

**CMR INSTITUTE OF TECHNOLOGY**

**(UGC Autonomous)**

# (Approved by AICTE, Permanently Affiliated to JNTUH, Hyderabad, NAAC Accredited with ‘A’ Grade & NBA Accredited)

Kandlakoya (V), Medchal Road, Hyderabad – 501 401



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**FULL STACK WEB DEVELOPMENT LABORATORY**

III- B.Tech, II-Semester 2020-21

|  |  |
| --- | --- |
| **Name** |  |
| **Roll No** |  |
| **Section** |  |

CMR INSTITUTE OF TECHNOLOGY

**UGC AUTONOMOUS**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**CERTIFICATE**

**ACADEMIC YEAR: 2020-21**

*This is to certify that the bonafide record work done by*

*Mr. /Ms.*

*\_ \_\_\_ \_ \_*

*\_\_\_\_*



*bearing H.T. No. \_ of* ***III-B.Tech,***

1. ***Semester*** *in the* ***FULL STACK WEB DEVELOPMENT LAB***

*is satisfactorily completed.*

**Faculty In-charge Head of the Department**

**SYLLABUS**

# III-B.Tech.-II-Sem. L T P C

**Subject Code: CS-PCC-32 - - 2 1**

**Course Outcomes:** Upon completion of the course, the student will be able to

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CO – PO Mapping** | | | | |
| **POs** | **PO4** | **PO5** | **PO6** | **PO8** |
| **CO1** | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 |
| 3-Strong; 2-Medium; -Weak | | | | |

* 1. illustrate implementation procedure of full stack web development
  2. demonstrate HTML5, CSS5 scripting languages and Github
  3. make use of scripting languages in web development
  4. develop web applications using AJAX
  5. build real time applications using full stack web development

**List of Experiments**

1. Write code in HTML5 to develop simple webpage.
2. Write CSS5 & HTML5 Code to show Dropdown Menu.
3. Write HTML5, CSS and Javscript code to Create one-page website having different menu items.
4. Write a program in CSS to show your city with building and movingcars.
5. Write a program to validate web form using javascript.
6. Write jquery code to show websiteslider.
7. Show version control in Github.
8. Write a program in javascript to Create a user login system.
9. Create a website showing jquery slider.
10. Write a program to show user details using HTML, CSS & AJAX
11. Write a program to display options in a search engine using Ajax.

**Micro-Projects:** Student must submit a report on one of the following Micro–Projects before commencement of second internal examination.

1. Develop Project MyNote - A HTML5 App
2. Develop a Bookstore application by using HTML5, CSS, jquery in Github
3. Develop a shopping cart application by using HTML5, CSS, jquery in Github
4. Develop an e-learning system using HTML5, CSS, jquery in Github
5. Build a personal portfolio webpage using HTML5, CSS, jquery.
6. Develop google.com Search result page using HTML5, CSS, jquery & Ajax
7. Develop a webpage to display solar system using HTML5, CSS, jquery & Ajax
8. Build Tajmahal using CSS.
9. Build a Real-Time Markdown Editor with Node.js
10. Develop an User model covering, Registration, Email verification(send an email), Login (with remember me)
11. Develop Chess Game using HTML5, CSS, jquery & Ajax

**Reference:**

1. Full Stack Web Development Lab Manual, Department of CSE, CMRIT, Hyd.

### CMR INSTITUTE OF TECHNOLOGY

**VISION:** To create world class technocrats for societal needs

**MISSION:** Impart global quality technical education for a better future by providing appropriate learning environment through continuous improvement and customization

**QUALITY POLICY:** Strive for global excellence in academics and research to the satisfaction of students and stakeholders

### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (CSE)

**Vision:** To be a model for academic excellence and research in the field of computer science and engineering that prepares competent professionals with innovative skills, moral values and societal concerns.

**Mission:** Impart quality education through state-of-art curriculum, conducive learning environment and research with scope for continuous improvement leading to overall professional success**.**

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### PROGRAMME EDUCATIONAL OBJECTIVES (PEO’s)

**PEO1:** Graduate will be capable of practicing principles of computer science & engineering, mathematics and scientific investigation to solve the problems that are appropriate to the discipline.

**PEO2:** Graduate will be an efficient software engineer in diverse fields and will be a successful professional and/or pursue higher education and research.

