

CMPS 356 – Fall 2022

Web Applications Design and Development

Lab 11

Next 13

Objective

1. Creating a root layout and nested layouts
2. Routing using directories and pages
3. Using loading interfaces, error handlers, and not-found pages
4. Serving JSON files through API endpoints

Prerequisites

1. Next 13: <https://beta.nextjs.org/docs>
2. Next 13 App Directory Playground: <https://app-dir.vercel.app>
3. Next API Endpoints: <https://nextjs.org/docs/api-routes/introduction>
4. MUI: <https://mui.com>
5. React Query: <https://tanstack.com/query/v4>

1. New Features

1. Update Node.js to the latest LTS version.
2. Create a new directory 01-world-cup and a Next 13 application under it: “npx create-next-app@latest --experimental-app”.
 - 2.1. Install MUI: “npm i @mui/material @mui/icons-material @emotion/react @emotion/styled”.
 - 2.2. Install React Query: “npm i @tanstack/react-query” and provide it in the application.
3. Update the root layout to include a header, main content, and a footer.
 - 3.1. Define and use Header and Footer components.
 - 3.2. Create a Head component that receives a title property in head.jsx.
 - 3.3. Display the World Cup 2022 logo in the header with a link to the homepage.
 - 3.4. Display the World Cup 2022 logo in the center of the homepage.
 - 3.5. Add basic copyright information to the footer.
4. Add two endpoints: “/api/teams” and “/api/matches” for serving the team and match data, respectively, using the provided JSON files.
5. Create a page for the groups and add a link to the header.
 - 5.1. Display the list of groups and corresponding teams in a responsive grid using cards.
 - 5.2. Display the name and flag for each team.
6. Create a page for the matches and add link to the header.

- 6.1. Display the list of matches and corresponding teams in a responsive grid using cards.
- 6.2. Display the home/away teams, date/time, venue, and location for each match.
7. Create a page for the teams and add a link in the header.
 - 7.1. Display the list of teams in a responsive grid using cards.
 - 7.2. Create a sub-route for every team and list its matches.
 - 7.3. Add a not found handler for this sub-route.
8. Add loading interfaces and error handlers to all the routes.
9. Build the application using SSG, SSR, and ISR.
 - 9.1. SSG, SSR, ISR: Update the `fetch` calls.
 - 9.2. SSG: Export a `generateStaticParams()` function generating the valid paths.
 - 9.3. ISR: Export a `revalidate` constant.