

# Project Report: Dynamic Image Slider

## Introduction

The Dynamic Image Slider is a web-based project designed to showcase a collection of images with smooth transitions and interactive navigation. It allows users to navigate through images using navigation buttons, thumbnails, and dot indicators while displaying relevant captions.

## Objectives

- To create an interactive image slider for displaying images dynamically.
- To enhance user experience with smooth transitions and navigation controls.
- To implement automatic and manual slideshow functionalities.

## Technologies Used

- **HTML:** For structuring the web page.
- **CSS:** For styling the slider, captions, and navigation controls.
- **JavaScript:** For handling slideshow transitions, navigation, and automatic slide functionality.

## Features

- **Automatic Slideshow:** The images change automatically every 3 seconds.
- **Manual Navigation:** Users can navigate using previous and next buttons.
- **Thumbnail Navigation:** Users can click on thumbnails to jump to a specific image.
- **Dot Indicators:** Highlights the active slide and allows easy navigation.
- **Smooth Transitions:** Opacity-based transitions for a better visual effect.

## Implementation Details

- **HTML Structure:**
  - A container for the slider.
  - Multiple images inside the slides div.
  - Navigation buttons and dot indicators for user interaction.
- **CSS Styling:**
  - Responsive design with flexbox and media queries.
  - Styled buttons, dots, and thumbnails.
- **JavaScript Functionality:**

- Event listeners for button clicks, dot clicks, and thumbnail clicks.
- Functions to handle slide transitions.
- Automatic slideshow function using `setTimeout`.

## Code Implementation:

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-
scale=1.0">

  <title>Image Slider</title>

  <style>

    * { box-sizing: border-box; margin: 0; padding: 0; }

    body { display: flex; flex-direction: column; align-
items: center; justify-content: center; height: 100vh;
background: #f4f4f4; }

    h1 { margin-bottom: 20px; font-size: 24px; text-align:
center; }

    .slider-container { position: relative; width: 80%; max-
width: 600px; overflow: hidden; border-radius: 10px; box-shadow:
0 4px 8px rgba(0,0,0,0.2); }

    .slides { display: flex; transition: opacity 0.5s ease-
in-out; position: relative; }

    .slide { min-width: 100%; box-sizing: border-box;
position: absolute; opacity: 0; transition: opacity 1s ease-in-
out; }

    .slide img { width: 100%; border-radius: 10px; display:
block; }

    .caption { position: absolute; bottom: 10px; left: 50%;
transform: translateX(-50%); background: rgba(0, 0, 0, 0.6);
```

```
color: white; padding: 5px 10px; border-radius: 5px; font-size: 1rem; text-align: center; width: 90%; }
```

```
.active-slide { opacity: 1; position: relative; }
```

```
.nav-button { position: absolute; top: 50%; transform: translateY(-50%); background: rgba(0,0,0,0.5); color: white; border: none; padding: 10px; cursor: pointer; }
```

```
.prev { left: 10px; }
```

```
.next { right: 10px; }
```

```
.dots { text-align: center; margin-top: 10px; }
```

```
.dot { height: 10px; width: 10px; margin: 0 5px; background-color: #bbb; border-radius: 50%; display: inline-block; cursor: pointer; }
```

```
.active { background-color: #717171; }
```

```
.thumbnails { display: flex; justify-content: center; margin-top: 10px; }
```

```
.thumbnail { width: 50px; height: 50px; margin: 5px; cursor: pointer; opacity: 0.6; }
```

```
.thumbnail:hover, .active-thumbnail { opacity: 1; }
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<h1>Dynamic Image Slider</h1>
```

```
<div class="slider-container">
```

```
<div class="slides">
```

```
<div class="slide active-slide"><div class="caption">Kodaikanal: The "Princess of Hill Stations," known for its misty valleys and serene lakes.</div></div>
```