**PEO3:** Graduate exhibits professional ethics, communication skills, teamwork and adapts to changing environments of engineering and technology by engaging in lifelong learning.

### PROGRAMME OUTCOMES (PO’s)

* 1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. **[PEO’s: 1,2 and 3] [PSO’s: 1,2 and 3]**
  2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. **[PEO’s: 1,2 and 3] [PSO’s: 1,2 and 3]**
  3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate

consideration for the public health and safety, and the cultural, societal, and environmental considerations**. [PEO’s: 1,2 and 3] [PSO’s: 1,2 and 3]**

* 1. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. **[PEO’s: 1,2 and 3] [PSO’s: 1,2 and 3]**
  2. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations. **[PEO’s: 1,2 and 3] [PSO’s: 1,2 and 3]**
  3. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. **[PEO’s: 2 and 3]**
  4. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. **[PEO’s: 1,2 and 3]**
  5. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. **[PEO’s: 1,2 and 3] [PSO’s: 2 and 3]**
  6. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. **[PEO’s: 1,2 and 3] [PSO’s: 3]**
  7. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. **[PEO’s: 1,2 and 3] [PSO’s: 2 and 3]**
  8. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. **[PEO’s: 1 and 3] [PSO’s: 2 and 3]**
  9. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. **[PEO’s: 1,2 and 3] [PSO’s: 1,2 and 3]**

### PROGRAMME SPECIFIC OUTCOMES (PSO’s)

* 1. Use mathematical abstractions and Algorithmic design along with open source programming tools to solve complexities involved in efficient programming**.[PO:1,2,3,4 and 5] & [PEO:1 and 2]**
  2. Ensure programming & documentation skills for each individual student in relevant subjects i.e., C, C++, Java, DBMS, Web Technologies (Development), Linux, Data Warehousing & Data Mining and on Testing Tools**.[PO:1,2,3,4,5,10 and 11] & [PEO:1,2 and 3]**
  3. Ensure employability and career development skills through Industry oriented mini & major projects, internship, industry visits, seminars and workshops. **[PO:6,7,8,9,10,11 and 12] & [PEO:1,2 and 3]**

### COURSE OUTCOMES

|  |  |
| --- | --- |
| **Course Outcome** | **Course Outcome Statements** |
| **1** | illustrate implementation procedure of full stack web development |
| **2** | demonstrate HTML5, CSS5 scripting languages and Github |
| **3** | make use of scripting languages in web development |
| **4** | develop web applications using AJAX |
| **5** | build real time applications using full stack web development |

1. **COURSE MAPPING WITH PEO’S, PO’S, PSO’S (No correlation: 0; Low: 1; Medium: 2; High: 3)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Course Title** | **PEO1** | **PEO2** | **PEO3** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **Full Stack Web developm ent Lab** | **3** | **3** | **3** |  |  |  | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  |

### MAPPING OF COURSE OUTCOMES WITH PEO’S, PO’S, PSO’S (No correlation: 0; Low: 1; Medium: 2; High: 3)

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| **Course Outcom es** | **PEO1** | **PEO2** | **PEO3** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO – 1** | **3** | **3** | **2** |  |  |  | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  |
| **CO – 2** | **3** | **3** | **2** |  |  |  | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  |
| **CO – 3** | **3** | **3** | **2** |  |  |  | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  |
| **CO – 4** | **3** | **2** | **3** |  |  |  | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  |
| **CO – 5** | **3** | **2** | **2** |  |  |  | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  |
| **CO – 6** | **3** | **2** | **3** |  |  |  | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  |

**INDEX**

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| --- | --- | --- | --- | --- | --- |
| **Experiment**  **No.** | **Name of the Experiment** | **Page** | **Date of**  **Experiment** | **Date of**  **Submission** | **Faculty**  **Sign** |
| 1 | Write code in HTML5 to develop simple webpage. |  |  |  |  |
| 2 | Write CSS5 & HTML5 Code to show Dropdown Menu. |  |  |  |  |
| 3 | Write HTML5, CSS and Javscript code to Create one-page website having different menu items. |  |  |  |  |
| 4 | Write a program in CSS to show your city with building and moving cars. |  |  |  |  |
| 5 | Write a program to validate web form using javascript. |  |  |  |  |
| 6 | Write jquery code to show website slider. |  |  |  |  |
| 7 | Show version control in Github. |  |  |  |  |
| 8 | Write a program in javascript to Create a user login system. |  |  |  |  |
| 9 | Create a website showing jquery slider. |  |  |  |  |
| 10 | Write a program to show user details using HTML, CSS & AJAX |  |  |  |  |
| 11 | Write a program to display options in a search engine using Ajax. |  |  |  |  |

### EXPERIMENT 1:

Write code in HTML5 to develop simple webpage.

