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DEPARTMENT: BE.AIML 3rd year

STUDENT NM-ID: 9BDC4B0B4F75EB2A63C4376F42D68BED

ROLL NO: 960523148004

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Completed the project named as Phase-5

TECHNOLOGY PROJECT NAME: IBM-FE-DYNAMIC IMAGE SLIDER

SUBMITTED BY,

NAME:K.Archana Devi
MOBILE NO:8870872614

IBM-FE-DYNAMIC IMAGE SLIDER

Phase-5:Project Demonstration & Documentation

- **FinalDemo Walkthrough:**

  - **Introduction**

    - **Start by introducing the project:**

      - ***"This is a Dynamic Image Slider built using HTML, CSS, and JavaScript. It allows users to view multiple images with smoothtransitions, navigation controls, and autoplay features."***

  - **CoreFeaturesDemonstration**

    - **Walkthroughthe main functionality step by step:**

      - **AutomaticSlideshow**

        - **Show how images change automatically after a set interval.**
        - **Mention: *"The sliderauto-plays,ensuringusersdon't needtointeract manually."***

- **Manual Navigation**
  - **Next/Previous Buttons – Click on them to navigate images.**
  - **Dots/Indicators (if added) – Show how clicking a dot jumps to a specific image.**
- **Responsive Design**
  - **Resize the browser window to show how the slider adjusts for mobile, tablet, and desktop.**
- **Smooth Transitions**
  - **Highlight CSS animations or JavaScript transitions you added (fade, slide, zoom).**

□ **Technical Explanation**

- **Briefly explain how it works:**
  - **Frontend: Built with HTML, CSS, JavaScript.**
  - **Image Handling: Images stored locally or fetched dynamically.**
  - **State Management: Current image index tracked in JS.**
  - **Autoplay Logic: setInterval() for automatic sliding.**
  - **Event Listeners: For navigation buttons and dots.**

Enhancements

- **If you implemented extra features, highlight them:**

  - **Pause on Hover – Autoplay stops when the user hovers over the image.**
  - **Keyboard Navigation – Use left/right arrows to move.**

  - **Touch/Swipe Support – Mobile-friendly navigation.**
  - **Lazy Loading – Images load only when needed for performance.**

Testing & Results

- **Mention you tested across devices (desktop, mobile).**
- **Highlight performance (smooth, no lag).**
- **Ensure accessibility (alt tags, keyboard navigation).**

Deployment

- **Show where it's hosted (Netlify, Vercel, or GitHub Pages).**
- **Provide the live demo link.**

Conclusion

- **End with a short wrap-up:**

"The Dynamic Image Slider enhances user engagement with interactive, responsive, and visually appealing features. It can be integrated into product showcases, portfolios, or websites requiring image galleries."

- **Project Report**

  - **Abstract**

    The Dynamic Image Slider is an interactive web component designed to display multiple images in a visually engaging way. It allows users to view images through automatic transitions and manual navigation. The project demonstrates concepts of front-end development including HTML for structure, CSS for styling and animations, and JavaScript for dynamic functionality. This slider can be integrated into websites such as e-commerce platforms, portfolios, and galleries to enhance user experience.

  - **Problem Statement**

    Websites often require a clean and responsive way to showcase multiple images without cluttering the page. Traditional static image displays lack interactivity and engagement. The problem addressed by this project is creating an interactive, responsive, and dynamic image slider that enhances visual presentation while maintaining performance.

Objectives

- To design a user-friendly, responsive image slider.
- To implement automatic and manual navigation features.
- To provide smooth transitions and animations for better UX.
- To ensure compatibility across devices and browsers.
- To make the component reusable for integration in different projects.

Scope

- The project focuses on developing a frontend-only dynamic slider with the following:

  - Autoplay functionality with adjustable interval.
  - Manual navigation using next/previous buttons and indicators.
  - Responsive design for desktop and mobile.
  - Optional enhancements: pause on hover, swipe gestures, keyboard navigation.