```
<div class="slide"><div
```

class="caption">Ooty: The "Queen of Hill Stations," famous for its tea gardens and toy train.</div></div>

<div class="slide"><div class="caption">Yercaud: The "Poor Man's Ooty," offering lush greenery and a tranquil atmosphere.</div></div>

<div class="slide"><div class="caption">Courtallam: The "Spa of South India," renowned for its therapeutic waterfalls.</div></div>

<div class="slide"><div class="caption">Kolli Hills: A hidden gem with hairpin bends, ancient temples, and breathtaking viewpoints.</div></div>

</div>

<button class="nav-button prev" onclick="moveSlide(-1)">&#10094;</button>

<button class="nav-button next" onclick="moveSlide(1)">&#10095;</button>

</div>

<div class="dots"></div>

<div class="thumbnails">







```
    
```

```
    
```

```
</div>
```

```
<script>
```

```
    let index = 0;

    const slides = document.querySelectorAll('.slide');
    const dotsContainer = document.querySelector('.dots');
    const thumbnails =
document.querySelectorAll('.thumbnail');

    slides.forEach((_ , i) => {

        const dot = document.createElement('span');

        dot.classList.add('dot');

        dot.addEventListener('click', () => showSlide(i));

        dotsContainer.appendChild(dot);

    });

    function showSlide(n) {

        slides[index].classList.remove('active-slide');

        thumbnails[index].classList.remove('active-
thumbnail');

        index = n;

        slides[index].classList.add('active-slide');

        thumbnails[index].classList.add('active-thumbnail');

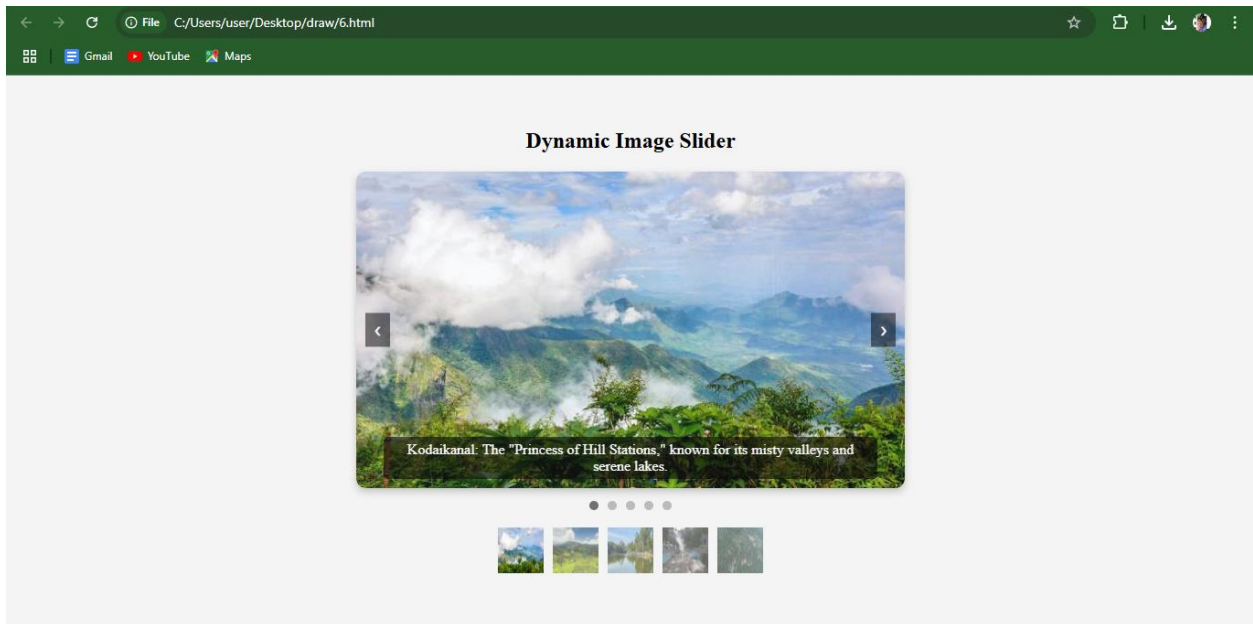
        updateDots();

