UNIVERSITI MALAYSIA TERENGGANU

CSM3103

BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH HONORS

LAB 6

SEMESTER II 2023/2024

Prepared for:

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Lab 6

Follow the following tutorial

1. https://www.youtube.com/watch?v=BOITPwChVP4
2. https://www.youtube.com/watch?v=KnAsYNhI_CY
3. https://www.youtube.com/watch?v=yB4LTavBWtw
4. https://www.youtube.com/watch?v=4Ux_ZHY5KM8
5. https://www.youtube.com/watch?v=C4ZnTCi50bc
6. https://www.youtube.com/watch?v=j_iYK9BejEE

each tutorial source code should be upload as submission

Task 1 – Explore how to use Firebase

1. Create a firebase project
    a. Go to the firebase website https://firebase.google.com and sign in with your google account
    b. Click on get started and then add project to create a new firebase project
    c. Follow the prompts to setup your project by providing a project name and enabling the necessary Firebase Service
2. Setup the firebase Realtime database
    a. In you firebase project dashboard, click on realtime database from the left-side menu
    b. Click create database and choose the location for your database
    c. Set the security rules for ypur database – start with allowing read and writes access to anyone by selecting start in test mode
3. Make sure you can access the CDN properties which is like the following text

```
<script src="https://www.gstatic.com/firebasejs/8.6.1/firebase-app.js"></script>
<script src="https://www.gstatic.com/firebasejs/8.6.1/firebase-database.js"></script>
<script>
  var firebaseConfig = {
    apiKey: "YOUR_API_KEY",
    authDomain: "YOUR_AUTH_DOMAIN",
    databaseURL: "YOUR_DATABASE_URL",
    projectId: "YOUR_PROJECT_ID",
    storageBucket: "YOUR_STORAGE_BUCKET",
    messagingSenderId: "YOUR_MESSAGING_SENDER_ID",
    appId: "YOUR_APP_ID"
  };
  firebase.initializeApp(firebaseConfig);
</script>
```

Output:

```
<script type="module">
  // Import the functions you need from the SDKs you need
  import { initializeApp } from "https://www.gstatic.com/firebasejs
  import { getAnalytics } from "https://www.gstatic.com/firebasejs/
  // TODO: Add SDKs for Firebase products that you want to use
  // https://firebase.google.com/docs/web/setup#available-libraries

  // Your web app's Firebase configuration
  // For Firebase JS SDK v7.20.0 and later, measurementId is option
  const firebaseConfig = {
    apiKey: "AIzaSyAIRwobf1tTLK1EX-pn4-4tZUcvZ4VuWFI",
    authDomain: "task1-c5b5e.firebaseapp.com",
    databaseURL: "https://task1-c5b5e-default-rtdb.asia-southeast1.
    projectId: "task1-c5b5e",
    storageBucket: "task1-c5b5e.appspot.com",
    messagingSenderId: "178002704419",
    appId: "1:178002704419:web:3f4d36711b9032581c9996",
    measurementId: "G-30KL5HQ1RF"
  };

  // Initialize Firebase
  const app = initializeApp(firebaseConfig);
  const analytics = getAnalytics(app);
</script>
```

Task 2 – write data into firebase

1. Create a simple html, put the following code inside your html body:

```
<h2>Simple Input</h2>

<div class="row">

        <h4>Enter ID</h4><input type="text" id="inputID">
      <h4>enter Name</h4><input type="text" id="inputName">
       <h4>enter Age</h4><input type="number" id="inputAge"><br>
       <button id="btnInsert">Insert Data</button>

</div>
<script type="module">
    //Firebase Code

    //Your Code

</script>
```

2. Copy everything you get in Task1-3 into //firebase Code section
3. Write the following code into the //Your Code section
    a. Import the selected method from google related to Firebase-Database

    ```
    import {getDatabase, set, get, remove, update, ref, child}
    from "https://www.gstatic.com/firebasejs/9.22.1/firebase-database.js";
    ```

    b. Create the holder for the database using the imported method
        getDatabase()

    ```
    const db = getDatabase();
    ```

    c. Retrieve the object from html into the JavaScript

    ```
    var inputID = document.querySelector("#inputID");
    var inputName = document.querySelector("#inputName");
    var inputAge = document.querySelector("#inputAge");

    var btnInsert = document.querySelector("#btnInsert");
    ```

    d. Add a listener for a click event on btnInsert

    ```
    btnInsert.addEventListener("click",funInsertData);
    ```

    e.   Add the function funInsertData with the following code

```
function funInsertData(){
    set(ref(db,"people/"+ inputID.value),{
        name:inputName.value,
        ID:inputID.value,
        age:inputAge.value
    })
    .then(()=>{
        alert("Data added succesfully!")
    })
    .catch((error)=>{
        alert(error)
    });
}
```

  f. Can you write the same process but using the <form> tag?
  g. Write a HTML file that receive only ID as input, your task now is to delete the record in database that match the given id.
  h.