Methodology

- **Tools & Technologies**

  - **Frontend Languages: HTML5, CSS3, JavaScript**
  - **Editor: Visual Studio Code**
  - **Version Control: Git/GitHub**
  - **Deployment: Netlify / Vercel / GitHub Pages**

- **Approach**

  - **UI Design – Wireframe and layout planning.**
  - **Core Features – Implement structure, styling, and functionality.**
  - **Enhancements – Add autoplay, transitions, and responsiveness.**
  - **Testing – Validate performance across devices/browsers.**
  - **Deployment – Host live demo for public access.**

- **System Design**

  - **UI Structure: Image container, navigation buttons, indicators.**
  - **Flow Diagram:**
    - **Page Load → First Image Displayed → Autoplay/Manual Navigation → Loop Continuously.**

- **Implementation**

- **Features Implemented**

- **Automatic sliding with set interval.**
- **Next/Previous navigation buttons.**
- **Indicator dots for quick navigation.**
- **Pause on hover (optional).**
- **Responsive adjustments for all devices.**

```
let index = 0;
const slides = document.querySelectorAll(".slide");

function showSlide(i) {
slides.forEach((slide, idx) => { slide.style.display
= idx === i ? "block" : "none";
});
}

function nextSlide() {


index = (index + 1) % slides.length;
showSlide(index);

}
setInterval(nextSlide, 3000);
showSlide(index);
```

- **Testing**

- **Functional Testing: Verified autoplay, buttons, and indicators.**
- **Responsive Testing: Checked on mobile, tablet, and desktop.**
- **Cross-browser Testing: Chrome, Firefox, Edge.**

Results

- **Successfully created a responsive and interactive image slider.**
- **Smooth performance with minimal resource usage.**
- **Can be easily integrated into websites for product showcases, portfolios, or banners.**

Conclusion

The Dynamic Image Slider effectively solves the need for interactive and responsive image presentation on websites. It is lightweight, customizable, and user-friendly. This project highlights essential front-end development skills and provides a reusable component for future web applications.

Future Enhancements

- **Add database/image API integration for dynamic image fetching.**
- **Add caption and description overlays.**
- **Include thumbnail navigation.**
- **Support for videos along with images.**

- **References**

  - **MDN Web Docs (HTML, CSS, JavaScript)**
  - **W3Schools Tutorials**
  - **GitHub Documentation**

oScreenshots/API Documentation

- **Screenshots Section**

  Include clear, labeled screenshots that show every core part of your image slider project.

No.	Screenshot Title	Description
1	Home Page (Main Slider View)	Displays the image slider with automatic transitions and navigation arrows. Shows dynamic image changes every few seconds.
2	Image upload Upload	Interface for users/admin to upload new images into the slider.

No.	Screenshot Title	Description
3	Image Preview Section	Shows how uploaded images appear before being added to the slider.
4	Transition Effect Demo	Demonstrates different transition effects such as fade, slide, zoom.
5	Layout	Screenshot of the slider displayed on mobile or tablet Responsive view, showing responsive adjustments.
6	Final Deployed Version	Hosted/Deployed version of the app (e.g., on Netlify, GitHub Pages, or Vercel).

- **API Documentation**

  If your slider fetches or stores images dynamically (from a backend like Flask, Node.js, or Firebase), document the API endpoints here

  - **Example External API (Optional)**
    If you used an image API (like Unsplash or Pexels):
    Unsplash API Example

    - **Base URL: https://api.unsplash.com/photos/random**

    - **Response Example:**

```
{
   "urls": {
   "full": "https://images.unsplash.com/photo-12345",
   "thumb": "https://images.unsplash.com/photo-
12345?crop=faces&fit=crop&w=200&h=200"
    },
   "description": "Beautiful landscape"
}
```

- **ChallengesandSolutions**

  - **Challenge:Implementing Smooth Image Transitions**

- **Description:**

  Creating seamless transitions between images without flickering or delay was difficult, especially when switching between auto-slide and manual navigation.

- **Solution:**

  Used CSS transitions and JavaScript timing functions (setInterval / clearInterval) to control animation speed. Optimized image preloading to ensure smooth rendering during transitions.

- **Challenge: Dynamically Loading and Managing Images**

  - **Description:**

    Initially, the slider displayed only static images. Adding new images dynamically from a folder or database without page refresh was challenging.

  - **Solution:**

    Integrated a JSON-based data structure / API endpoint to fetch image URLs dynamically. The JavaScript code updates the slider automatically whenever new images are added or removed.

- **Challenge: Ensuring Responsiveness Across Devices**

- **Description:**

  Images were getting cropped or distorted when viewed on different screen sizes (desktop, tablet, mobile).

