

PEMROGRAMAN FRAMEWORK

PRAKTIKUM 1

“Setup Project Next.js menggunakan Pages Router”

Oleh:

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**Jurusank Teknologi Informasi
D4 Teknik Informatika
Politeknik Negeri Malang
2026**

A. Langkah Praktikum

a. Langkah 1 – Pengecekan lingkungan

1. Node -v

```
● PS D:\Oltha_PemrogramanFramework> node -v
v24.13.1
● PS D:\Oltha_PemrogramanFramework> npm -v
11.8.0
● PS D:\Oltha_PemrogramanFramework> git -v
git version 2.53.0.windows.1
```

2. Npm -v

```
● PS D:\Oltha_PemrogramanFramework> node -v
v24.13.1
● PS D:\Oltha_PemrogramanFramework> npm -v
11.8.0
● PS D:\Oltha_PemrogramanFramework> git -v
git version 2.53.0.windows.1
```

3. Git -v

```
● PS D:\Oltha_PemrogramanFramework> node -v
v24.13.1
● PS D:\Oltha_PemrogramanFramework> npm -v
11.8.0
● PS D:\Oltha_PemrogramanFramework> git -v
git version 2.53.0.windows.1
```

b. Langkah 2 – Membuat Project Next.js

1. Buat direktori baru

```
● PS D:\Praktikum_PBF\Oltha_PemrogramanFramework> mkdir praktikum

Directory: D:\Praktikum_PBF\Oltha_PemrogramanFramework

Mode                LastWriteTime         Length Name
----                -----              ----- 
d-----        2/15/2026   2:58 PM          praktikum

● PS D:\Praktikum_PBF\Oltha_PemrogramanFramework> node -v
v24.13.1
● PS D:\Praktikum_PBF\Oltha_PemrogramanFramework> cd praktikum
○ PS D:\Praktikum_PBF\Oltha_PemrogramanFramework\praktikum> █
```

2. Jalankan perintah :

```

● PS D:\Praktikum_PBF\Oltha_PemrogramanFramework> mkdir praktikum

Directory: D:\Praktikum_PBF\Oltha_PemrogramanFramework

Mode                LastWriteTime         Length Name
----                -----          ----- ----
d-----        2/15/2026    2:58 PM            praktikum

● PS D:\Praktikum_PBF\Oltha_PemrogramanFramework> node -v
v24.13.1
● PS D:\Praktikum_PBF\Oltha_PemrogramanFramework> cd praktikum
● PS D:\Praktikum_PBF\Oltha_PemrogramanFramework\praktikum> npx create-next-app@13.4.7
Need to install the following packages:
create-next-app@13.4.7
Ok to proceed? (y) y
✓ What is your project named? ... my-app
✓ Would you like to use TypeScript with this project? ... No / Yes
✓ Would you like to use ESLint with this project? ... No / Yes
✓ Would you like to use Tailwind CSS with this project? ... No / Yes
✓ Would you like to use `src/` directory with this project? ... No / Yes
✓ Use App Router (recommended)? ... No / Yes
✓ Would you like to customize the default import alias? ... No / Yes
Creating a new Next.js app in D:\Praktikum_PBF\Oltha_PemrogramanFramework\praktikum\my-app.

Using npm.

Initializing project with template: default

Installing dependencies:
- react
- react-dom
- next
- typescript
- @types/react
- @types/node
- @types/react-dom
- eslint
- eslint-config-next
[...]
●
added 338 packages, and audited 339 packages in 2m

136 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
Success! Created my-app at D:\Praktikum_PBF\Oltha_PemrogramanFramework\praktikum\my-app

A new version of `create-next-app` is available!
You can update by running: npm i -g create-next-app

npm notice
npm notice New minor version of npm available! 11.8.0 -> 11.10.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.10.0
npm notice To update run: npm install -g npm@11.10.0
npm notice

```

c. Langkah 3 – menjalankan Server Development

1. Masuk ke folder project

```
● PS D:\Praktikum_PBF\Oltha_PemrogramanFramework\praktikum> cd .\my-app
○ PS D:\Praktikum_PBF\Oltha_PemrogramanFramework\praktikum\my-app> npm
```

