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## **Project Title:** URL Shortener Application (Frontend Developer Task)

### **1. Introduction**

This project is a simple URL Shortener application built using React.js.

The purpose of this project is to provide a clean frontend implementation where users can input a long URL, generate a short code for it, and manage the links effectively.

### **2. Objectives**

To create a frontend application using React.

To implement routing and navigation using React Router.

To provide features for URL shortening, redirecting, and displaying usage statistics.

To store the data locally using browser localStorage.

To design a simple and user-friendly UI with CSS.

### **3. Tech Stack**

Frontend Framework: React.js

Routing: React Router DOM

Storage: Browser LocalStorage

Styling: CSS (App.css + index.css)

### **4. Folder Structure**

src

├── App.js

├── App.css

├── index.js

├── index.css

├── components

| └── UrlRow.jsx

├── pages

| └── ShortenerPage.jsx

| └── StatsPage.jsx

| └── RedirectPage.jsx

└── services

```
| └─ storage.js
└─ utils
    └─ validation.js
    └─ shortcode.js
```

## 5. Features

1. Shorten URL → User can enter a long URL and generate a short code.
2. List of URLs → All shortened links are stored and displayed.
3. Redirect → When a user visits /shortcode, it redirects to the original URL.
4. Statistics → Shows how many times each short link was visited.
5. Validation → Checks if the entered URL is valid before shortening.
6. Local Storage → Data is persisted in the browser for future sessions.

## 6. Components & Pages

ShortenerPage.jsx – Main page with form and list of URLs.

UrlRow.jsx – Reusable component to display each URL entry.

StatsPage.jsx – Page showing visit counts of all shortened URLs.

RedirectPage.jsx – Handles redirecting from short code to original URL.

storage.js – Handles storing & retrieving data from localStorage.

validation.js – Validates if input is a correct URL.

shortcode.js – Generates random short codes.

## 7. How to Run the Project

1. Clone or download the project.
2. Open terminal and navigate to project folder:

```
cd my-app
```

```
npm install
```

```
npm install react-router-dom
```

```
npm start
```

3. Open browser at <http://localhost:3000/>

## 8. Conclusion

This project demonstrates how to build a functional URL Shortener frontend using React. It covers concepts like component structure, routing, state management, validation, and local storage usage. The application is simple, extendable, and can be integrated with a backend API in the future.