- **Solution:**

  Used CSS Flexbox and media queries to make the layout fully responsive. Adjusted image container sizes with object-fit: cover to maintain aspect ratios across all devices.

- **Challenge: Adding Auto-Play and Manual Control Together**

  - **Description:**

    Combining auto-sliding with manual navigation buttons (Next/Previous) caused conflicts — clicking manually interrupted or broke the automatic slide timer.

  - **Solution:**

    Implemented a pause and resume mechanism — manual navigation pauses the auto-slide temporarily and then restarts it after a few seconds using JavaScript event listeners.

- **Challenge: Hosting and Deployment**

  - **Description:**

Deploying the slider online while keeping image paths and assets accessible was confusing at first.

- **Solution:**

  Used GitHub Pages / Netlify for deployment and relative paths for images. Verified that all assets were included in the repository and updated base URLs for hosted images.

- **Challenge: Enhancing User Interface and Effects**

  - **Description:**

    Making the slider visually appealing with animations, navigation dots, and hover effects while keeping performance fast.

  - **Solution:**

    Used CSS animations and lightweight JavaScript for transitions. Added navigation dots and hover highlights to improve interactivity without using heavy libraries.

o **GitHub README and Setup Guide**

- **Dynamic Image Slider Web Application**

A responsive and interactive image slider that allows users to view, upload, and manage images dynamically with smooth transitions and auto-play functionality. This project demonstrates front-end web development using HTML, CSS, and JavaScript, and can optionally connect to a backend (Flask / Node.js) for dynamic image fetching.

Features

- Automatic and manual image sliding
- Smooth transition effects (fade/slide/zoom)
- Responsive layout for all screen sizes
- Upload and manage images dynamically
- Play / Pause control with navigation arrows
- Lightweight and fast — no heavy libraries

Tech Stack

Layer	Technology
Frontend	HTML5, CSS3, JavaScript
Backend (Optional)	Flask / Node.js
Layer	Technology
Database (Optional)	JSON / SQLite / MySQL
Deployment	GitHub Pages / Netlify / Vercel

ProjectStructure

```
Dynamic-Image-Slider/
│
├── index.html
├── style.css
├── script.js
│
├── images/
│   ├── img1.jpg
│   ├── img2.jpg
│   └── img3.jpg
│
├── api/
│   └── server.py / app.js
│
└── README.md
```

Setup Guide

- **Clone the Repository**

  ```
  git clone https://github.com/username/dynamic-imageslider.git
  ```

- **Navigate into the Folder**

cd dynamic-image-slider Run the Project

- **If it's frontend-only:**
  - **Simply open index.html in your browser (double click or drag into Chrome/Edge).**
- **If using Flask (Python backend):**

  pip install flask

  python app.py
- **If using Node.js backend:**

  npm install

  node servers'