2. Jalankan aplikasi

```
○ PS D:\Praktikum_PBF\Oltha_PemrogramanFramework\praktikum\my-app> npm run dev

> my-app@0.1.0 dev
> next dev

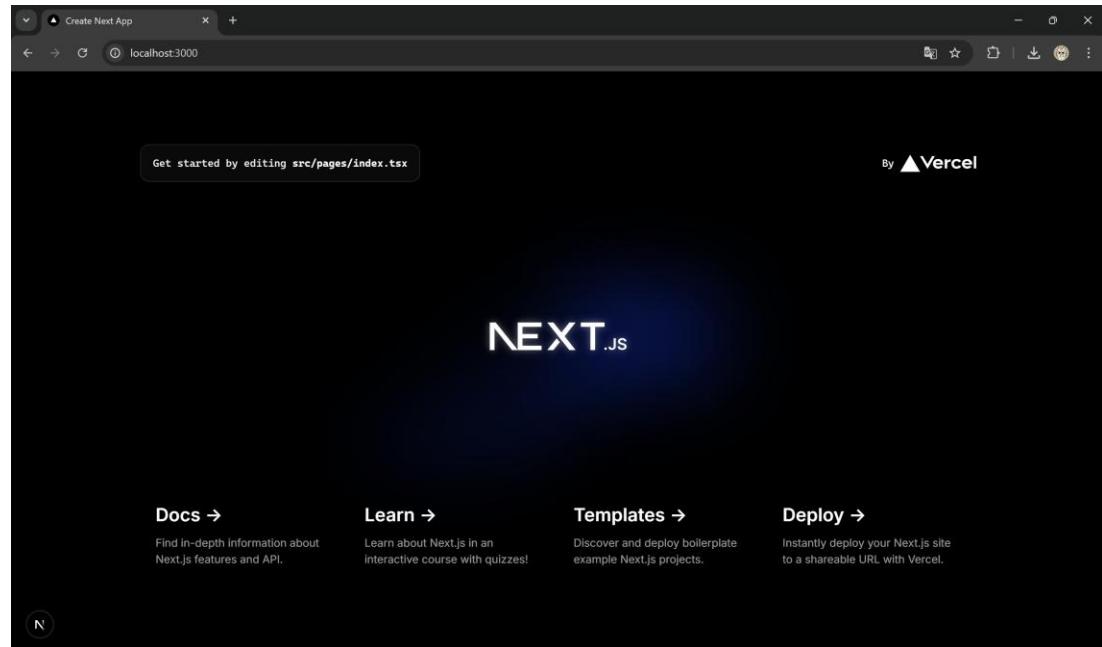
▲ Next.js 16.1.6 (TurboPack)
- Local:          http://localhost:3000
- Network:        http://192.168.56.1:3000

✓ Starting...
Attention: Next.js now collects completely anonymous telemetry regarding usage.
This information is used to shape Next.js' roadmap and prioritize features.
You can learn more, including how to opt-out if you'd not like to participate in this anonymous program,
by visiting the following URL:
https://nextjs.org/telemetry

We detected TypeScript in your project and reconfigured your tsconfig.json file for you.
The following mandatory changes were made to your tsconfig.json:
- jsx was set to react-jsx (next.js uses the React automatic runtime)

✓ Ready in 34.6s
```

3. Buka browser dan akses



d. Langkah 4 – Modifikasi Halaman Utama

The image shows a code editor (VS Code) and a web browser side-by-side.

