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| **Aim:** Write code for a simple user registration form of an event  regform.html  <!DOCTYPE html>  <html lang="en">      <head>          <meta charset="UTF-8" />          <meta http-equiv="X-UA-Compatible" content=" IE=edge”/>          <meta              name="viewport"              content="width=device-width, initial-scale=1.0"          />          <link              rel="stylesheet"              href="styles.css"          />          <title>Registration form</title>      </head>      <body>          <div class="form-container">              <h1>Registration form!!</h1>              <form action="submit.html">                  <input                      type="text"                      placeholder="Enter your name"                      pattern="\w\*"                  />                  <input                      type="email"                      placeholder="Enter your email"                  />                  <input                      type="password"                      placeholder="Enter your password"                  />                  <input                      type="password"                      placeholder="Confirm password"                  />                  <div class="consent">                      <input type="checkbox" />                      I agree with the terms and conditions                  </div>                  <button type="submit">Register</button>              </form>          </div>      </body>  </html>  styles.css  \* {      margin: 0;      box-sizing: border-box;  }  .form-container {      width: 60%;      margin: 0 auto;      margin-top: 2rem;      padding: 2rem;      border: 2px solid dodgerblue;      border-radius: 6px;  }  .form-container > h1 {      margin-bottom: 1rem;  }  form {      display: flex;      flex-direction: column;      gap: 1rem;  }  input[type="text"],  input[type="email"],  input[type="password"] {      padding: 0.8rem 0.6rem;      border-radius: 6px;      border: 1px solid dodgerblue;      box-shadow: 0 2px dodgerblue;      outline: none;  }  input[type="text"]:focus {      border: 1px solid dodgerblue;      box-shadow: 0 2px dodgerblue;  }  form > button {      padding: 0.8rem;      color: white;      background-color: rgb(30, 144, 255);      border: none;      border-radius: 4px;  }  form > button:hover {      background-color: rgba(30, 144, 255, 0.8);      cursor: pointer;  }  body > h1 {      position: fixed;      top: 50%;      left: 50%;      transform: translate(-50%, -50%);  }  Output: | |
| **Aim:** Exploring Git and Github Commands  Checking git version    Initializing the repository  This creates a .git file which tracks your code changes    Putting meta information  Meta information must only be entered once and will be used later for interacting with the github repository.    Checking the status of files  A black screen with green text  Description automatically generated with low confidence  Adding the files  A screen shot of a computer  Description automatically generated with low confidence  Commiting the files with a message  A picture containing screenshot, font, green  Description automatically generated  Create the repository on github    Push the repository to github  First the remote is added using the URL of the repository  A screenshot of a computer program  Description automatically generated with low confidence  Output:  A screenshot of a computer  Description automatically generated with medium confidence  Aim: Practice Source code management on GitHub. Experiment with the source code written in exercise 1.  Create a new branch for editing    Switch to that branch which is: change\_title    Make changes to the html file  Before:  A screen shot of a computer program  Description automatically generated with low confidence  AfterA screen shot of a computer program  Description automatically generated with low confidence  We can see the changes using git diff  A picture containing text, screenshot, font  Description automatically generated  Track and commit the changes  A screenshot of a computer screen  Description automatically generated with low confidence  Switch to main    Merge the change\_title branch with the main branch  A picture containing screenshot, font, green  Description automatically generated  Push the repository to github  A screen shot of a computer program  Description automatically generated with low confidence  Output:  A screenshot of a computer program  Description automatically generated with medium confidence  Aim: Install Jenkins and set it up.  First install JDK 11 on your machine. The command for install openjdk-11 is given below:    Switch to version 11 in case you have other JDKs installed and check the current openjdk version.    Install Jenkins using the following command:    Start Jenkins server:      Go to port 8080, it should look like below.  A screenshot of a computer  Description automatically generated  Get the password from the location mentioned on the webpage and use it to unlock jenkins    Install all the suggested plugins  A screenshot of a computer  Description automatically generated  After installing the plugins you will be redirected and will have to create an account  Output:    Aim: To demonstrate continuous integration and development using Jenkins  Create a new item as shown below:  A screenshot of a computer  Description automatically generated  Enter the item name, select freestyle project and click on “OK”.    Enter the description, select GitHub project and enter the project url  A screenshot of a computer  Description automatically generated  In source code management, select git, add the repository url and change the branch to \*/main  A screenshot of a computer  Description automatically generated with low confidence  The result will look like this  After building the result is as follows:  A screenshot of a computer  Description automatically generated with low confidence  A screenshot of a computer  Description automatically generated with medium confidence  Go to the url mentioned above and check your build  A screenshot of a computer  Description automatically generated |