o**Final Submission**

 Code

Index.html

```
<!DOCTYPE html>
<html lang="en">
<!DOCTYPE html>
<html lang="en">
```

```
<head>
  <meta charset="UTF-8">
   <title>Login</title>
   <link rel="stylesheet" href="new.css">
   <style>        .login-container {

width: 300px;            margin:

100px auto;            padding:

30px;            border: 1px solid

#ccc;            border-radius:

10px;            box-shadow: 0 0

10px rgba(0,0,0,0.3);            text-

align: center;

       }
       .login-container

input {            width:

90%;

padding: 10px;

margin: 10px 0;

       }
       .login-container

button {
```

```
padding: 10px 20px;

background-color:

#333;           color:

white;           border:

none;           border-

radius: 5px;

cursor: pointer;

      }
      .login-container

button:hover {

background-color: #ffcc00;

color: black;

      }
   </style>
</head>
<body>
   <div class="login-container">
      <h2>Login</h2>
      <input type="text" id="username"
placeholder="Username">
      <input type="password" id="password"
placeholder="Password">
      <button onclick="login()">Login</button>
   </div>
```

```
   <script>        function login() {            const
user =
document.getElementById('username').value;
const pass =
document.getElementById('password').value;
// Simple check for demo purposes
if(user === "anit" && pass === "1234") {
alert("Login Successful! ");
window.location.href = "index.html";
          } else {
             alert("Invalid username or password ");
          }
       }
   </script>
</body>
</html>
  <meta charset="UTF-8" />
  <meta name="viewport" content="width=device-width,
initial-scale=1.0" />
  <title>Dynamic Image Slider</title>
  <link rel="stylesheet" href="new.css" />
</head>
<body>
  <div class="slider">
```

```
    <div class="slides">
      <img src="https://picsum.photos/id/1015/800/400"
class="slide active" />
      <img src="https://picsum.photos/id/1016/800/400"
class="slide" />
      <img src="https://picsum.photos/id/1018/800/400"
class="slide" />
      <img src="https://picsum.photos/id/1020/800/400"
class="slide" />
    </div>
    <button class="prev">&#10094;</button>
    <button class="next">&#10095;</button>
  </div>

  <script src="new.js"></script>

</body>
</html><!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>About</title>
    <link rel="stylesheet" href="new.css">
</head>
<body>
    <nav>
        <a href="index.html">Home</a>
        <a href="about.html">About</a>
        <a href="profile.html">Profile</a>
        <a href="logout.html">Logout</a>
    </nav>
```

```
    <div class="container">
        <h1>About This Project</h1>
        <p>This is a dynamic image slider project built using
HTML, CSS, and JavaScript.</p>
        <p>It includes a Home page with slider, About page,
Profile page, and Logout page.</p>
        <p>You can customize it with your own images and
profile info.</p>
        <p>Navigation is provided at the top for all pages.</p>
    </div>
</body>
</html>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Profile</title>
    <link rel="stylesheet" href="new.css">
</head>
<body>
    <nav>
        <a href="index.html">Home</a>
        <a href="about.html">About</a>
        <a href="profile.html">Profile</a>
        <a href="logout.html">Logout</a>
    </nav>


    <div class="container">
        <h1>User Profile</h1>
```

```
        <img src="https://picsum.photos/150/150" alt="Profile

Image" class="profile-img">        <h2>user</h2>

        <p>Email: user@example.com</p>
        <p>Role: Student</p>
    </div>
</body>
</html>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Logout</title>
    <link rel="stylesheet" href="new.css">
    <style>        body {

font-family: Arial, sans-

serif;            background-

color: #f5f5f5;

margin: 0;

padding: 0;

        }
        .logout-container {

display: flex;

flex-direction: column;

align-items: center;
```

```
justify-content: center;
height: 100vh;
text-align: center;
}
.logout-containerimg
width: 250px;
{
margin-bottom: 30px;
        }
        .logout-containerh1
{           color: #333;
margin-bottom: 20px;
        }
        .logout-containerp
{           color: #555;
margin-bottom: 30px;
font-size: 18px;
        }
        .logout-containera{
display: inline-block;
padding: 12px 25px;
background-color: #333;
```

```
color: white;           text-

decoration: none;

border-radius: 8px;

font-weight: bold;

transition: 0.3s;

        }
        .logout-container a:hover

{           background-color:

#ffcc00;            color: black;

        }
    </style>
</head>
<body>
    <div class="logout-container">
        <img src="https://img.icons8.com/fluency/96/logout-
rounded-left.png" alt="Logout Icon">
        <h1>Successfully Logged Out! </h1>
        <p>Thank you for visiting our site. You have safely logged
out.</p>
        <a href="login.html">Login Again</a>
    </div>
</body>
```

New.css

```
body { margin: 0; font-
family: 'Segoe UI', sans-
serif;
background: #f0f2f5;
}

nav {

background:
#333; padding:
10px;
text-align: center;
}

nav a { color:

white; margin: 0
15px; text-
decoration: none;
font-weight: bold;
}



header { text-align:
center; padding:
30px; background:
#4CAF50;
color: white;
}
.centered-box { max-width:
400px; margin: 50px auto;
background: white;
padding: 30px; border-
```

```
radius: 8px;box-shadow: 0 0
10px rgba(0,0,0,0.1); text-
align: center;
}

input { width:
100%;
padding:
10px; margin:
10px 0; font-
size: 16px; }

button {

padding: 10px
20px;

background:
#4CAF50; color:
white; border: none;
cursor: pointer;
}

.slider {

max-width: 800px;
margin: 30px auto;
position: relative;
overflow: hidden;
border-radius: 10px;
}
```

```
.slide {
display:
none;
}
.slide.active { display:
block; animation: fade
1s ease-in-out;
}
.slide img {
width: 100%;
height: auto;
display: block;

}

@keyframes fade {
from{opacity: 0.4; } to
{ opacity: 1; }
}
```

