less than 576px).
  - `.col-sm-*`: Small devices (landscape phones, 576px and up).
  - `.col-md-*`: Medium devices (tablets, 768px and up).
  - `.col-lg-*`: Large devices (desktops, 992px and up).
  - `.col-xl-*`: Extra large devices (large desktops, 1200px and up).

2. Bootstrap .container and .container-fluid class
`.container`:

- The `.container` class provides a responsive fixed-width container. It has a maximum width that adjusts at each responsive breakpoint (e.g., 540px for small devices, 720px for medium, 960px for large, and 1140px for extra-large screens).
- The content inside a `.container` is centered horizontally on the page.

`.container-fluid`:

- The `.container-fluid` class creates a full-width container, spanning the entire width of the viewport, regardless of the screen size.
- It's used when you want your content to stretch across the entire screen, providing more space for layouts.

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FAQ:
1. What is a responsive website?

A responsive website is a site that automatically adjusts its layout, images, and content to fit the screen size and resolution of the device being used. This ensures an optimal viewing experience, whether on a desktop, tablet, or smartphone. The key benefits of a responsive website include better user experience, improved SEO, and reduced need for multiple versions of the site (e.g., a separate mobile site).
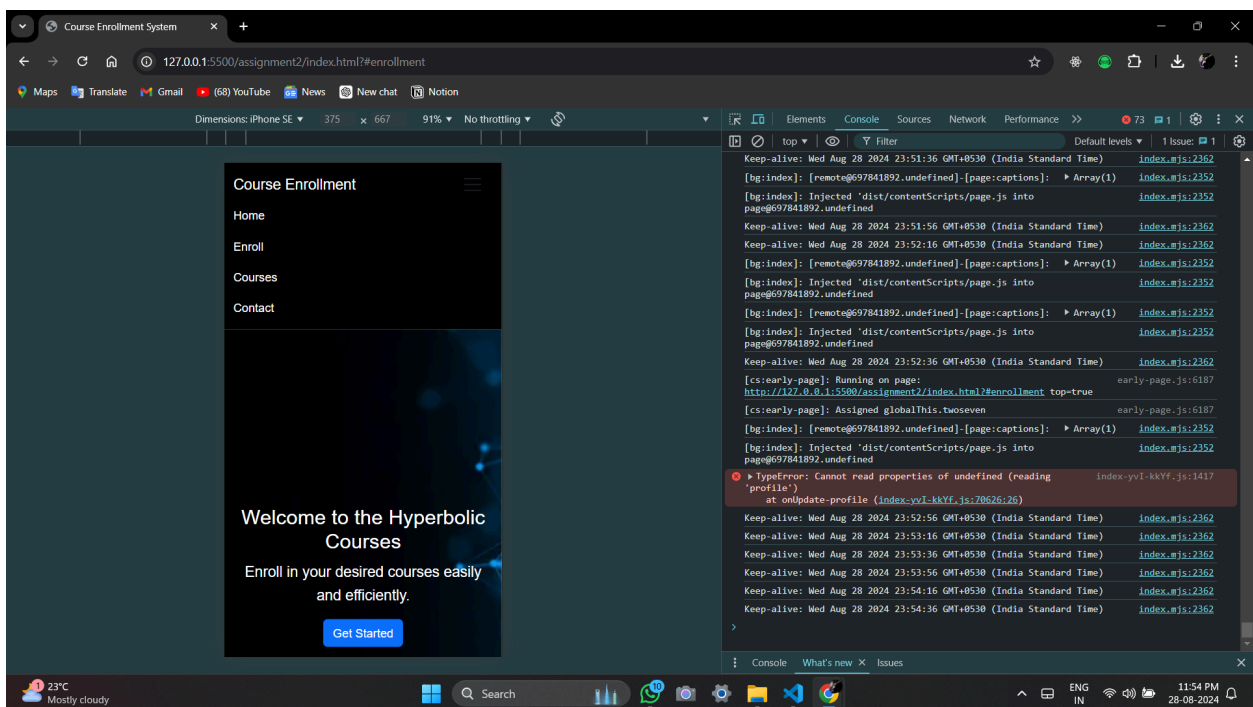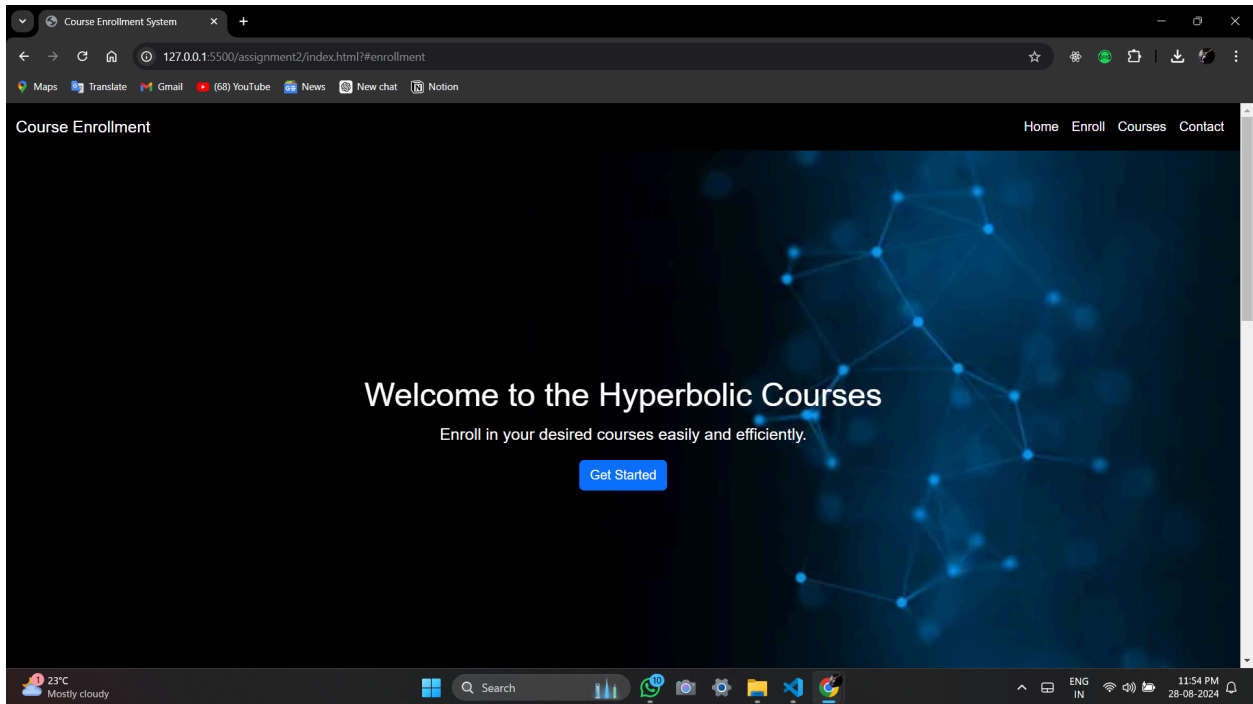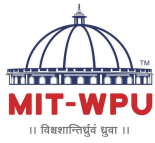
- **Key Characteristics:**
  - Flexible grids and layouts.
  - Responsive images and media queries.
  - Consistent user experience across devices.

