ASSIGNMENT#4
NEXT.JS
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### Understanding Next.Js

Key Concepts and Features

### What is Next.js?

Next.js is a powerful React framework that allows developers to build fast, scalable, and production-ready web applications. It enhances the React ecosystem with features for server-side rendering (SSR), static site generation (SSG), API routes, and more, making it a popular choice for web development. Here's a deep dive into its key features and concepts:

#### When to Use Next.js

Next.js is ideal for building modern, performant websites and applications, especially those requiring a mix of static and dynamic content, such as e-commerce sites, blogs, and dashboards. For your portfolio project, Next.js could simplify routing, enhance performance, and help with SEO—all beneficial for showcasing your skills.

#### File Structure

```
pages/
index.js
posts/
[id].js
```

### What is React.js?

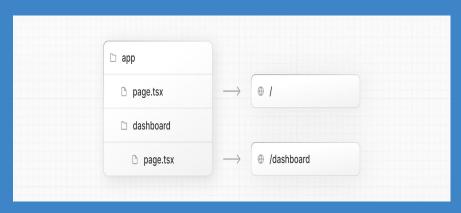
React.js, often simply called React, is an open-source JavaScript library for building user interfaces, especially single-page applications where efficient, interactive user experiences are crucial. Developed and maintained by Facebook (now Meta) and a community of developers, React was introduced in 2013. It allows developers to build web applications that can update and render components in real-time as the user interacts with them, making applications highly responsive.

Blazing Fast

React.js is widely used for developing fast, scalable, and interactive user interfaces. Its component-based architecture, use of JSX, and support for hooks make it a flexible and powerful tool for front-end developers.

### What is the page.tsx file?

The page.tsx is the special file in Next.js used to define the content of a specific route.Page./app/page.tsx this is the home page associated with the route. To create a nested route,you can nest folders inside each other and add page.tsx files inside them.



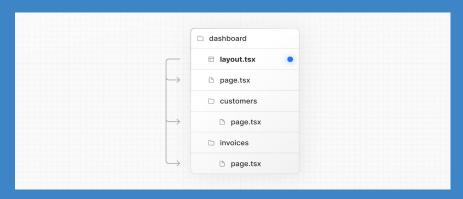
/app/dashboard/page.tsx

### What is the layout.tsx file?

The layout.tsx file provides a way to define a consistent layout for multiple pages within a Next.js application.

The < Layout /> component receives a children prop. The child can either be a page or another layout.

Any UI you add to the root layout will be shared across all the pages in your application.



/app/dashboard/layout.tsx

### What is the link tag?

The Link tag is component from Next.js that enables client-side navigation between pages <Link>. The link tag is most often used to link to external style sheets.

#### Purpose:

It prevents full-page reloads, enhancing performs = ance and providing a smoother user experience.

```
1 // index.js
2 import Link from 'next/link';
3
4 export default () => (
5 <div>
6 Hello World.{' '}
7 <Link href='/about'>
8 <a>About</a>
9 </Link>
10 </div>
11 );
12
```

# How to create nested pages in Next.js?

#### Method:

Create a folder structure inside the pages directory.

#### **Explanation:**

In Next.js routing, is based on a file system. Each file in the pages directory corresponds in the route application each folder represents a route segment.

#### Example:

pages/blog/post.tsx corresponds to the URL/blog/post.



### What are components?

Components are reusable building blocks of code in web development. They represent anything from a button, navigation bar, or form to more complex elements like cards or entire sections. Components make it easier to structure and manage the UI and behavior of an application.

#### Example:

If you have a "Header" and "Footer" component in your Next.js projects,you can add them to multiple pages without rewriting the same code each time.

### What is Tailwind CSS?

Tailwind CSS is a popular utility-first CSS framework that provides a collection of predefined classes, making it easier to quickly style web elements without writing custom CSS from scratch. Unlike traditional CSS framework like Bootstrap that offer pre built components, Tailwind offers "utility classes" that let you build custom designs directly in HTML.

#### Purpose:

Provides predefined utility classes for styling without the need for custom CSS.

#### Example:

```
<br/>
```

</button>

## Difference between Tailwind CSS and standard CSS?

The main d/f b/t Tailwind CSS and Standard CSS lies in their approaches to styling web pages.

#### Tailwind CSS

Uses a utility first approach meaning it provides numerous pre defined utility classes for layout, spacing, colors, typography, and more. Instead of creating custom CSS rules, you apply these classes directly in HTML. Each utility class typically represents a single , small, and focused style.

Example:<div class="p-4 bg-blue-500 text-white"></div>

#### Standard CSS

You define your own classes and styles in a separate .css file.The styles are then applied by linking these CSS classes to HTML elements.Standard CSS could add flexibility where unique ,custom styles are needed.

Example:<!-- In HTML --> <div class="my-div"></div>

### **THANK YOU**