New.js

```
letcurrentIndex = 0; const images =
document.querySelectorAll('.slider img');


function showImage(index) {
images.forEach(img =>
```

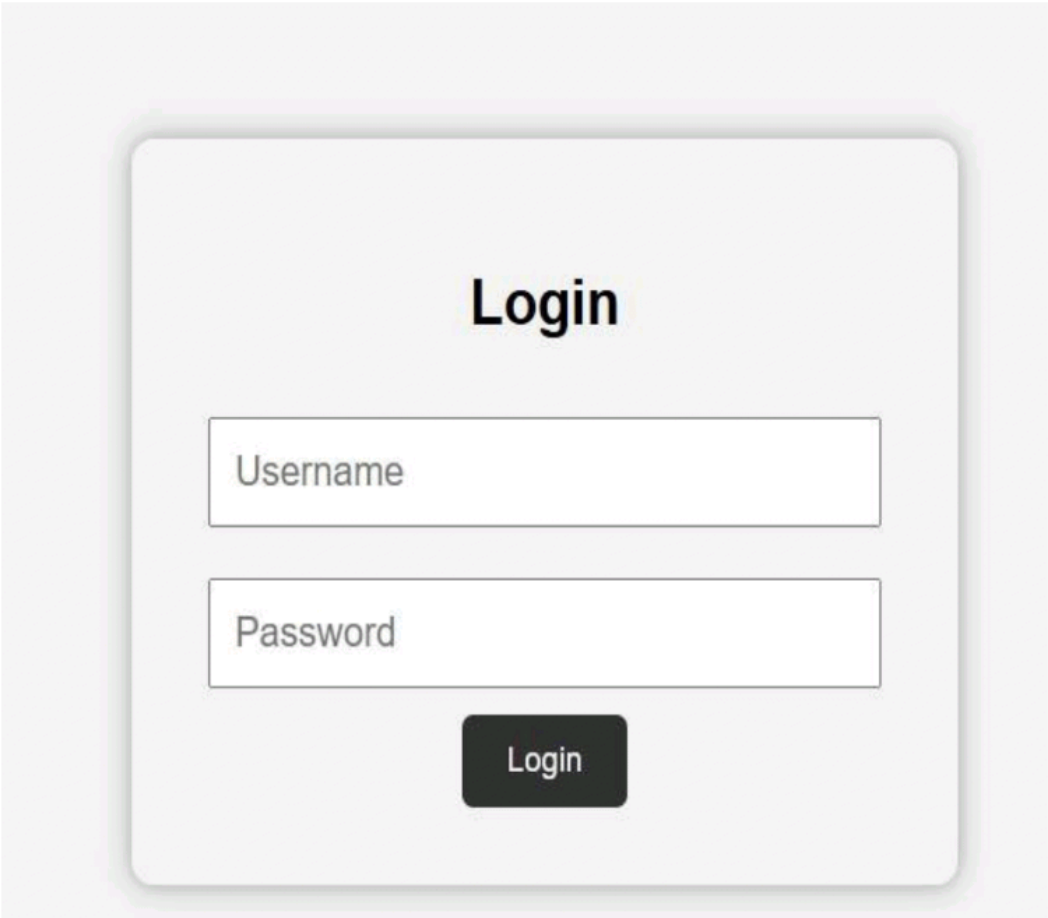
```
img.classList.remove('active'));
images[index].classList.add('active');
}
function nextImage() {    currentIndex
= (currentIndex + 1) % images.length;
showImage(currentIndex);
}
function prevImage() {                currentIndex =
(currentIndex - 1 + images.length) %
images.length;    showImage(currentIndex);
}
(currentIndex); setInterval(nextImage,
3000); // Auto slide every 3 seconds
```