Code Editor (VS Code):

- File Explorer: Shows the project structure:
 - praktikum\my-app
 - .next
 - node_modules
 - public
 - favicon.ico
 - next.svg
 - vercel.svg
 - src
 - pages
 - api
 - _app.tsx
 - _document.tsx
 - index.tsx** (selected)
 - styles
 - # globals.css
 - # Home.module.css
 - .eslintrc.json
 - .gitignore

Content of index.tsx:

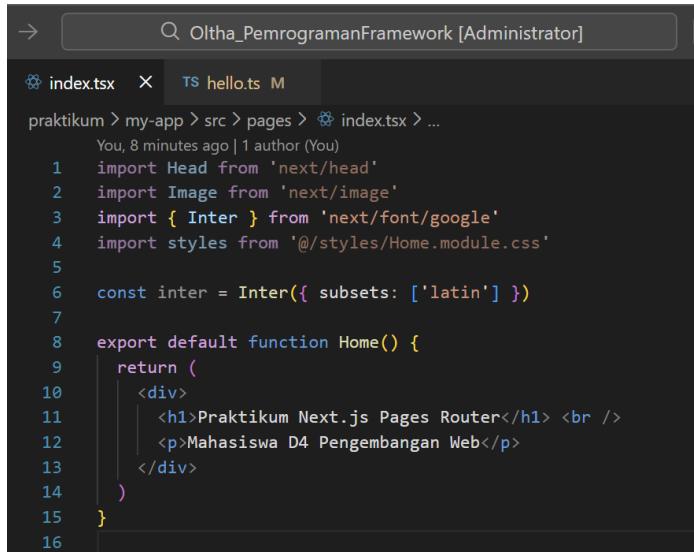
```
You, 15 seconds ago | 1 author (You)
1 import Head from 'next/head'
2 import Image from 'next/image'
3 import { Inter } from 'next/font/google'
4 import styles from '@/styles/Home.module.css'
5
6 const inter = Inter({ subsets: ['latin'] })
7
8 export default function Home() {
9   return (
10    <div>
11      <h1>Praktikum Next.js Pages Router</h1> <br />
12      <p>Mahasiswa D4 Pengembangan Web</p>
13    </div>
14  )
15}
16
```

Web Browser:

 - Title bar: localhost:3000
 - Address bar: localhost:3000
 - Content: Praktikum Next.js Pages Router
Mahasiswa D4 Pengembangan Web

e. Langkah 5 – Modifikasi API

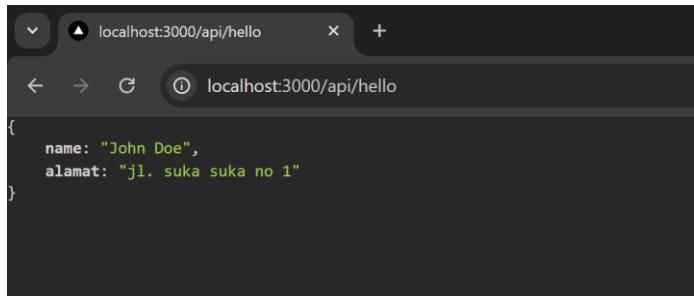
1. Menjalankan browser dengan alamat : <http://localhost:3000/api/hello>



```

praktikum > my-app > src > pages > index.tsx > ...
You, 8 minutes ago | author (You)
1 import Head from 'next/head'
2 import Image from 'next/image'
3 import { Inter } from 'next/font/google'
4 import styles from '@/styles/Home.module.css'
5
6 const inter = Inter({ subsets: ['latin'] })
7
8 export default function Home() {
9     return (
10         <div>
11             <h1>Praktikum Next.js Pages Router</h1> <br />
12             <p>Mahasiswa D4 Pengembangan Web</p>
13         </div>
14     )
15 }
16