### PROCEDURE:

Step 1: Include Bootstrap 4 from a CDN

Step 2: Use a <div> element with class .jumbotron to create a jumbotron:

Step 3: Use the .container class to create a responsive, fixed-width container.

Step4: Use the .col class on a specified number of elements, use three col elements, which gets a width of 33.33% each

### SOURCE CODE:

**VIVA QUESTIONS:**

### What is Bootstrap Grid System?

* 1. **What is Jumbotron in bootstrap?**

### What is image map in HTML5?

* 1. **What is <Div> tag?**

### What is <fig> in HTML5?

* 1. **What are the two types of web storage in HTML5?**

# EXPERIMENT 2:

Write CSS5 & HTML5 Code to show Dropdown Menu.

### PROCEDURE:

Use previous experiment as template for you website and add the following steps

Step1: The .dropdown class indicates a dropdown menu.

Step2: To open the dropdown menu, use a button or a link with a class of .dropdown- toggle and the data-toggle="dropdown" attribute.

Step3: Add the .dropdown-menu class to a <div> element to actually build the dropdown menu.

Step4: Then add the .dropdown-item class to each element (links or buttons) inside the dropdown menu.

Step5: Highlight a specific dropdown item with the .active class (adds a blue background color).

### SOURCE CODE

**`**

**VIVA QUESTIONS:**

# What are the CSS frameworks?

1. **Name some CSS style components?**

# What is the importance of Drag and Drop in HTML5?

1. **What is the global style for Bootstrap Default Typography?**

# Could you explain how to use the Dropdown plug-in in Bootstrap?

1. **What is SVG stands for?**

### EXPERIMENT 3:

Write HTML5, CSS and Javscript code to Create one-page website having different menu items.

### PROCEDURE:

Use previous experiment as template for you website and add the following steps

Step1: A standard navigation bar is created with the .navbar class, followed by a responsive collapsing class: .navbar-expand-xl|lg|md|sm

Step2: To add links inside the navbar, use a <ul> element with class="navbar-nav". Then add <li> elements with a .nav-item class followed by an <a> element with a .nav- link class:

Step3: Use any of the .bg-color classes to change the background color of the navbar (.bg-primary, .bg-success, .bg-info, .bg-warning, .bg-danger, .bg-secondary, .bg- dark and .bg-light)

### SOURCE CODE

**VIVA QUESTIONS:**

# Do you know how a navbar works in the Bootstrap?

1. **What is jQuery**?

# What is the difference between JavaScript and jQuery?

1. **What is the use of css( ) method in jQuery?**

# What is a CDN?

### EXPERIMENT 4.

Write a program in CSS to show your city with building and moving cars.

### PROCEDURE:

use previous experiment as template for you website and add the following steps

Step1: use Bootstrap 4 Images, Create responsive images by adding an .img-fluid class to the <img> tag.

Step2: The image will then scale nicely to the parent element.

The .img-fluid class applies max-width: 100%; and height: auto; to the image

### SOURCE CODE:

**VIVA QUESTIONS:**

1. Why do we use jQuery?
2. What are the effects methods used in jQuery?
3. What is the use of toggle() method in JQuery?

## Is it possible that jQuery HTML work for both HTML and XML document?

.

## Is jQuery a W3C standard?

### EXPERIMENT 5:

Write a program to validate web form using javascript. .

### PROCEDURE:

Use previous experiment as template for you website and add the following steps

Step1: Form controls automatically receive some global styling with Bootstrap:All

textual <input>, <textarea>, and <select> elements with class .form-control have a width of 100%.

Step2: Add a wrapper element with .form-group, around each form control, to ensure proper margins:

Step3: You can use different validation classes to provide valuable feedback to users. Add either .was-validated or .needs-validation to the <form> element, depending on whether you want to provide validation feedback before or after submitting the form. The input fields will have a green (valid) or red (invalid) border to indicate what's missing in the form. You can also add a .valid-feedback or .invalid-feedback message to tell the user explicitly what's missing, or needs to be done before submitting the form.

