**Terna Engineering College**

**Computer Engineering Department**

Program: Sem VIII

**Course: Human Machine Interaction(HMI)**

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**LAB Manual**

**PART A**

(PART A : TO BE REFFERED BY STUDENTS)

**Experiment No.03**

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| --- | --- |
| **A.1** | **Aim:** |
|  | Design GUI for the data entry form for any application of selected domain which you have analyzed. |
|  |  |
| **A.2** | **Prerequisite:**   1. Knowledge about various domains. 2. Knowledge of user interface and various user interface (UI) elements. 3. Knowledge of interaction styles. |
|  |  |
| **A.3** | **Outcome:** |
|  | **After successful completion of this experiment students will be able to**   1. Apply HMI Principles to design good GUI. 2. Interact with GUI through various interaction styles. 3. Identify the components of graphical and Web interfaces and screens. |
|  |  |
| **A.4** | **Theory:** |
|  | * **GUI** * In computing, a **graphical user interface** (**GUI**, commonly pronounced *gooey*) is a type of user interface that allows users to interact with electronic devices with images (graphics) rather than text commands. * A GUI represents the information and actions available to a user through graphical icons and visual indicators such as secondary notation, as opposed to text-based interfaces, typed command labels or text navigation. * The actions are usually performed through direct manipulation of the graphical elements. * Designing the visual composition and temporal behavior of GUI is an important part of software application programming in the area of human-computer interaction. * Its goal is to enhance the efficiency and ease of use for the underlying logical design of a stored program, a design discipline known as usability. |
|  | * **The Concept of Direct Manipulation**   The term used to describe this style of interaction for graphical systems was first used by Shneiderman (1982). He called them “direct manipulation” systems, suggesting that they possess the following characteristics:   1. **The system is portrayed as an extension of the real world.** It is assumed that a person is already familiar with the objects and actions in his or her environment of interest. The system simply replicates them and portrays them on a different medium, the screen. A person has the power to access and modify these objects, among which are windows. A person is allowed to work in a familiar environment and in a familiar way, focusing on the data, not the application and tools. |
|  | 1. **Continuous visibility of objects and actions.** Like one’s desktop, objects are continuously visible. Reminders of actions to be performed are also obvious, labeled buttons replacing complex syntax and command names. Cursor action and motion occurs in physically obvious and intuitively natural ways. 2. **Actions are rapid and incremental with visible display of results.** Since tactile feedback is not yet possible (as would occur with one’s hand when one touches something), the results of actions are immediately displayed visually on the screen in their new and current form. Auditory feedback may also be provided. The impact of a previous action is quickly seen, and the evolution of tasks is continuous and effortless. 3. **Incremental actions are easily reversible.** Finally, actions, if discovered to be in corrector not desired, can be easily undone. |
| **A.5** | **Procedure:**   1. Design a user interface for data entry for any site/application. 2. This form should contain necessary label, text fields, icons, pictures, and buttons. 3. According to requirement validation of the form should be done.   **Example:**  Data-Entry-Form.gif |
|  | image1.png |

**PART B**

(PART B: TO BE COMPLETED BY STUDENTS)

***(Students must submit the soft copy as per following segments within two hours of the practical. The soft copy must be uploaded on the ERP or emailed to the concerned lab in charge faculties at the end of the practical in case the there is no ERP access available)***

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| --- | --- |
| Roll No.: 61 | Name: Sangita Toppo |
| Class: BE A | Batch: A3 |
| Date of Experiment: | Date of Submission: |
| Grade: |  |

