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COMPUTER SCIENCE AND ENGINEERING

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Phase-1

PROBLEM UNDERSTANDING AND REQUIREMENTS

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Phase 1 – Problem Understanding & Requirements

1. Problem Statement

Websites and applications often require a visually appealing way to showcase multiple images. A static gallery limits interactivity and user engagement. Users today expect smooth, dynamic experiences such as auto-slide, touch/swipe navigation, and responsive layouts.

A Dynamic Image Slider addresses this by:

Allowing users to easily browse images.

Enabling automatic transitions for convenience.

Supporting dynamic image updates without hardcoding.

Improving overall user experience and engagement.

2. Users & Stakeholders

End Users: Visitors who interact with the slider to view images (customers, students, general audience).

Content Creators/Admins: People who upload and manage images in the slider (website admins, business owners).

Developers/Designers: The team responsible for designing and integrating the slider into websites or apps.

Business Stakeholders: Organizations or brands aiming to improve engagement, showcase products, or highlight features attractively.

3. User Stories

As a user, I want to view multiple images in sequence so I can explore content easily.

As a user, I want navigation arrows and dots so I can move between images manually.

As a user, I want the slider to auto-play so I don't need to click every time.

As a user, I want smooth transitions so the slider feels modern and professional.

As an admin, I want to add or remove images dynamically without editing the code

As a developer, I want the slider to be responsive and reusable in different projects.

4. MVP (Minimum Viable Product) Features

Manual navigation (Previous/Next arrows).

Auto-play with configurable speed.

Dynamic image loading (from folder, JSON, or API).

Responsive design (mobile, tablet, desktop support).

Transition effects (fade, slide).

Pagination dots to indicate the current image.

5. Wireframes & API Endpoints

Wireframe (basic layout)

Central area: Image display.

Left/right arrows: Manual navigation.

Dots: Indicate current position in slider.

API Endpoints (if backend is used)

GET /api/images → Fetch list of images with URLs, titles, captions.

POST /api/images → Upload new image (admin only).

DELETE /api/images/:id → Delete an image by ID.

6. Acceptance Criteria

Slider must display at least 5 images smoothly.

Navigation arrows work correctly (next/previous).

Auto-slide transitions occur at a set interval.

Responsive across devices (mobile, tablet, desktop).

Smooth transition animations (fade/slide).

Dynamic image loading works without requiring code changes.

Pagination dots update correctly when the image changes