deployed project link

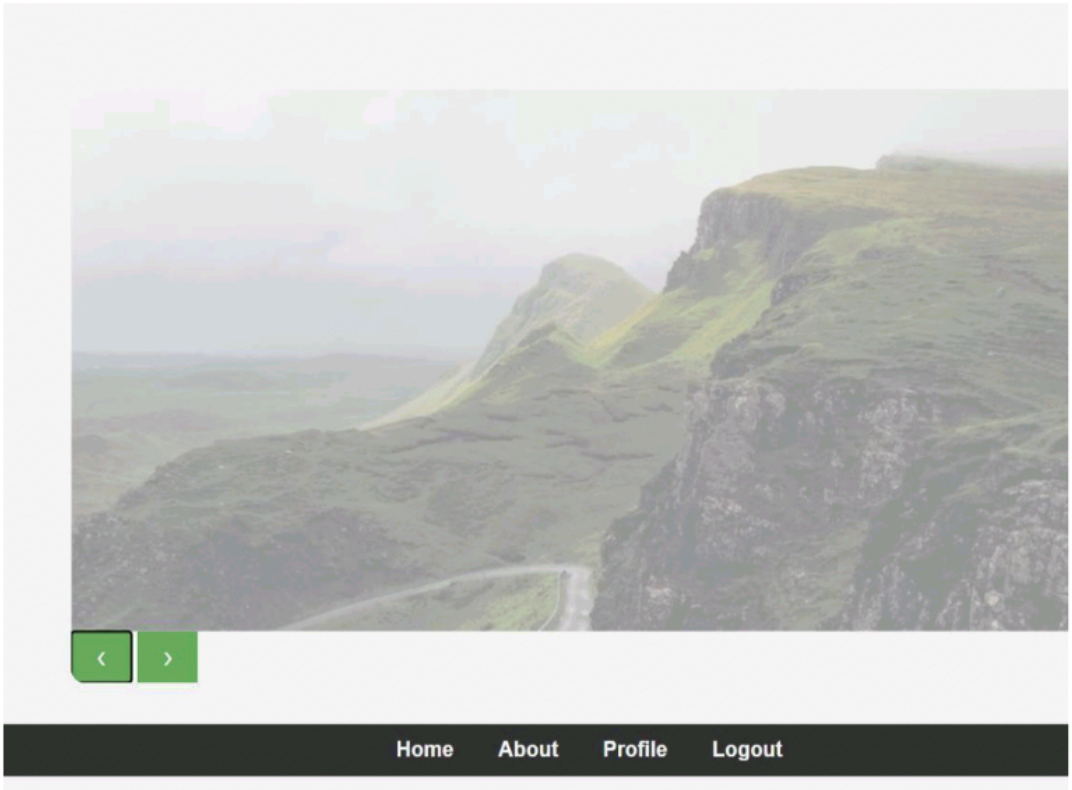
https://github.com/archanadevi19k-afk/dis.git