Code:

```
<> task2.html  X

C: > CSM3103-frontend > Lab6 > <> task2.html > {} "task2.html" > @ html > @ body
  1    <!DOCTYPE html>
  2    <html lange="en">
  3        <head>
  4            <title>Lab 6: Task2</title>
  5            <meta charset="utf-8">
  6        </head>
  7        <body>
  8            <h2>Simple Input</h2>
  9
 10            <div class="row">
 11                <label>Enter ID:</label>
 12                <input type="text" id="inputID"><br><br>
 13                <label>Enter Name:</label>
 14                <input type="text" id="inputName"><br><br>
 15                <label>Enter Age:</label>
 16                <input type="number" id="inputAge"><br><br>
 17                <select id="gender">
 18                    <option value="Male">Male</option>
 19                    <option value="Female">Female</option>
 20                </select><br><br>
 21                <button id="btnInsert">Insert</button>
 22                <button id="btnSelect">Select</button>
 23                <button id="btnUpdate">Update</button>
 24                <button id="btnDelete">Delete</button>
 25            </div>
 26
 27            <script type="module">
 28            import { initializeApp, getAnalytics } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-app.js";
 29            import { getDatabase, set, ref } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-analytics.js";
 30
 31                const db = getDatabase();
 32
 33                var inputID = document.getElementById("inputID");
 34                var inputName = document.getElementById("inputName");
 35                var inputAge = document.getElementById("inputAge");
 36
 37                var btnInsert = document.getElementById("btnInsert");
```

```javascript
31              const db = getDatabase();
32
33              var inputID = document.getElementById("inputID");
34              var inputName = document.getElementById("inputName");
35              var inputAge = document.getElementById("inputAge");
36
37              var btnInsert = document.getElementById("btnInsert");
38              var btnSelect = document.getElementById("btnSelect");
39              var btnUpdate = document.getElementById("btnUpdate");
40              var btnDelete = document.getElementById("btnDelete");
41
42              function funInsertData(){
43                  set(ref(db, "Students/" + inputID.value),{
44                      name:inputID.value,
45                      ID:inputID.value,
46                      age:inputAge.value
47                  })
48                  .then(()=>{
49                      alert("Data added successfully!")
50                  })
51                  .catch((error)=>{
52                      alert("unsuccesful, error" + error)
53                  });
54              }
55
56              btnInsert.addEventListener("click, funInsertData");
57
58              const firebaseConfig = {
59              apiKey: "AIzaSyAIRwobf1tTLK1EX-pn4-4tZUcvZ4VuWFI",
60              authDomain: "task1-c5b5e.firebaseapp.com",
61              databaseURL: "https://task1-c5b5e-default-rtdb.asia-southeast1.firebasedatabase.app",
62              projectId: "task1-c5b5e",
63              storageBucket: "task1-c5b5e.appspot.com",
64              messagingSenderId: "178002704419",
65              appId: "1:178002704419:web:3f4d36711b9032581c9996",
66              measurementId: "G-30KL5HQ1RF"
67              };
```

Output:

Simple Input

Enter ID: [   ]

Enter Name: [   ]

Enter Age: [   ]

[Male   v]

[Insert] [Select] [Update] [Delete]

Task 3

1. Explore how to create a login page by using the firebase authorization
2. Explore how to write data into firebase from html form
3. Create a simple form to store a simple data (name, address, nophone) into a firebase
4. Explore how to retrieve data from firebase and display the data as a list in a web page
5. Create firebase authorization login
6. Once login succeeds, display a landing page which display page in (4)

