React MUI (Material UI)

React MUI (Material-UI)

- React MUI (Material-UI) is a popular React UI framework that implements Google's Material Design principles.
- It provides a comprehensive set of components that are pre-styled and customizable, making it easier to build responsive, accessible, and aesthetically pleasing web applications.
- React MUI is a powerful and flexible UI framework that simplifies the process of building responsive and accessible web applications.
- By providing a comprehensive set of components and extensive customization options, MUI allows developers to create high-quality UIs that adhere to Material Design principles.

Key Features of React MUI

1. **Component Library**: MUI offers a wide range of ready-to-use components, such as buttons, cards, grids, dialogs, and more, which adhere to Material Design guidelines.

2. **Theming**: MUI allows for extensive theming and customization. You can create custom themes to match your application's branding and style.

3. **Responsive Design**: MUI components are designed to be responsive by default, making it easier to build applications that work well on various screen sizes.

4. **Accessibility**: MUI places a strong emphasis on accessibility, ensuring that components are built to meet ARIA standards and can be used by people with disabilities.

5. **Integration with Other Libraries**: MUI can be easily integrated with other libraries and frameworks, such as Redux, Formik, and more, to enhance its functionality.

Install MUI

Open node.js command prompt

npm install @mui/material @emotion/react @emotion/styled

npx create-react-app my-app

cd my-app

In App.js

```
import React from 'react';
import { Button, Typography, Container, AppBar, Toolbar } from '@mui/material';

function App() {
  return (
    <div>
      <AppBar position="static">
        <Toolbar>
          <Typography variant="h6">
            My MUI App
          </Typography>
        </Toolbar>
      </AppBar>
```

In App.js

```
<Container>
      <Typography variant="h2" component="h1" gutterBottom>
        Welcome to React MUI
      </Typography>
      <Typography variant="body1" gutterBottom>   →bottom margin
        This is a simple example demonstrating the use of Material-UI components.
      </Typography>
      <Button variant="contained" color="primary">
        Click Me
      </Button>
    </Container>
  </div>
 );
} export default App;
```

1. **Importing Components**: The Button, Typography, Container, AppBar, and Toolbar components are imported from @mui/material.

2. **AppBar and Toolbar**: These components are used to create a top navigation bar with a title.

3. **Container**: This component is used to center and add padding to the content.

4. **Typography**: This component is used for text elements, with variants like h2 for headings and body1 for regular text.

5. **Button**: A styled button is created with the variant="contained" and color="primary" properties.

Customizing the Theme

1. **You can customize the MUI theme to match your application's branding.**

2. **Here’s an example of how to create a custom theme and apply it**

Add in src/index.js

```
import React from 'react';

import ReactDOM from 'react-dom';            → to load react resources

import { ThemeProvider, createTheme } from '@mui/material/styles';

import App from './App';

// Create a custom theme
const theme = createTheme({
  palette: {                                 → to apply color
    primary: {
      main: '#556cd6',
    },
    secondary: {
      main: '#19857b',
    },
  },
```