screenshots

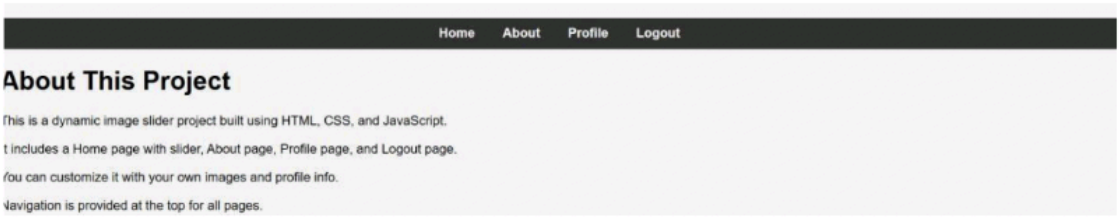
- login page


Login
Username
Password
Login

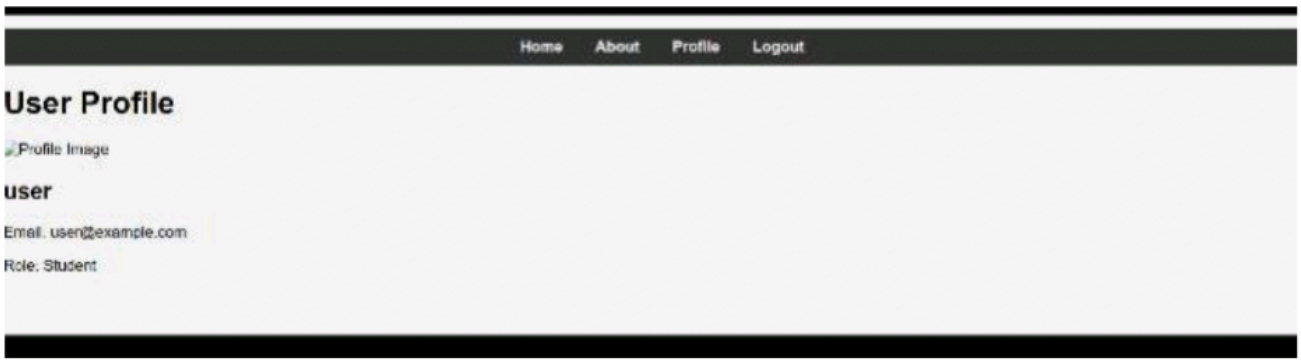
Home page



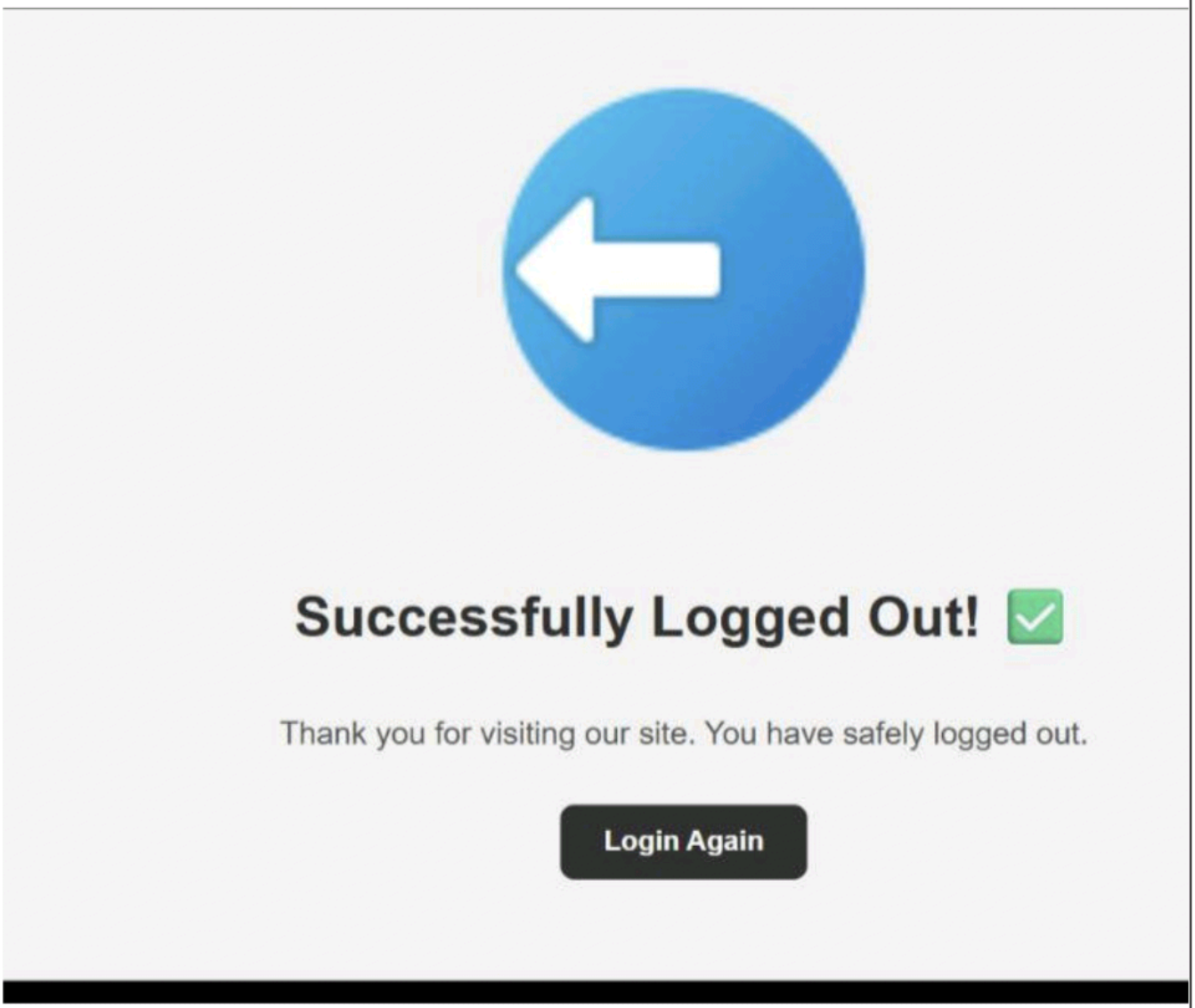
About page



Profile page



Logout page


Successfully Logged Out!
Thank you for visiting our site. You have safely logged out.
Login Again