### SOURCE CODE:

**VIVA QUESTIONS**

## What is AJAX?

1. What are the security issues with AJAX?

## What are the tools for debugging AJAX applications?

1. What are the common AJAX frameworks?

## What is jquery filter method?

### EXPERIMENT 6:

Write jquery code to show the website slider.

### PROCEDURE

Step1: Include bootstrap.min.css, jquery.min.js, bootstrap.min.js in <head> Section Step2: Create outermost <div> with id="myCarousel" class="carousel slide"

data-ride="carousel" Step3: Add Indicators

Step4: Add Wrapper for slides Step5: Add Left and right controls Step6: Add Captions to Slides

### SOURCE CODE

**VIVA QUESTIONS**

1. What are the jQuery methods used to provide effects?
2. Which command will give a version of jQuery?
3. What are the basic selectors in jQuery?
4. What is the use of jQuery load method?
5. What are the two types of CDNs?

### EXPERIMENT 7.

Show version control in Github.

### PROCEDURE:

Step1: Downloading and Installing Git (go to <https://git-scm.com/downloads>)

Step2: Open a cmd window or terminal on your computer. and execute all commands. git --version

git config --global user.name "Your Name"

git config --global user.email <your email address> git config --list

git init git status git add .

git commit -m "first commit" git log --oneline

git checkout <second commit's number> index.html git remote add origin <repository URL>

git push -u origin master

git clone <repository URL>

### SOURCE CODE:

**VIVA QUESTIONS:**

## What is Git?

1. What is the difference between Git and Github?
2. What are the benefits of version control system?

## What is a repository in Git?

1. How to create a repository in Git?

## What is the difference between git pull and git fetch?

### EXPERIMENT 8:

Write a program in JavaScript to create a user login system.

### PROCEDURE:

Step1: Bootstrap Form Layouts

Step2: Wrap labels and form controls in <div class="form-group">

Step3: Add class .form-control to all textual <input>, <textarea>, and <select> elements Step4: Disable form submissions if there are invalid fields

### SOURCE CODE:

**VIVA QUESTIONS:**

## Explain Key Features of Bootstrap?

1. Define the key components of Bootstrap?
2. What are the different button styles in Bootstrap?

## What are bootstrap alerts?

1. Why Bootstrap is used for mobile web development?

### EXPERIMENT 9:

Create a website showing jquery slider.

### PROCEDURE:

Step1: Include bootstrap.min.css, jquery.min.js, bootstrap.min.js in <head> Section

Step2: Create outermost <div> with id="myCarousel" class="carousel slide"

data-ride="carousel"

Step3: Add Indicators

Step4: Add Wrapper for slides Step5: Add Left and right controls Step6: Add Captions to Slides

### SOURCE CODE:

**VIVA QUESTIONS**

* 1. *What is Node.js?*
  2. *What is the purpose of Node.js?*
  3. *What type of DBMS is MongoDB?*

## What is Angular?

* 1. What are the main advantages of Angular?

### EXPERIMENT 10:

Write a program to show user details using HTML, CSS & AJAX

### PROCEDURE

Step1: Create an XMLHttpRequest Object or Fetch API Step2: Send a Request to a Server

Step3: Handle AJAX - Server Response with The onreadystatechange Property

### SOURCE CODE:

**VIVA QUESTIONS**

1. What is the purpose of branching in GIT?
2. Mention the various Git repository hosting functions.
3. What is data binding in Angular?
4. What are the common AJAX frameworks
5. What are the directives in Angular?

### EXPERIMENT 11:

Write a program to display options in a search engine using Ajax.

### PROCEDURE:

Step1: Create an XMLHttpRequest Object or Fetch API Step2: Send a Request To a Server

Step3:Handle AJAX - Server Response with The onreadystatechange Property

### SOURCE CODE:

**VIVA QUESTIONS**

1. What is the purpose of XMLHttpRequest?
2. What are the properties of XMLHttpRequest?
3. What are the technologies used by AJAX?
4. What are the types of send ( ) method used for XMLHttpRequest?
5. Describe MVC in reference to angular.