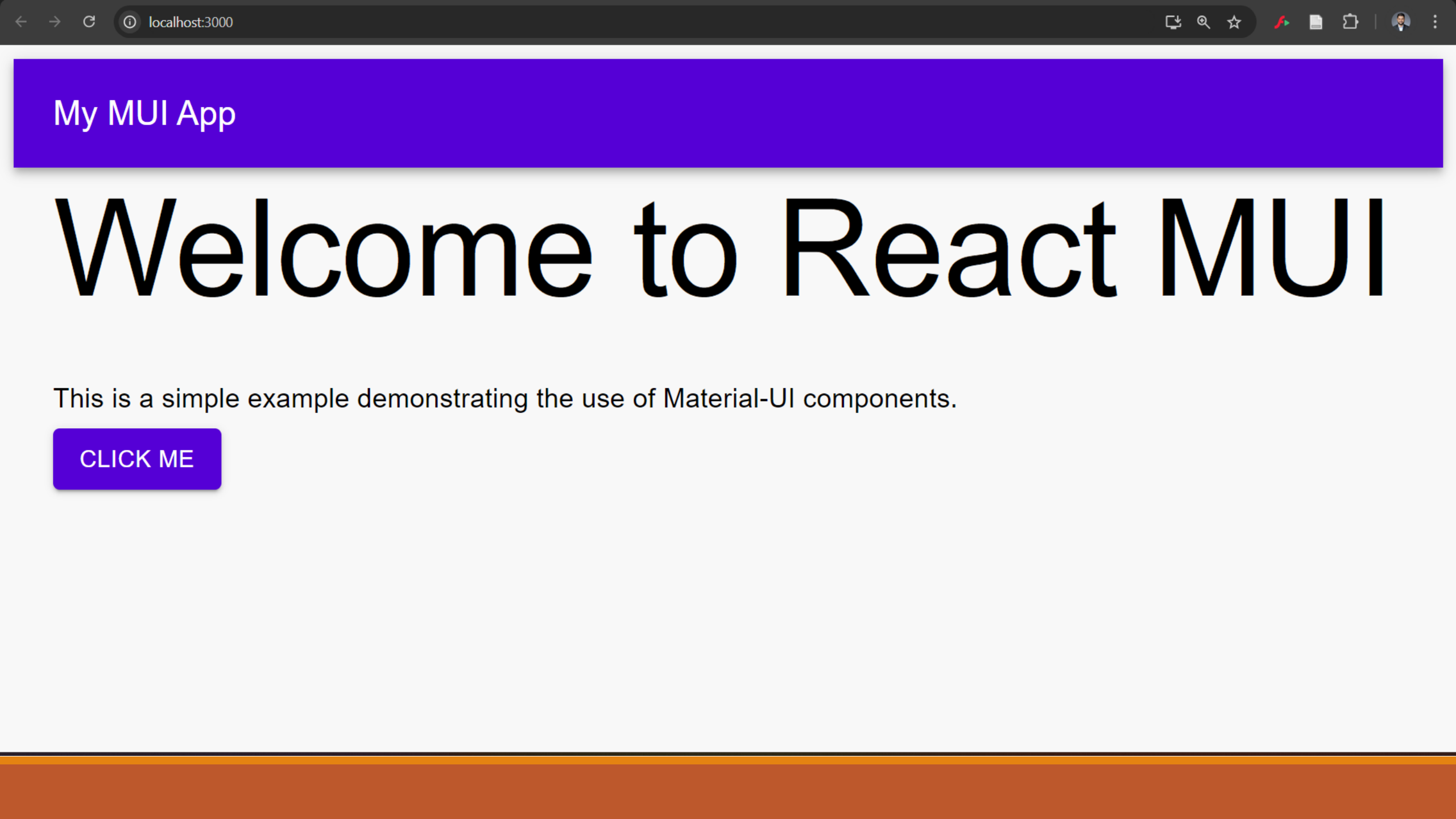
Add in src/index.js

```
typography: {
    h2: {
      fontSize: 36,
    },
  },
});

ReactDOM.render(
                <ThemeProvider theme={theme}>
                <App />
                </ThemeProvider>,
                                        document.getElementById('root')
);
```

1. **ThemeProvider and createTheme**: These functions from @mui/material/styles are used to create and apply a custom theme.

2. **Custom Theme**: The createTheme function is used to define a custom theme, specifying primary and secondary colors, as well as custom typography settings.