```

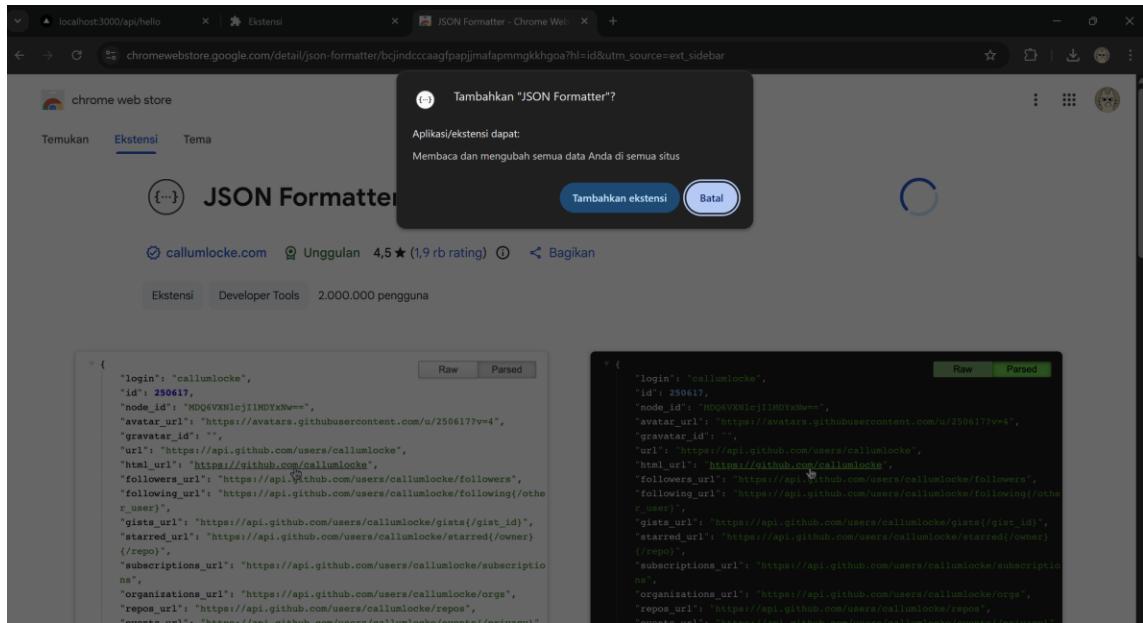


```

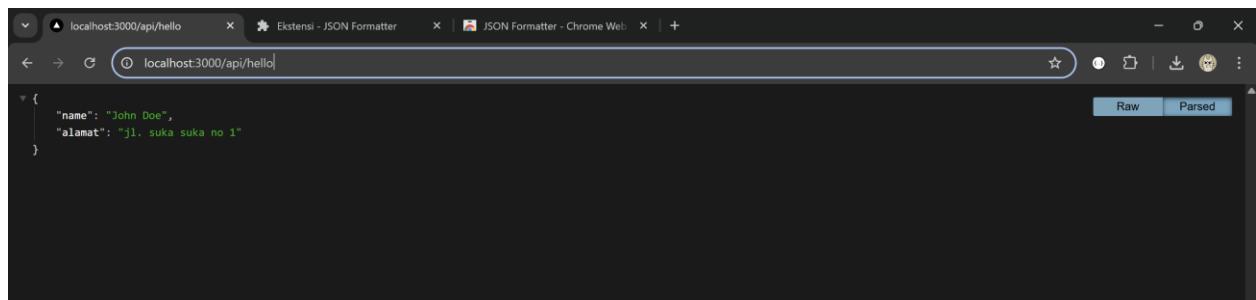
{
  name: "John Doe",
  alamat: "jl. suka suka no 1"
}

