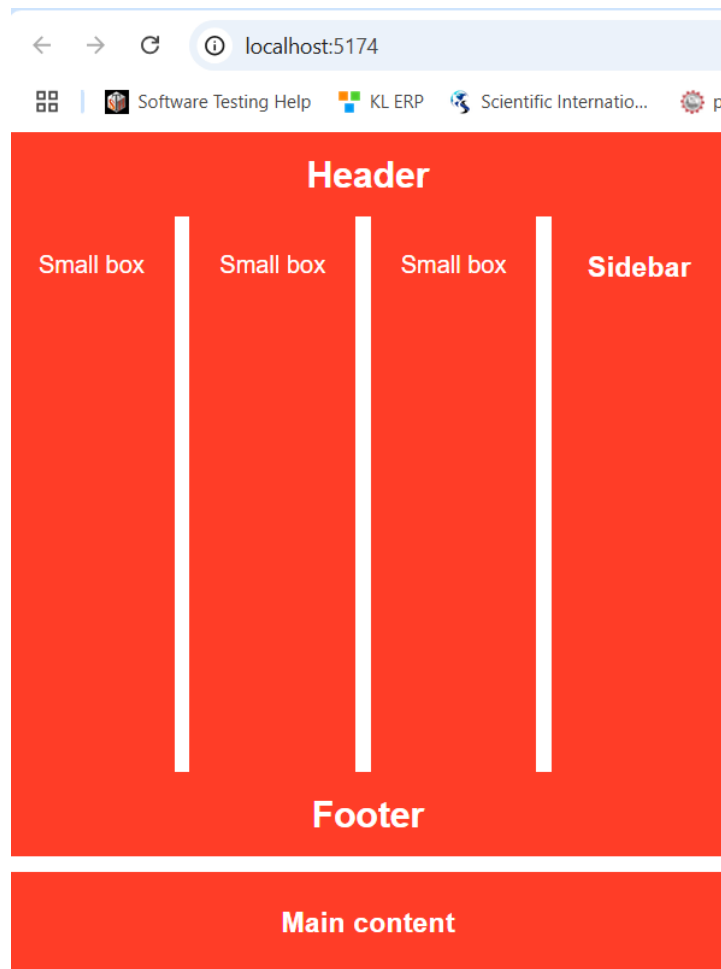# WEEk 1: Implementing grid, flex and block display

Faculty and students are organizing a "Greeks for Greeks" student chapter focused on teaching practical web development concepts. As part of this event, they plan to demonstrate a project that illustrates how to build a **product grid** using **CSS Grid**, and individual **product cards and sidebar** using **Flex and block display** model in React. Each component will be styled using external CSS to create a cohesive and responsive layout. How can they set up this example to effectively showcase these layout techniques in a React application?

Solution:

Creating Project:
Create one empty folder with name practical_week_1

And press in location path i.e cmd and you will get below path

1. D:\Education\kluh\teaching\CC files\FSAD DATA\lab manual\practical_week_1>
2. D:\Education\kluh\teaching\CC files\FSAD DATA\lab manual\practical_week_1> code .
3. Click on terminal and create project as shown below
4. D:\Education\kluh\teaching\CC files\FSAD DATA\lab manual\practical_week_1> npm create vite@latest practical_week_1
5. D:\Education\kluh\teaching\CC files\FSAD DATA\lab manual\practical_week_1> cd practical_week_1
6. D:\Education\kluh\teaching\CC files\FSAD DATA\lab manual\practical_week_1>npm install

after installation project structure have been created as shown in below

```
practical_week_1/
├──── src/
│     ├── App.jsx
│     ├── Header.jsx
│     ├── Footer.jsx
│     ├── Sidebar.jsx
│     ├── MainContent.jsx
│     ├── SmallBoxes.jsx
│     ├── App.css
└──── public/
      └── index.html
```

1)

```jsx
App.jsx ●

practical_week_1 > src > App.jsx > ...
1    import React from "react";
2    import "./App.css";
3    import Header from "./Header";
4    import Footer from "./Footer";
5    import Sidebar from "./Sidebar";
6    import MainContent from "./MainContent";
7    import SmallBoxes from "./SmallBoxes";
8
9    function App() {
10     return (
11       <div className="container">
12         <Header />
13         <div className="content">
14           <SmallBoxes />
15           <Sidebar />
16         </div>
17         <MainContent />
18         <Footer />
19       </div>
20     );
21   }
22
23   export default App;
```

2

```jsx
Header.jsx ●

practical_week_1 > src > Header.jsx > ...
1    import React from "react";
2
3    function Header() {
4      return (
5        <div className="header">
6          <h2>Header</h2>
7        </div>
8      );
9    }
10
11   export default Header;
12
```