7. If user click a plus button in a landing page, user will be directed to page in 3

Code:
Task3(Landing).html

```
C: > CSM3103-frontend > Lab6 > <> task3(Landing).html > {} "task3%28Landing%29.html" > ⊘ html > ⊘ head > ⊘ link
 1   <!DOCTYPE html>
 2   <html lang="en">
 3   <head>
 4       <meta charset="UTF-8">
 5       <meta name="viewport" content="width=device-width, initial-scale=1.0">
 6       <title>Home</title>
 7       <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.4.1/dist/css/bootstrap.min.css"
 8       integrity="sha384-Vkoo8x4CGsO3+Hhxv8T/Q5PaXtkKtu6ug5TOeNV6gBiFeWPGFN9MuhOf23Q9Ifjh" crossorigin="anonymous">
 9       <style>
10           body {
11               display: flex;
12               justify-content: center;
13               align-items: center;
14               height: 100vh;
15               width: 100vw;
16               margin: 0px;
17           }
18           .container {
19               text-align: center;
20           }
21       </style>
22   </head>
23   <body>
24       <div class="container">
25           <h3>HERE YOUR PROFILE !</h3>
26           <div id="userInfo">
27               <!-- User information will be displayed here -->
28           </div>
29       </div>
30
31       <script type="module">
32           import { initializeApp, getAnalytics } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-app.js";
33           import { getDatabase, set, ref } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-analytics.js";
34
35           const firebaseConfig = {
36               apiKey: "AIzaSyAIRwobf1tTLK1EX-pn4-4tZUcvZ4VuWFI",
```

```
C: > CSM3103-frontend > Lab6 > <> task3(Landing).html > {} "task3%28Landing%29.html" > ⊘ html > ⊘ head > ⊘ link
34
35           const firebaseConfig = {
36               apiKey: "AIzaSyAIRwobf1tTLK1EX-pn4-4tZUcvZ4VuWFI",
37               authDomain: "task1-c5b5e.firebaseapp.com",
38               databaseURL: "https://task1-c5b5e-default-rtdb.asia-southeast1.firebasedatabase.app",
39               projectId: "task1-c5b5e",
40               storageBucket: "task1-c5b5e.appspot.com",
41               messagingSenderId: "178002704419",
42               appId: "1:178002704419:web:3f4d36711b9032581c9996",
43               measurementId: "G-30KL5HQ1RF"
44           };
45
46           // Initialize Firebase
47           const app = initializeApp(firebaseConfig);
48           const db = getDatabase(app);
49
50           // Function to display user information
51           function displayUserInfo() {
52               const user = JSON.parse(sessionStorage.getItem('user')) || JSON.parse(localStorage.getItem('user'));
53               console.log('User from session or local storage:', user);
54               if (user) {
55                   const dbRef = ref(db, `users/${user.username}`);
56                   get(dbRef).then((snapshot) => {
57                       if (snapshot.exists()) {
58                           const userData = snapshot.val();
59                           document.getElementById('userInfo').innerHTML = `
60                               <p><strong>Name:</strong> ${userData.name}</p>
61                               <p><strong>Address:</strong> ${userData.address}</p>
62                               <p><strong>Phone Number:</strong> ${userData.phone}</p>
63                           `;
64                       } else {
65                           document.getElementById('userInfo').innerHTML = "<p>No user data found.</p>";
66                       }
67                   }).catch((error) => {
68                       console.error("Error getting user data: ", error);
69                       document.getElementById('userInfo').innerHTML = "<p>Error retrieving user data.</p>";
```

```
47          const app = initializeApp(firebaseConfig);
48          const db = getDatabase(app);
49
50          // Function to display user information
51          function displayUserInfo() {
52              const user = JSON.parse(sessionStorage.getItem('user')) || JSON.parse(localStorage.getItem('user'));
53              console.log('User from session or local storage:', user);
54              if (user) {
55                  const dbRef = ref(db, `users/${user.username}`);
56                  get(dbRef).then((snapshot) => {
57                      if (snapshot.exists()) {
58                          const userData = snapshot.val();
59                          document.getElementById('userInfo').innerHTML = `
60                              <p><strong>Name:</strong> ${userData.name}</p>
61                              <p><strong>Address:</strong> ${userData.address}</p>
62                              <p><strong>Phone Number:</strong> ${userData.phone}</p>
63                          `;
64                      } else {
65                          document.getElementById('userInfo').innerHTML = "<p>No user data found.</p>";
66                      }
67                  }).catch((error) => {
68                      console.error("Error getting user data: ", error);
69                      document.getElementById('userInfo').innerHTML = "<p>Error retrieving user data.</p>";
70                  });
71              } else {
72                  document.getElementById('userInfo').innerHTML = "<p>User not logged in.</p>";
73              }
74          }
75
76          // Call the function to display user information
77          displayUserInfo();
78      </script>
79  </body>
80  </html>
```