```

2. Menambahkan extensions chrome



3. Jalankan browser chrome

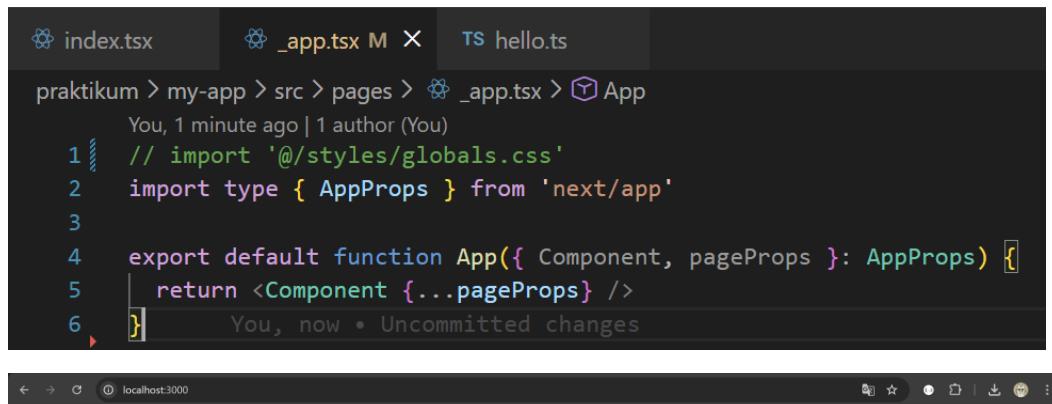


A screenshot of a web browser window. The address bar shows 'localhost:3000/api/hello'. The main content area displays a JSON object:

```
{ "name": "John Doe", "alamat": "jl. suka suka no 1" }
```

Below the JSON object, there are two buttons: 'Raw' and 'Parsed'.

f. Langkah 6 - Modifikasi Background



A screenshot of the Visual Studio Code interface. The top navigation bar shows tabs for 'index.tsx', '_app.tsx M X', and 'TS hello.ts'. The '_app.tsx' tab is active, showing the following code:

```
praktikum > my-app > src > pages > _app.tsx > App
You, 1 minute ago | 1 author (You)
1 // import '@/styles/globals.css'
2 import type { AppProps } from 'next/app'
3
4 export default function App({ Component, pageProps }: AppProps) {
5   return <Component {...pageProps} />
6 }
```

The status bar at the bottom indicates 'You, now • Uncommitted changes'.

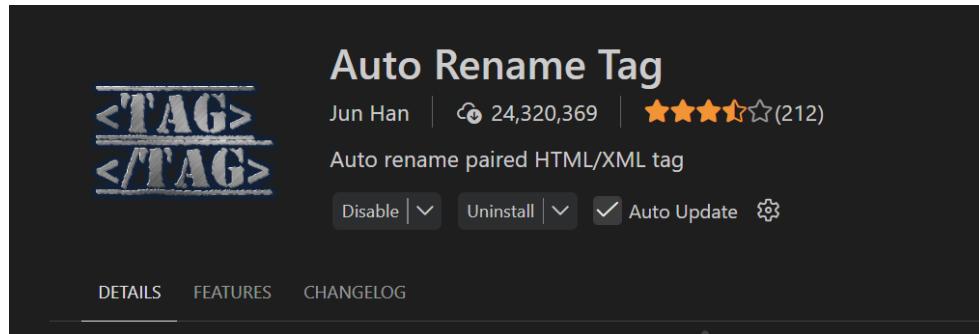
Praktikum Next.js Pages Router

Mahasiswa D4 Pengembangan Web



g. Langkah 7 – Setup ext pada VSCode (opsional)