3)

```jsx
Footer.jsx ●

practical_week_1 > src > Footer.jsx > ...
1    import React from "react";
2
3    function Footer() {
4      return (
5        <div className="footer">
6          <h2>Footer</h2>
7        </div>
8      );
9    }
10
11   export default Footer;
12
```

4)

```jsx
Sidebar.jsx ●

practical_week_1 > src > Sidebar.jsx > ...
1    import React from "react";
2
3    function Sidebar() {
4      return (
5        <div className="sidebar">
6          <h3>Sidebar</h3>
7        </div>
8      );
9    }
10
11   export default Sidebar;
12
```

5)

```jsx
MainContent.jsx ✕

practical_week_1 > src > MainContent.jsx > ...
1    import React from "react";
2
3    function MainContent() {
4      return (
5        <div className="main-content">
6          <h3>Main content</h3>
7        </div>
8      );
9    }
10
11   export default MainContent;
12
```

6)

```jsx
import React from "react";

function SmallBoxes() {
  return (
    <div className="small-boxes">
      <div className="box">Small box</div>
      <div className="box">Small box</div>
      <div className="box">Small box</div>
    </div>
  );
}

export default SmallBoxes;
```

7)App.css
/* General reset */
* {
  margin: 0;
  padding: 0;
  box-sizing: border-box;
}

body {
  font-family: Arial, sans-serif;
}

.container {
  display: grid;
  grid-template-rows: auto 1fr auto;
  grid-template-columns: 1fr;
  height: 100vh;
  grid-template-areas:
    "header"
    "content"
    "footer";
}

/* Header */
.header {
  grid-area: header;
  background-color: #e74c3c;
  color: white;
  text-align: center;
  padding: 10px;

```css
}

/* Footer */
.footer {
  grid-area: footer;
  background-color: #e74c3c;
  color: white;
  text-align: center;
  padding: 10px;
}

/* Content */
.content {
  display: grid;
  grid-area: content;
  grid-template-columns: 3fr 1fr;
  gap: 10px;
}

.small-boxes {
  display: flex;
  gap: 10px;
}

.box {
  flex: 1;
  background-color: #e74c3c;
  color: white;
  text-align: center;
  padding: 20px;
}

.sidebar {
  background-color: #e74c3c;
  color: white;
  text-align: center;
  padding: 20px;
}

.main-content {
  background-color: #e74c3c;
  color: white;
  text-align: center;
  grid-column: 1 / span 2; /* Stretch across both columns */
  margin-top: 10px;
  padding: 20px;
}
```

Run project:

```
found 0 vulnerabilities
PS D:\Education\kluh\teaching\CC files\FSAD DATA\lab manual\practical_week_1\practical_week_1> npm run dev

> practical_week_1@0.0.0 dev
> vite

Port 5173 is in use, trying another one...

  VITE v6.0.3  ready in 729 ms

  →  Local:   http://localhost:5174/
  →  Network: use --host to expose
  →  press h + enter to show help
o
```
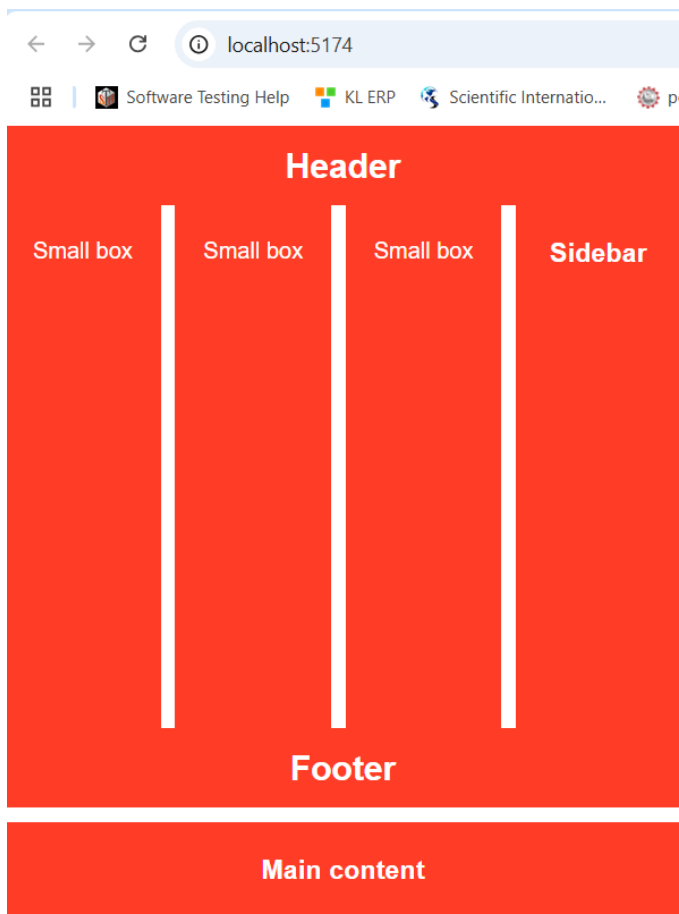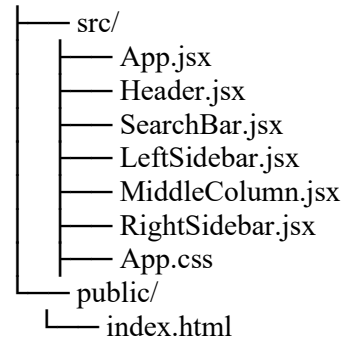
Output:

b)Practical week 1b (practice this)

Solution:

```
Practical-week-1b/
├─── src/
│      ├── App.jsx
│      ├── Header.jsx
│      ├── SearchBar.jsx
│      ├── LeftSidebar.jsx
│      ├── MiddleColumn.jsx
│      ├── RightSidebar.jsx
│      ├── App.css
│   └── public/
│        └── index.html
```

App.jsx:
import React from "react";
import "./App.css";
import Header from "./Header";
import SearchBar from "./SearchBar";
import LeftSidebar from "./LeftSidebar";
import MiddleColumn from "./MiddleColumn";
import RightSidebar from "./RightSidebar";

```
function App() {
  return (
    <div className="container">
      <Header />
      <SearchBar />
      <div className="main-content">
        <LeftSidebar />
        <MiddleColumn />
        <RightSidebar />
      </div>
    </div>
  );
}

export default App;
```

2. Header Component (Header.jsx)

```
import React from "react";

function Header() {
  return <div className="header">Header</div>;
}

export default Header;
```

3. SearchBar Component (SearchBar.jsx)

```
import React from "react";

function SearchBar() {
  return <div className="search-bar">Search</div>;
}

export default SearchBar;
```

4. Left Sidebar Component (LeftSidebar.jsx)

```
import React from "react";

function LeftSidebar() {
  return <div className="left-sidebar">Left Sidebar</div>;
}

export default LeftSidebar;
```

5. Middle Column Component (MiddleColumn.jsx)

```
import React from "react";

function MiddleColumn() {
  return <div className="middle-column">Middle Column</div>;
}
```

```
export default MiddleColumn;
```

---

6. Right Sidebar Component (RightSidebar.jsx)

```
import React from "react";

function RightSidebar() {
  return <div className="right-sidebar">Right Sidebar</div>;
}

export default RightSidebar;
```

7. CSS Styling (App.css)

```css
/* General Reset */
* {
  margin: 0;
  padding: 0;
  box-sizing: border-box;
}

body {
  font-family: Arial, sans-serif;
  background-color: #f4f4f4;
}

.container {
  display: grid;
  grid-template-rows: auto auto 1fr;
  grid-template-columns: 1fr;
  grid-template-areas:
    "header"
    "search"
    "main-content";
  gap: 10px;
  height: 100vh;
}

/* Header Styling */
.header {
  grid-area: header;
  background-color: #f39c12;
  color: black;
  text-align: center;
  padding: 10px;
  font-size: 1.5rem;
}

/* Search Bar Styling */
.search-bar {
  grid-area: search;
  background-color: #2ecc71;
```

```css
  color: black;
  text-align: center;
  padding: 10px;
  font-size: 1.2rem;
}

/* Main Content Grid */
.main-content {
  grid-area: main-content;
  display: grid;
  grid-template-columns: 1fr 2fr 1fr;
  gap: 10px;
  height: 100%;
}

/* Left Sidebar */
.left-sidebar {
  background-color: #3498db;
  color: white;
  text-align: center;
  padding: 20px;
  font-size: 1.2rem;
}

/* Middle Column */
.middle-column {
  background-color: #9b59b6;
  color: white;
  text-align: center;
  padding: 20px;
  font-size: 1.2rem;
}

/* Right Sidebar */
.right-sidebar {
  background-color: #e74c3c;
  color: white;
  text-align: center;
  padding: 20px;
  font-size: 1.2rem;
}
```

VIVA QUESTIONS:

1. What is the difference between display: grid, display: flex, and display: block?
2. Explain the CSS Grid layout. How does it help in building complex layouts?

3. What is the grid-template-columns and grid-template-rows property in CSS Grid? How do you use them?
4. How does Flexbox simplify layout management in CSS?
5. What is the difference between justify-content in Flexbox and CSS Grid?