|  |  |
| --- | --- |
| **B.1** | **Domain selected by student:** |
|  | Online News |
|  |  |
| **B.2.** | **Source Code of GUI :** |
|  | <!DOCTYPE html>  <html>  <head>  <meta charset="utf-8">  <title>Times Now</title>  <meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1">  <link rel="stylesheet" type="text/css" href="css/montserrat-font.css">  <link rel="stylesheet" type="text/css" href="fonts/material-design-iconic-font/css/material-design-iconic-font.min.css">  <link rel="stylesheet" href="css/style.css"/>  </head>  <body class="form-v10">    <div class="page-content">  <div class="form-v10-content">  <h1 class="news" style="  color: brown;  ">Newspaper Subscription</h1>  <form class="form-detail" action="#" method="post" id="myform">  <div class="form-left">  <h2>General Infomation</h2>  <div class="form-row">  <select name="title">  <option class="option" value="title">Title</option>  <option class="option" value="businessman">Mr.</option>  <option class="option" value="reporter">Mrs.</option>  <option class="option" value="secretary">Ms.</option>  </select>  <span class="select-btn">  <i class="zmdi zmdi-chevron-down"></i>  </span>  </div>  <div class="form-group">  <div class="form-row form-row-1">  <input type="text" name="first\_name" id="first\_name" class="input-text" placeholder="First Name" required>  </div>  <div class="form-row form-row-2">  <input type="text" name="last\_name" id="last\_name" class="input-text" placeholder="Last Name" required>  </div>  </div>  <div class="form-row">  <input type="password" name="company" class="company" id="company" placeholder="Password" required>  </div>  <div class="form-row">  <input type="password" name="company" class="company" id="company" placeholder="Password Confirmation" required>  </div>  <div class="form-group">  <div class="form-row form-row-3">  <input type="date" name="business" class="business" id="business" placeholder="Birthdate" required>  </div>  <div class="form-row form-row-4">  <select name="Gender">  <option value="employees">Gender</option>  <option value="trainee">Male</option>  <option value="colleague">Female</option>  </select>  <span class="select-btn">  <i class="zmdi zmdi-chevron-down"></i>  </span>  </div>  </div>  </div>  <div class="form-right">  <h2>Contact Details</h2>  <div class="form-row">  <input type="text" name="street" class="street" id="street" placeholder="Street + Nr" required>  </div>  <div class="form-row">  <input type="text" name="additional" class="additional" id="additional" placeholder="Additional Information" required>  </div>  <div class="form-group">  <div class="form-row form-row-1">  <input type="text" name="zip" class="zip" id="zip" placeholder="Zip Code" required>  </div>  <div class="form-row form-row-2">  <select name="place">  <option value="place">Place</option>  <option value="Street">Street</option>  <option value="District">District</option>  <option value="City">City</option>  </select>  <span class="select-btn">  <i class="zmdi zmdi-chevron-down"></i>  </span>  </div>  </div>  <div class="form-row">  <select name="country">  <option value="country">Country</option>  <option value="Vietnam">Vietnam</option>  <option value="Malaysia">Malaysia</option>  <option value="India">India</option>  </select>  <span class="select-btn">  <i class="zmdi zmdi-chevron-down"></i>  </span>  </div>  <div class="form-group">  <div class="form-row form-row-1">  <input type="text" name="code" class="code" id="code" placeholder="Code +" required>  </div>  <div class="form-row form-row-2">  <input type="text" name="phone" class="phone" id="phone" placeholder="Phone Number" required>  </div>  </div>  <div class="form-row">  <input type="text" name="your\_email" id="your\_email" class="input-text" required pattern="[^@]+@[^@]+.[a-zA-Z]{2,6}" placeholder="Your Email">  </div>  <div class="form-checkbox">  <label class="container"><p>I do accept the <a href="#" class="text">Terms and Conditions</a> of your site.</p>  <input type="checkbox" name="checkbox">  <span class="checkmark"></span>  </label>  </div>  <div class="form-row-last">  <input type="submit" name="register" class="register" value="Register Now">  </div>  </div>  </form>  </div>  </div>  <!-- The core Firebase JS SDK is always required and must be listed first -->  <script src="https://www.gstatic.com/firebasejs/8.2.9/firebase-app.js"></script>  <!-- TODO: Add SDKs for Firebase products that you want to use  https://firebase.google.com/docs/web/setup#available-libraries -->  <script src="https://www.gstatic.com/firebasejs/8.2.9/firebase-analytics.js"></script>  <script>  // Your web app's Firebase configuration  // For Firebase JS SDK v7.20.0 and later, measurementId is optional  var firebaseConfig = {  apiKey: "AIzaSyBpin44-CY3g1QBmtIN67B3GrYVoRXq0z4",  authDomain: "timesnow-by-ad.firebaseapp.com",  projectId: "timesnow-by-ad",  storageBucket: "timesnow-by-ad.appspot.com",  messagingSenderId: "434656623448",  appId: "1:434656623448:web:41e8554506d82d26ec832d",  measurementId: "G-971BGLCR3L"  };  // Initialize Firebase  firebase.initializeApp(firebaseConfig);  firebase.analytics();  </script>  </body>  </html> |
|  |  |
| **B.3** | **Screen Snapshot of GUI Design:**  image3.png |
| **B.4** | **Direct Manipulation** |
|  | (Write down what is direct manipulation and its’ advantages)  **Direct manipulation** is an interaction style in which **the** objects of interest in **the**UI are visible and can be acted upon via physical, reversible, incremental actions that receive immediate feedback. advantages are:   * Visually presents task concepts. * Easy to learn. * Errors can be avoided more easily. * Encourages exploration. * High subjective **satisfaction**. * Recognition memory (as opposed to cued or free recall memory) |
|  |  |
| **B.4** | **Conclusion:**  Learnt about html,css, material-ui and linergradients |

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