    }
```

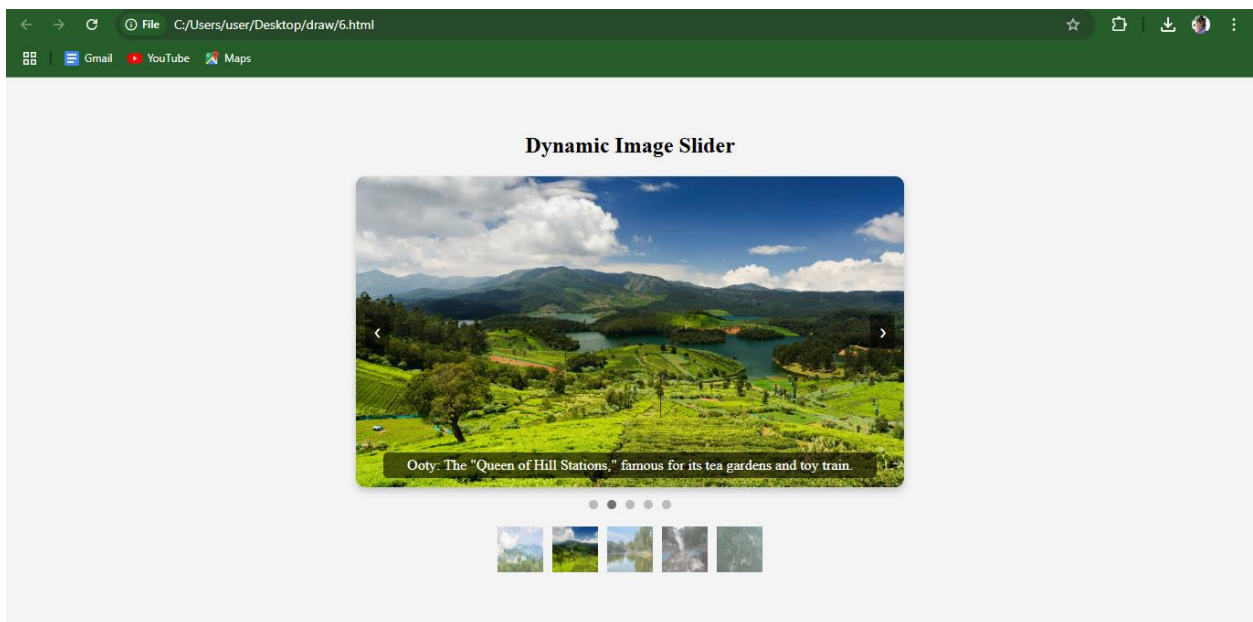
```
function moveSlide(step) {  
    let newIndex = (index + step + slides.length) %  
slides.length;  
    showSlide(newIndex);  
}  
function updateDots() {  
    document.querySelectorAll('.dot').forEach((dot, i)  
=> {  
        dot.classList.toggle('active', i === index);  
    });  
}  
function autoSlide() {  
    moveSlide(1);  
    setTimeout(autoSlide, 3000);  
}  
updateDots();  
setTimeout(autoSlide, 3000);  
</script>  
</body>  
</html>
```

## Expected Output

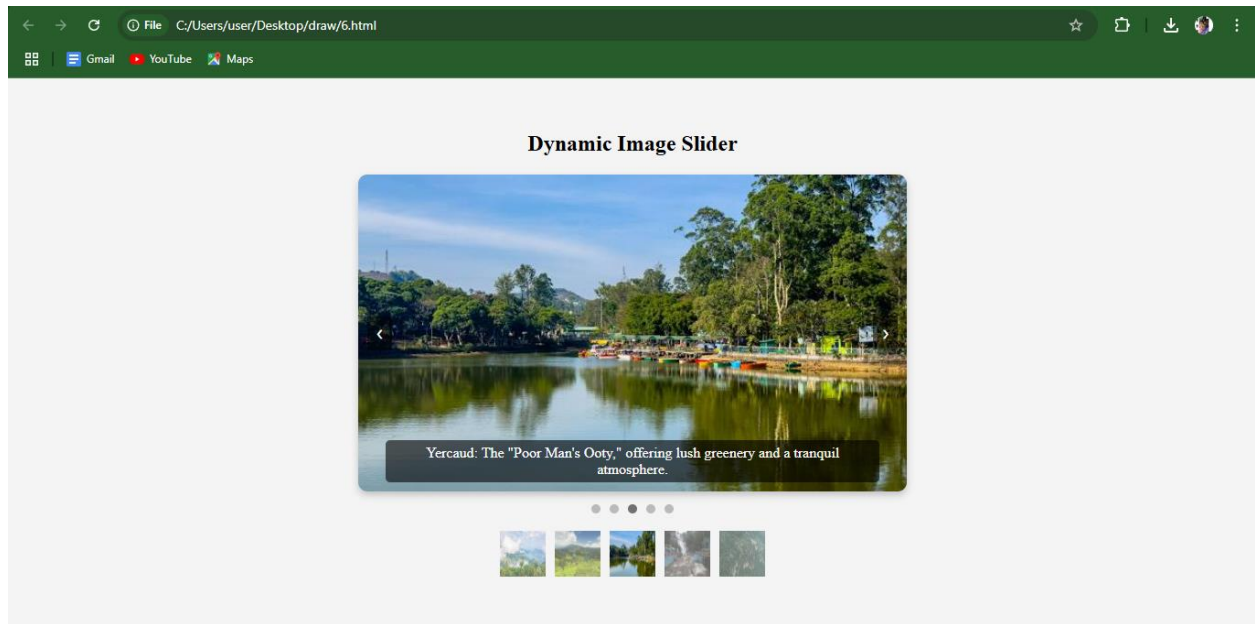
- The slider should display images one at a time with captions.
- The images transition automatically every 3 seconds.