2. How Bootstrap helps to design a responsive website?

Bootstrap makes designing a responsive website straightforward by providing a responsive grid system, pre-designed responsive components, and utility classes.

- **Grid System:** The 12-column grid system in Bootstrap is mobile-first, meaning it is designed to work on smaller screens first and then scale up to larger screens. This ensures content is well-organized and accessible on any device.
- **Responsive Components:** Bootstrap includes a wide range of components like navigation bars, buttons, forms, and modals that are all responsive by default. These components automatically adapt to different screen sizes, improving usability.
- **Utility Classes:** Bootstrap offers various utility classes for spacing, alignment, display, and visibility, which help in fine-tuning the responsiveness of elements without writing additional CSS.

Output: Screenshots of the output to be attached.

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Dimensions: iPhone SE ▼   375   x   667   91% ▼   No throttling ▼

Elements   Console   Sources   Network   Performance

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Problem Statement:

Design and develop a responsive web page (For example student registration, course enrollment, library management system, online shopping system etc.) using Bootstrap front end framework. Web pages should contain HTML5 elements (Use all possible formatting for example font, colour etc.).

Web page should include various

- images,

- links within the page,
- tables
- lists
- form elements
- paragraphs
- links to other pages for navigation,
- new tabs.

Use Cascaded Style Sheets (CSS) to style the web pages designed. Make use of
- Three types of styles (Inline, Internal and External)
- border,
- margins,
- padding,
- navigation,
- dropdown list
- tag selector
- class selector
- id selector
- exploring background image and position property etc.