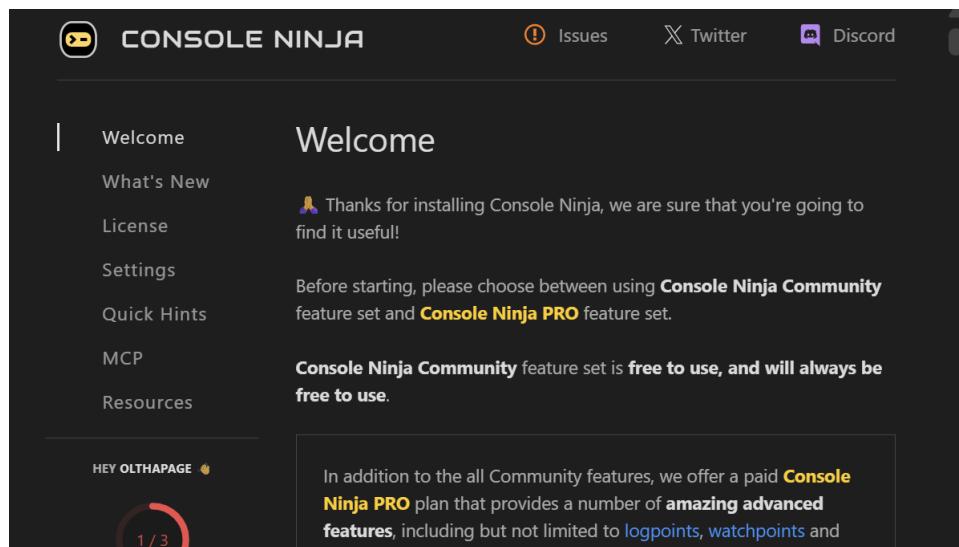
1. Auto rename



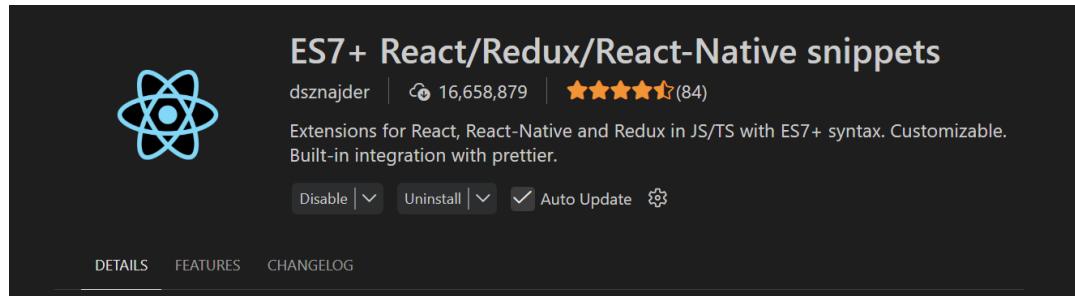
2. Windsurf plugin



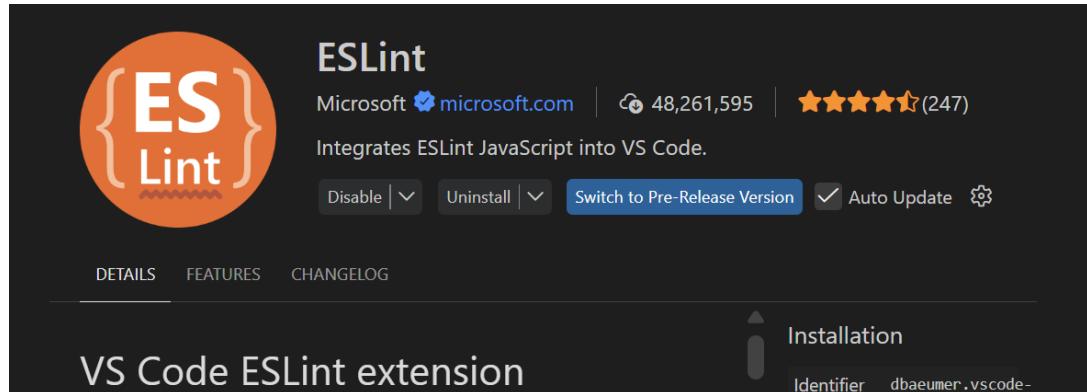
3. Console ninja



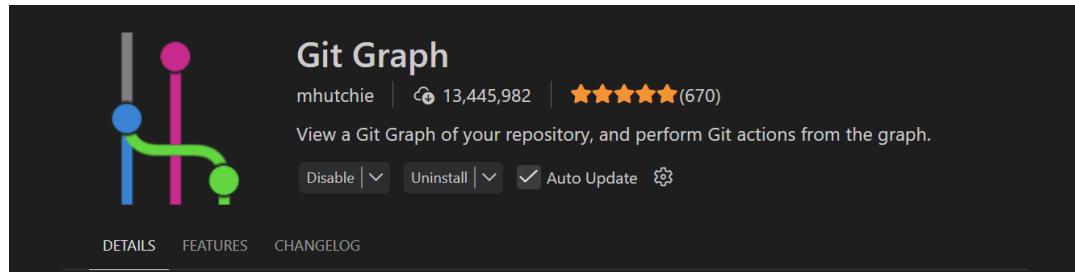
4. VS Code Es7+



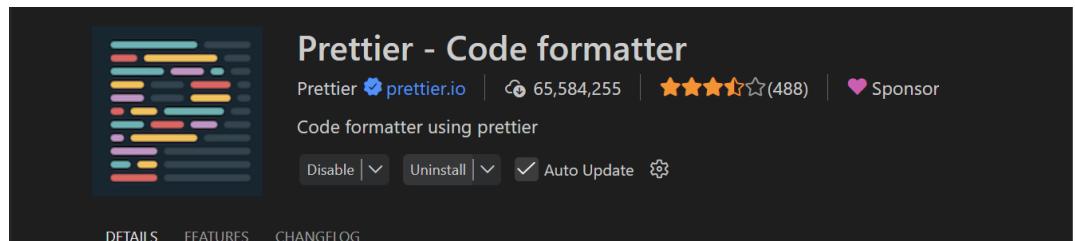
5. VS Code Eslint extension



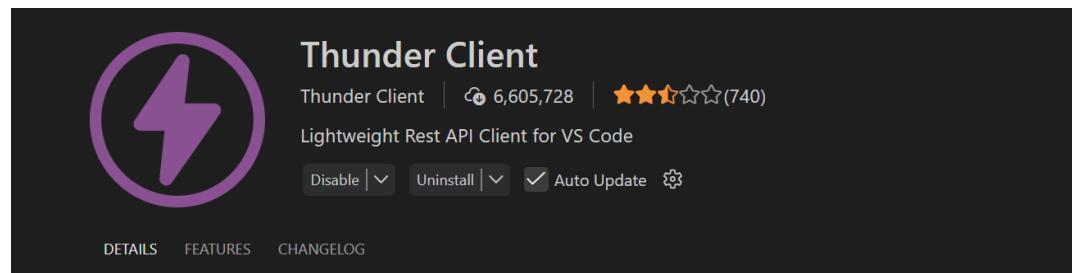
6. Git graph



7. Prettier



8. Asa



B. Tugas Praktikum

A. Tugas 1 (Wajib)

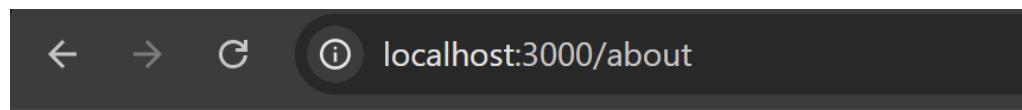
Kode :

The screenshot shows a code editor with a dark theme. The tab bar at the top has three tabs: "index.tsx", "about.tsx", and "_app.tsx". The "about.tsx" tab is active. On the right side of the editor, there are several icons: "Console Ninja", "Extension: Prettier - Code", and others. The code itself is a Next.js component:

```