- Users can manually navigate using buttons, dots, or thumbnails.
- Active slide indicators should update accordingly.
- The slideshow should be responsive and work smoothly across devices.



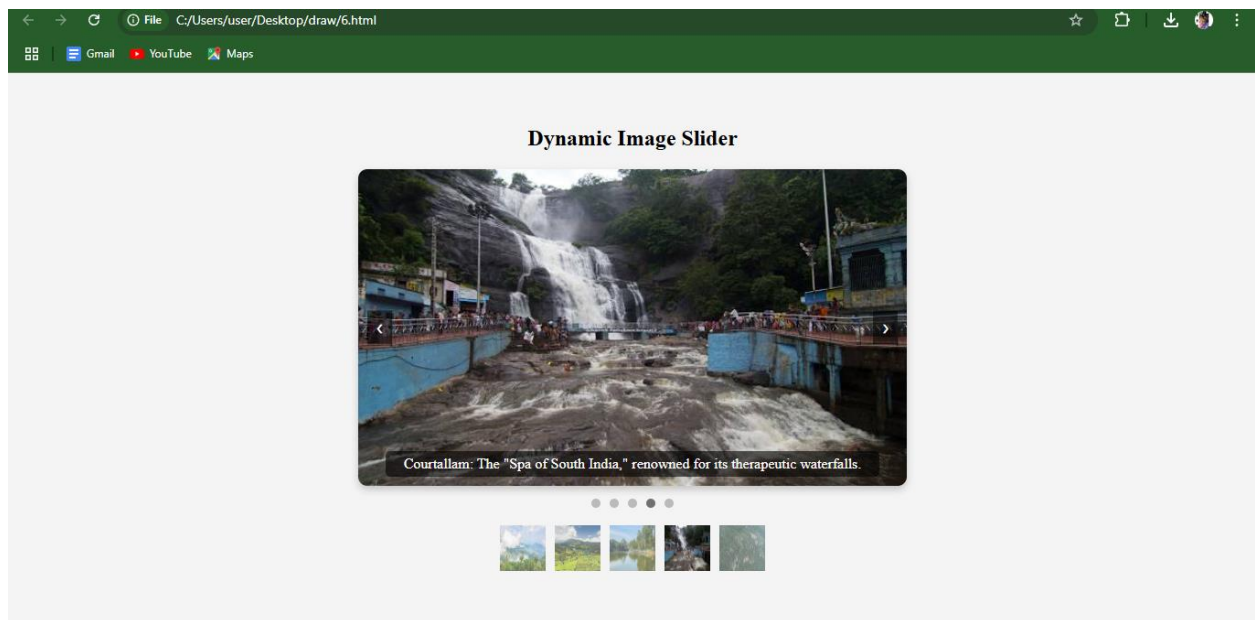
**Fig 1.1** Kodaikanal: The "Princess of Hill Stations," known for its misty valleys and serene lakes.



**Fig 1.2** Ooty: The "Queen of Hill Stations," famous for its tea gardens and toy train.

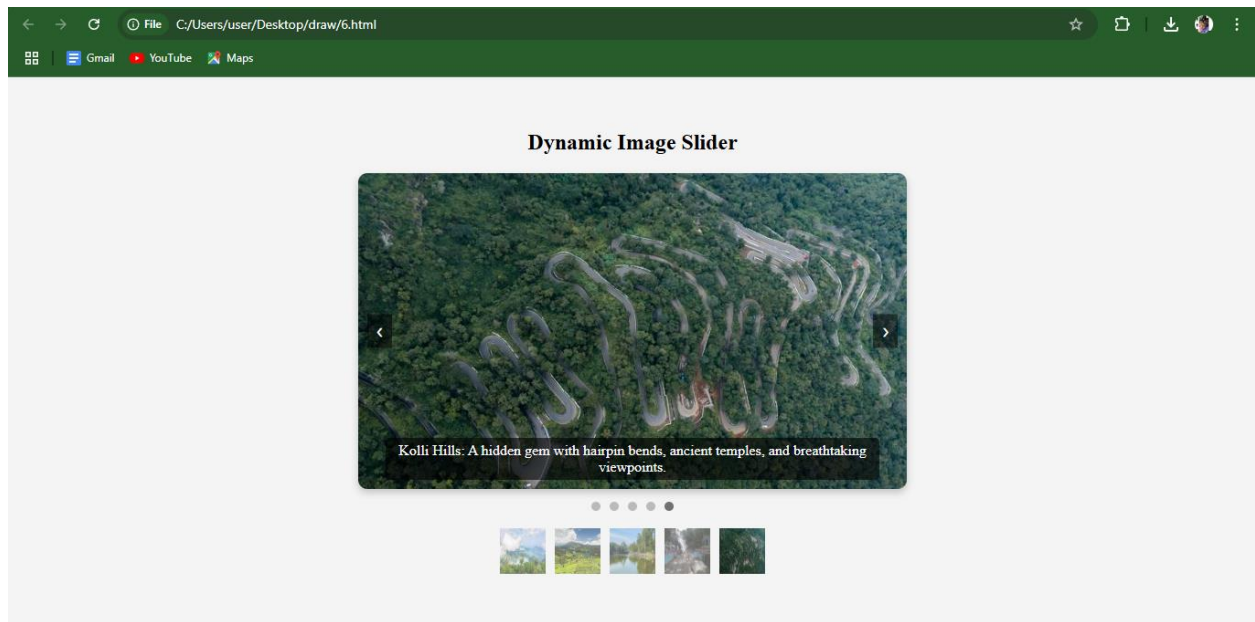


**Fig 1.3** Yercaud: The "Poor Man's Ooty," offering lush greenery and a tranquil atmosphere.



**Fig 1.4** Courtallam: The "Spa of South India," renowned for its therapeutic waterfalls.





**Fig 1.5** Kolli Hills: A hidden gem with hairpin bends, ancient temples, and breathtaking viewpoints.

## Challenges Faced

- Managing image transitions smoothly.
- Synchronizing dot indicators and thumbnails with the active slide.
- Ensuring compatibility across different screen sizes and browsers.

## Future Enhancements

- Adding touch swipe functionality for mobile users.
- Implementing lazy loading for improved performance.
- Adding more customization options like transition effects and speed controls.

## Conclusion

The Dynamic Image Slider provides a visually appealing and user-friendly way to browse images. It successfully integrates manual and automatic navigation options, making it an efficient and interactive solution for web-based image galleries.