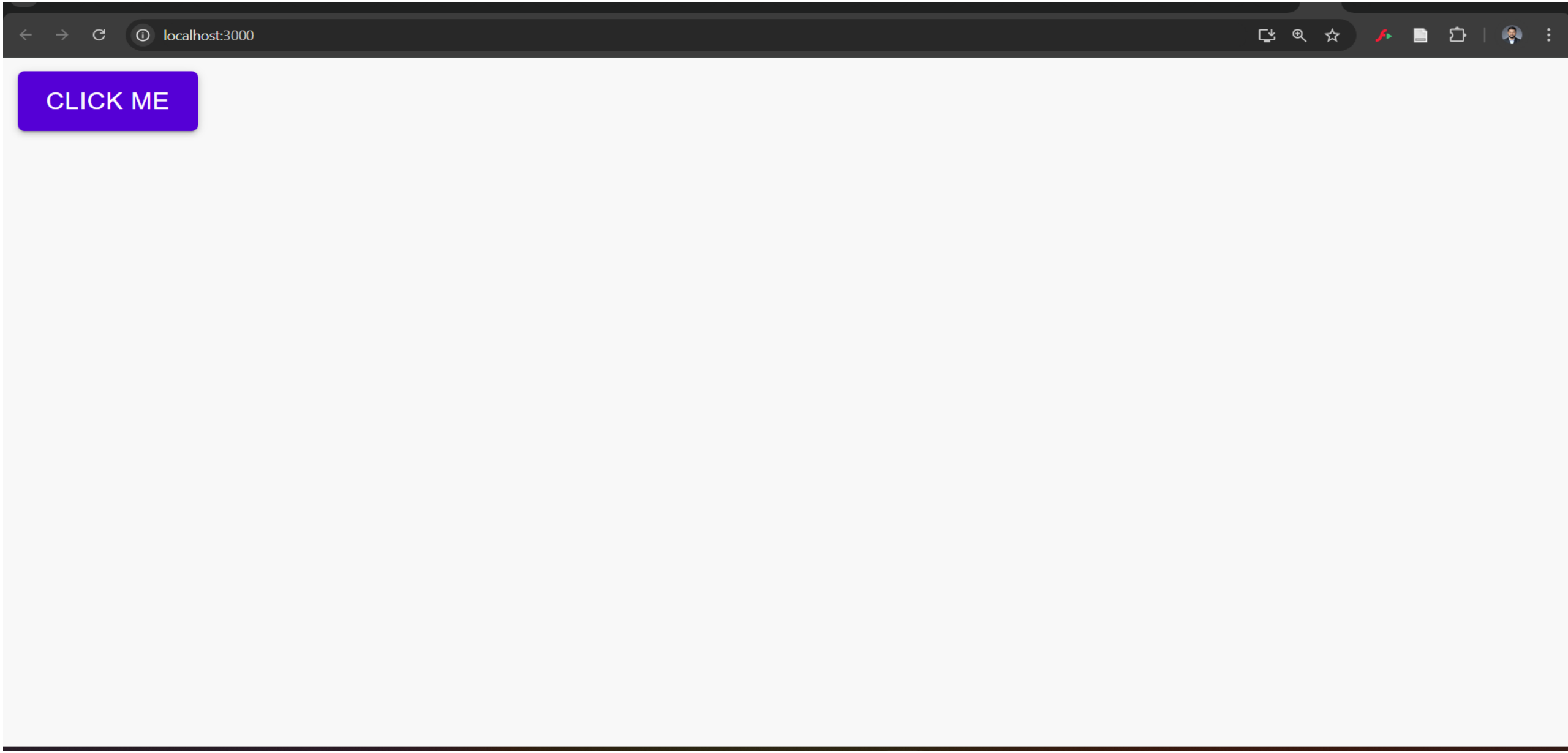
3. **Applying the Theme**: The ThemeProvider component is used to apply the custom theme to the entire application.


localhost:3000
My MUI App
Welcome to React MUI
This is a simple example demonstrating the use of Material-UI components.
CLICK ME