Task3(Login).html

```
1   <!DOCTYPE html>
2   <html lang="en">
3   <head>
4       <meta charset="UTF-8">
5       <meta name="viewport" content="width=device-width, initial-scale=1.0">
6       <title>Login</title>
7       <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.4.1/dist/css/bootstrap.min.css"
8           integrity="sha384-Vkoo8x4CGsO3+Hhxv8T/Q5PaXtkKtu6ug5TOeNV6gBiFeWPGFN9MuhOf23Q9Ifjh" crossorigin="anonymous">
9       <script src="https://cdnjs.cloudflare.com/ajax/libs/crypto-js/4.2.0/crypto-js.min.js"></script>
10      <style>
11          body {
12              display: flex;
13              justify-content: center;
14              align-items: center;
15              height: 100vh;
16              width: 100vw;
17              margin: 0px;
18          }
19      </style>
20  </head>
21  <body>
22
23      <div class="mb-5">
24          <h3 class="mb-3">Login</h3>
25          <input type="text" placeholder="Username" id="userInp" class="form-control mb-3">
26          <input type="password" placeholder="Password" id="passInp" class="form-control mb-3">
27          <div class="custom-control custom-switch mb-3">
28              <input type="checkbox" class="custom-control-input" id="customSwitch1">
29              <label class="custom-control-label" for="customSwitch1">Keep me Logged In</label>
30          </div>
31          <button type="button" id="sub_btn" class="btn w-100 btn-outline-primary mb-3">Sign In</button>
32          <a href="Task3 (Register).html" class="badge badge-secondary py-1 w-100">Want To Create A New Account?</a>
33      </div>
34
35      <script type="module">
36          import { initializeApp, getAnalytics } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-app.js";
```

```html
    34
    35      <script type="module">
    36          import { initializeApp, getAnalytics } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-app.js";
    37          import { getDatabase, set, ref } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-analytics.js";
    38
    39          const firebaseConfig = {
    40              apiKey: "AIzaSyAIRwobf1tTLK1EX-pn4-4tZUcvZ4VuWFI",
    41              authDomain: "task1-c5b5e.firebaseapp.com",
    42              databaseURL: "https://task1-c5b5e-default-rtdb.asia-southeast1.firebasedatabase.app",
    43              projectId: "task1-c5b5e",
    44              storageBucket: "task1-c5b5e.appspot.com",
    45              messagingSenderId: "178002704419",
    46              appId: "1:178002704419:web:3f4d36711b9032581c9996",
    47              measurementId: "G-30KL5HQ1RF"
    48              };
    49
    50          // Initialize Firebase
    51          const app = initializeApp(firebaseConfig);
    52          const db = getDatabase(app);
    53
    54          const username = document.getElementById('userInp');
    55          const pass = document.getElementById('passInp');
    56          const submit = document.getElementById('sub_btn');
    57
    58          // Authentication process
    59          function authenticateUser() {
    60              const dbRef = ref(db);
    61              get(child(dbRef, "users/" + username.value)).then((snapshot) => {
    62                  if (snapshot.exists()) {
    63                      let dbpass = snapshot.val().pass;
    64                      if (dbpass === pass.value) {
    65                          login(snapshot.val());
    66                      } else {
    67                          alert("Incorrect password");
    68                      }
    69                  } else {
```

```html
    61              get(child(dbRef, "users/" + username.value)).then((snapshot) => {
    62                  if (snapshot.exists()) {
    63                      let dbpass = snapshot.val().pass;
    64                      if (dbpass === pass.value) {
    65                          login(snapshot.val());
    66                      } else {
    67                          alert("Incorrect password");
    68                      }
    69                  } else {
    70                      alert("User does not exist");
    71                  }
    72              }).catch((error) => {
    73                  alert("Error: " + error.message);
    74              });
    75          }
    76
    77          // Login process
    78          function login(user) {
    79              let keepLoggedIn = document.getElementById('customSwitch1').checked;
    80              if (!keepLoggedIn) {
    81                  sessionStorage.setItem('user', JSON.stringify(user));
    82                  window.location = "Task3 (Landing).html";
    83              } else {
    84                  localStorage.setItem('user', JSON.stringify(user));
    85                  window.location = "Task3 (Landing).html";
    86              }
    87          }
    88
    89          // Assign the event
    90          submit.addEventListener('click', authenticateUser);
    91      </script>
    92  </body>
    93  </html>
```