| Change the code in the github repository and commit it:  A screen shot of a computer program  Description automatically generated with low confidence  A screenshot of a computer  Description automatically generated with medium confidence  Build the project once more:  A screenshot of a computer  Description automatically generated with medium confidence  A screenshot of a computer  Description automatically generated with low confidence  A screenshot of a computer program  Description automatically generated with low confidence  Output:  A computer screen shot of a registration form  Description automatically generated with medium confidence |
| Aim: To explore docker commands for content management  Pull an image from docker hub.    See all images downloaded with docker using the below command:  A screenshot of a computer program  Description automatically generated with low confidence  Removing a docker image:  A picture containing screenshot, font, colorfulness, green  Description automatically generated  Running a docker image / creating a docker container:  A screenshot of a computer screen  Description automatically generated with medium confidence  Display all running containers:    Stop a running container:  A picture containing screenshot, green  Description automatically generated  Viewing a stopped container:    Executing a command within a running container:    Copy a file from within a docker container to local machine:  A picture containing screenshot, font, text, green  Description automatically generated  Create a new image from a modified container:  A screenshot of a computer screen  Description automatically generated with medium confidence  Save an image to a tar file and load it from a tar file:    Aim: Develop a simple containerized application using docker  Create a Dockerfile    Edit the Dockerfile to look as follows (note that you must first clone the github repository into the current one):    Build the docker image  A screenshot of a computer screen  Description automatically generated with medium confidence  Run the docker image    Output:  A screenshot of a computer  Description automatically generated with medium confidence  Aim: Integrate docker and Kubernetes  Open docker desktop    Go to settings:  A screenshot of a computer  Description automatically generated  Select kubernetes  A screenshot of a computer  Description automatically generated  Check the button which says: Enable kubernetes  A screenshot of a computer  Description automatically generated  Click on apply and restart  A screenshot of a computer  Description automatically generated  Verify whether Kubernetes is running using the following command    Output:    Aim: Automate the process of running containerized application developed in exercise 7 using Kubernetes  Build the docker image:    Push it to docker hub (make sure you have an account)  A screenshot of a computer program  Description automatically generated with medium confidence  Create a infra/k8s folder and put client.yaml in it with the following code:    Create the deployment:    Check the pods and services:  A screen shot of a computer  Description automatically generated with low confidence  Output:  Get the target port from client-srv and access that port:  A screenshot of a computer  Description automatically generated  Aim: Install and explore Selenium for automated testing.  Go to selenium.dev and install the stable JS version for Selenium.    Create a folder and run npm init to initialize the folder and create package.json.    Install the selenium package.A screenshot of a computer program  Description automatically generated with low confidence  In the npm documentation of selenium, install the webdriver for the browser of your choice.  A screenshot of a computer  Description automatically generated  Enable the safaridriver    Create an index.js file and add the following code in it:A screen shot of a computer program  Description automatically generated with low confidence  Run the file:    Output:  A screenshot of a computer  Description automatically generated  Aim: Write a simple program in JavaScript and perform testing using Selenium  Create a folder and run npm init to initialize the folder and create package.json.    Create a html webpage as shown in the next page:    Install selenium-webdriver and jest  A screenshot of a computer  Description automatically generated with medium confidence  Add the following code in index.test.js    Change the test script in package.json to be as follows:    Run the test:    Output:  A screenshot of a computer  Description automatically generated with medium confidence  A screenshot of a computer program  Description automatically generated with medium confidence  Aim : Develop test cases for the above containerized application using selenium:  Add a script to your application so that it performs basic validation to your input fields.    Build the docker image and run it using the dockerfile created in experiment 7    Run the docker image:  A screenshot of a computer program  Description automatically generated  Initialise the npm repository and install selenium-webdriver and jest.  A screenshot of a computer screen  Description automatically generated  Create index.test.js and add the following code in it:    A screen shot of a computer program  Description automatically generated  Go to package.json and change the test script to be as follows:  A screen shot of a computer code  Description automatically generated  Run the following in the terminal:    Output:  A screenshot of a computer program  Description automatically generated |