praktikum > my-app > src > pages > about.tsx > ...
1 import Head from 'next/head'
2
3 Windsurf: Refactor | Explain | Generate JSDoc | ×
4 export default function About() {
5   return (
6     <>
7       <Head>
8         <title>About</title>
9       </Head>
10
11      <div>
12        <h1>Halaman About</h1>
13        <hr />
14
15        <p><strong>Nama Mahasiswa:</strong> Oltha Rosyeda Al'haq</p>
16        <p><strong>NIM:</strong> 2341720145</p>
17        <p><strong>Program Studi:</strong> D4 Teknik Informatika</p>
18      </div>
19    </>
20  )
21}
```

At the bottom of the code editor, there is a watermark: "Windsurf: Generate (Ctrl+D)".

Tampilan :



Halaman About

Nama Mahasiswa: Oltha Rosyeda Al'haq

NIM: 2341720145

Program Studi: D4 Teknik Informatika

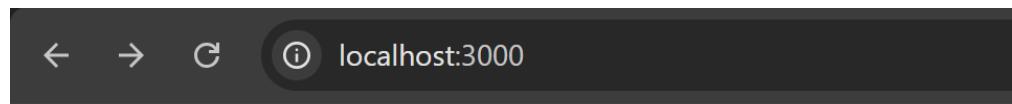
B. Tugas 2 (Pengayaan)