Task3(Register).html

```html
1   <!DOCTYPE html>
2   <html lang="en">
3   <head>
4       <meta charset="UTF-8">
5       <meta name="viewport" content="width=device-width, initial-scale=1.0">
6       <title>Store Data in Firebase</title>
7       <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.4.1/dist/css/bootstrap.min.css"
8       integrity="sha384-Vkoo8x4CGsO3+Hhxv8T/Q5PaXtkKtu6ug5TOeNV6gBiFeWPGFN9MuhOf23Q9Ifjh" crossorigin="anonymous">
9   </head>
10  <body>
11
12      <div class="container mt-5">
13          <h3>Store Data in Firebase</h3>
14          <form id="dataForm">
15              <div class="form-group">
16                  <label for="name">Name:</label>
17                  <input type="text" class="form-control" id="name" placeholder="Enter your name">
18              </div>
19              <div class="form-group">
20                  <label for="address">Address:</label>
21                  <input type="text" class="form-control" id="address" placeholder="Enter your address">
22              </div>
23              <div class="form-group">
24                  <label for="phone">Phone Number:</label>
25                  <input type="text" class="form-control" id="phone" placeholder="Enter your phone number">
26              </div>
27              <div class="form-group">
28                  <label for="username">New username:</label>
29                  <input type="text" class="form-control" id="username" placeholder="Enter your username">
30              </div>
31              <div class="form-group">
32                  <label for="pass">New password:</label>
33                  <input type="password" class="form-control" id="pass" placeholder="Enter your password">
34              </div>
35              <button type="submit" class="btn btn-primary">Submit</button>
36          </form>
```

```html
34              </div>
35              <button type="submit" class="btn btn-primary">Submit</button>
36          </form>
37      </div>
38
39      <script type="module">
40          import { initializeApp, getAnalytics } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-app.js";
41          import { getDatabase, set, ref } from "https://www.gstatic.com/firebasejs/10.11.1/firebase-analytics.js";
42
43          const firebaseConfig = {
44              apiKey: "AIzaSyAIRwobf1tTLK1EX-pn4-4tZUcvZ4VuWFI",
45              authDomain: "task1-c5b5e.firebaseapp.com",
46              databaseURL: "https://task1-c5b5e-default-rtdb.asia-southeast1.firebasedatabase.app",
47              projectId: "task1-c5b5e",
48              storageBucket: "task1-c5b5e.appspot.com",
49              messagingSenderId: "178002704419",
50              appId: "1:178002704419:web:3f4d36711b9032581c9996",
51              measurementId: "G-30KL5HQ1RF"
52              };
53
54          // Initialize Firebase
55          const app = initializeApp(firebaseConfig);
56          const db = getDatabase(app);
57
58          const dataForm = document.getElementById('dataForm');
59
60          dataForm.addEventListener('submit', (e) => {
61              e.preventDefault(); // Prevent default form submission
62              const name = dataForm['name'].value;
63              const address = dataForm['address'].value;
64              const phone = dataForm['phone'].value;
65              const username = dataForm['username'].value;
66              const pass = dataForm['pass'].value;
67
68              // Store data in Firebase under "users/{username}"
69              set(ref(db, "users/" + username), {
```

```
54          // Initialize Firebase
55          const app = initializeApp(firebaseConfig);
56          const db = getDatabase(app);
57
58          const dataForm = document.getElementById('dataForm');
59
60          dataForm.addEventListener('submit', (e) => {
61              e.preventDefault(); // Prevent default form submission
62              const name = dataForm['name'].value;
63              const address = dataForm['address'].value;
64              const phone = dataForm['phone'].value;
65              const username = dataForm['username'].value;
66              const pass = dataForm['pass'].value;
67
68              // Store data in Firebase under "users/{username}"
69              set(ref(db, "users/" + username), {
70                  name: name,
71                  address: address,
72                  phone: phone,
73                  username: username,
74                  pass: pass
75              })
76              .then(() => {
77                  alert("Data stored successfully!");
78                  // Optionally, redirect to another page
79                  window.location.href = "Task3 (Login).html";
80              })
81              .catch((error) => {
82                  alert("Error: " + error.message);
83              });
84          });
85      </script>
86
87  </body>
88  </html>
```
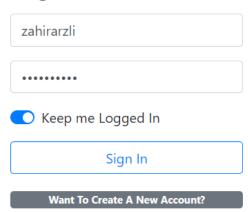
Output:

Register

Store Data in Firebase

Name:

Husna Zahira

Address:

773 Kampung Baru

Phone Number:

014-443-5578

New username:

zahirarzli

New password:

•••••••••

Submit

Login

Login

zahirarzli

••••••••••

🔵 Keep me Logged In

Sign In

Want To Create A New Account?

Home

HERE YOUR PROFILE !

Link Github:
https://github.com/zahirarzli/Lab-6-CSM3103-Front-End