

Topic : Lazy Loading

Assignment: Photo Gallery App

Scenario:

You are tasked with building a simple Photo Gallery application where users can view images in different categories (e.g., Nature, Animals, and Space).

The images in each category are large, so to improve performance, you are required to use lazy loading for loading the images only when the category is selected.

This assignment will help you practice lazy loading in React with TypeScript.

Requirements:

➤ Project Setup:

- Create a new React project with a TypeScript template and name it PhotoGalleryApp.

➤ Component Structure:

○ Create a Gallery Component:

- This component should have three buttons (Nature, Animals, Space) that, when clicked, display the images for that category.
- Use lazy loading to import the image components dynamically when the user selects a category.
- The images for each category should only load when that category is selected, and not before.

○ Create separate components for each category:

- NatureImages component: Displays a list of nature images.
- AnimalImages component: Displays a list of animal images.
- SpaceImages component: Displays a list of space images.
- These components should be lazily loaded only when the respective button is clicked.

- Create an App Component:
 - This component will render the Gallery component.

Tasks:

1. Lazy Loading:

- Implement React.lazy and Suspense to lazily load the category components (Nature, Animals, Space).
- Use import() to dynamically import the components for each category.

2. Rendering Categories:

- Implement the Gallery component to render buttons for Nature, Animals, and Space.
- When a user clicks on a button, the corresponding component (with images) should load and display the images for that category.

3. Expected Outcome:

- A simple Photo Gallery application where:
 - Three buttons are displayed for selecting image categories.
 - When a category is selected, the corresponding images are loaded using lazy loading.
 - Images are displayed only after the category is selected, improving performance by reducing initial loading time.

4. Images:

- You can use any sample URLs for images (or placeholders) in each category to simulate a real gallery.
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