Kode :

```
index.tsx M ✘ about.tsx ✘ _app.tsx ✘ Console Ninja Extensi ⏪ ⏴ ⏵
praktikum > my-app > src > pages > index.tsx > Home
You, 6 seconds ago | 1 author (You)
1 import Head from 'next/head'
2 import Image from 'next/image'
3 import { Inter } from 'next/font/google'
4 import styles from '@/styles/Home.module.css'
5 import Link from 'next/link'
6
7 const inter = Inter({ subsets: ['latin'] })
8
Windsurf: Refactor | Explain | Generate JSDoc | ×
9 export default function Home() {
10   return [
11     <div>
12       <h1>Praktikum Next.js Pages Router</h1>
13       <p>Mahasiswa D4 Pengembangan Web</p>
14
15       <br />
16
17       <Link href="/about">
18         <button>Halaman About</button>
19       </Link>
20     </div>
21   ]
22 }
23
```

A screenshot of a code editor showing the content of the file "index.tsx". The code defines a Next.js page component named "Home". It imports necessary modules like Head, Image, Inter font, and Link. It then creates a constant "inter" for the Inter font with a subset of "latin". The main function returns a single array element, which is a div containing an h1 title, a p paragraph, a br line break, and a Link component with a button labeled "Halaman About" that links to the "/about" route.

Tampilan :



Praktikum Next.js Pages Router

Mahasiswa D4 Pengembangan Web

Halaman About

C. Pertanyaan Refleksi

1. Mengapa Pages Router disebut sebagai routing berbasis file?

Karena sistem routing pada Next.js ditentukan langsung oleh struktur folder dan nama file di dalam direktori pages/.

Setiap file yang dibuat didalam folder pages/ otomatis menjadi sebuah route (halaman) tanpa perlu konfigurasi tambahan.

2. Apa perbedaan Next.js dengan React standar (CRA)?

- Routing

Pada React standar, routing tidak tersedia secara otomatis sehingga memerlukan library tambahan seperti React Router. Sedangkan pada Next.js, sistem routing sudah tersedia secara bawaan melalui mekanisme file-based routing (Pages Router), di mana setiap file dalam folder pages/ otomatis menjadi sebuah route.

- Rendering

React standar hanya menggunakan Client-Side Rendering (CSR), yaitu proses rendering dilakukan di browser. Next.js lebih fleksibel karena mendukung beberapa metode rendering seperti Server-Side

Rendering (SSR), Static Site Generation (SSG), serta CSR. Hal ini membuat Next.js lebih unggul dari sisi performa dan SEO.

- Struktur Project

React standar memberikan kebebasan dalam mengatur struktur project, namun membutuhkan konfigurasi tambahan. Next.js sudah memiliki struktur folder yang terorganisir secara otomatis sehingga memudahkan pengembangan.

- Optimasi

Next.js menyediakan fitur optimasi bawaan seperti image optimization dan code splitting otomatis. Pada React standar, optimasi tersebut biasanya memerlukan konfigurasi tambahan.

Secara ringkas, Next.js lebih siap digunakan untuk pengembangan aplikasi skala produksi karena telah menyediakan berbagai fitur penting.

3. Apa fungsi perintah npm run dev?

Digunakan untuk menjalankan aplikasi dalam mode development (server pengembangan).

Fungsinya :

- Menjalankan aplikasi pada server lokal
- Mengaktifkan fitur hot reload (perubahan kode langsung terlihat tanpa refresh manual)
- Membantu proses pengembangan dan debugging

4. Apa perbedaan npm run dev dan run build ?

- Npm run dev

Digunakan pada tahap pengembangan. Perintah ini menjalankan server development secara lokal dan mendukung fitur hot reload, sehingga setiap perubahan kode dapat langsung terlihat di browser.

- Npm run build

Digunakan untuk menyiapkan aplikasi ke tahap produksi. Perintah ini akan membangun aplikasi menjadi versi yang sudah di optimasi, seperti memperkecil ukuran file dan meningkatkan performa. Hasil build dijalankan menggunakan npm start sebelum deploy ke server.

Secara ringkas, npm run dev digunakan untuk proses coding dan pengujian, sedangkan npm run build digunakan untuk persiapan deployment ke lingkungan produksi.