MUI Components - Button

add the code in App.js

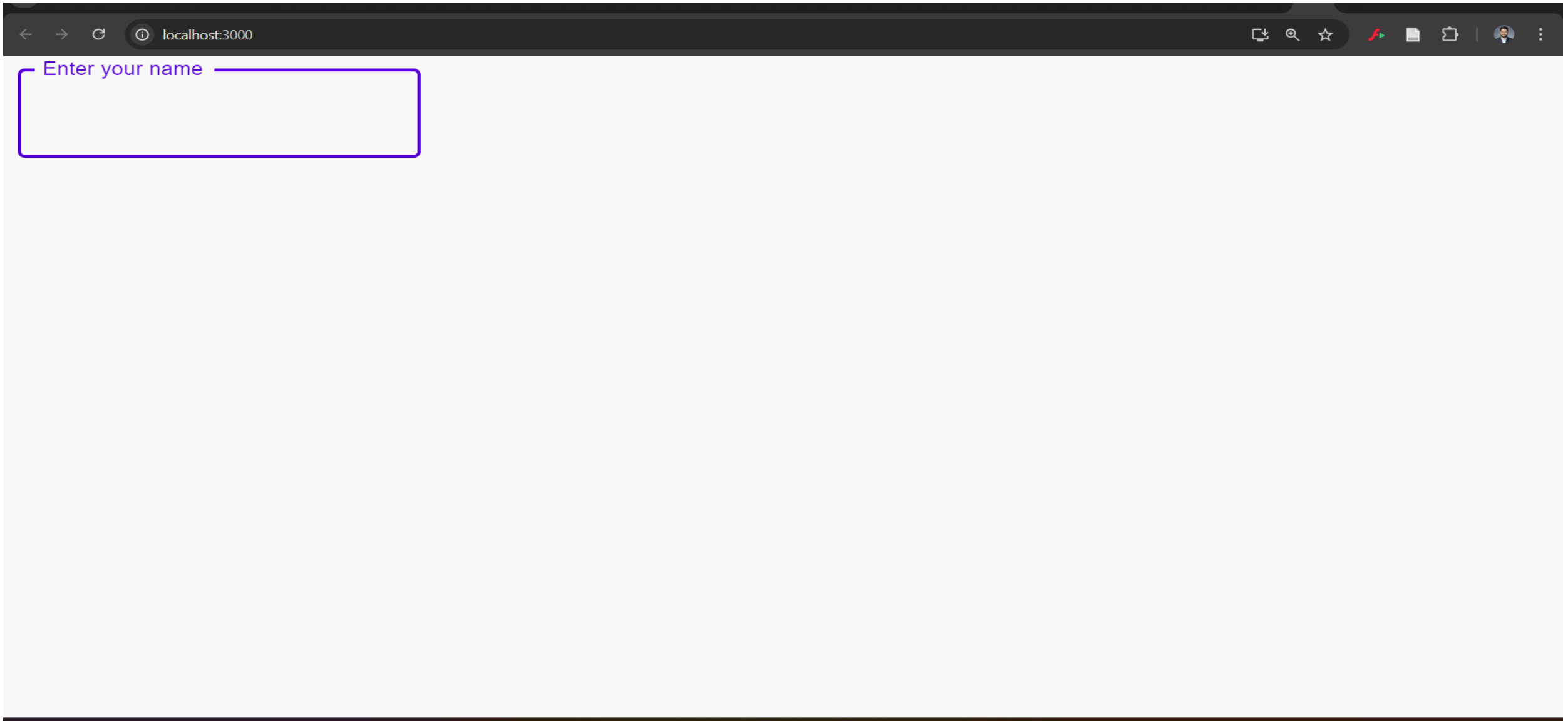
```
import React from 'react';
import Button from '@mui/material/Button';

function MyButton() {
  return (
    <Button variant="contained" color="primary">          →contained for most weightage
      Click Me
    </Button>
  );
}

export default MyButton;
```


localhost:3000
CLICK ME

MUI Components - TextField

add the code in App.js

```
import React from 'react';
import TextField from '@mui/material/TextField';

function MyTextField() {
  return (
    <TextField label="Enter your name" variant="outlined" />
  );
}

export default MyTextField;
```


localhost:3000
Enter your name

MUI Components - CheckBox

add the code in App.js

```
import React from 'react';
import Checkbox from '@mui/material/Checkbox';
import FormControlLabel from '@mui/material/FormControlLabel';

function MyCheckbox() {
  return (
    <FormControlLabel
      control={<Checkbox name="checkedA" />}
      label="Accept terms and conditions"
    />
  );
}

export default MyCheckbox;
```


localhost:3000
Accept terms and conditions

MUI Components - AppBar

add the code in App.js

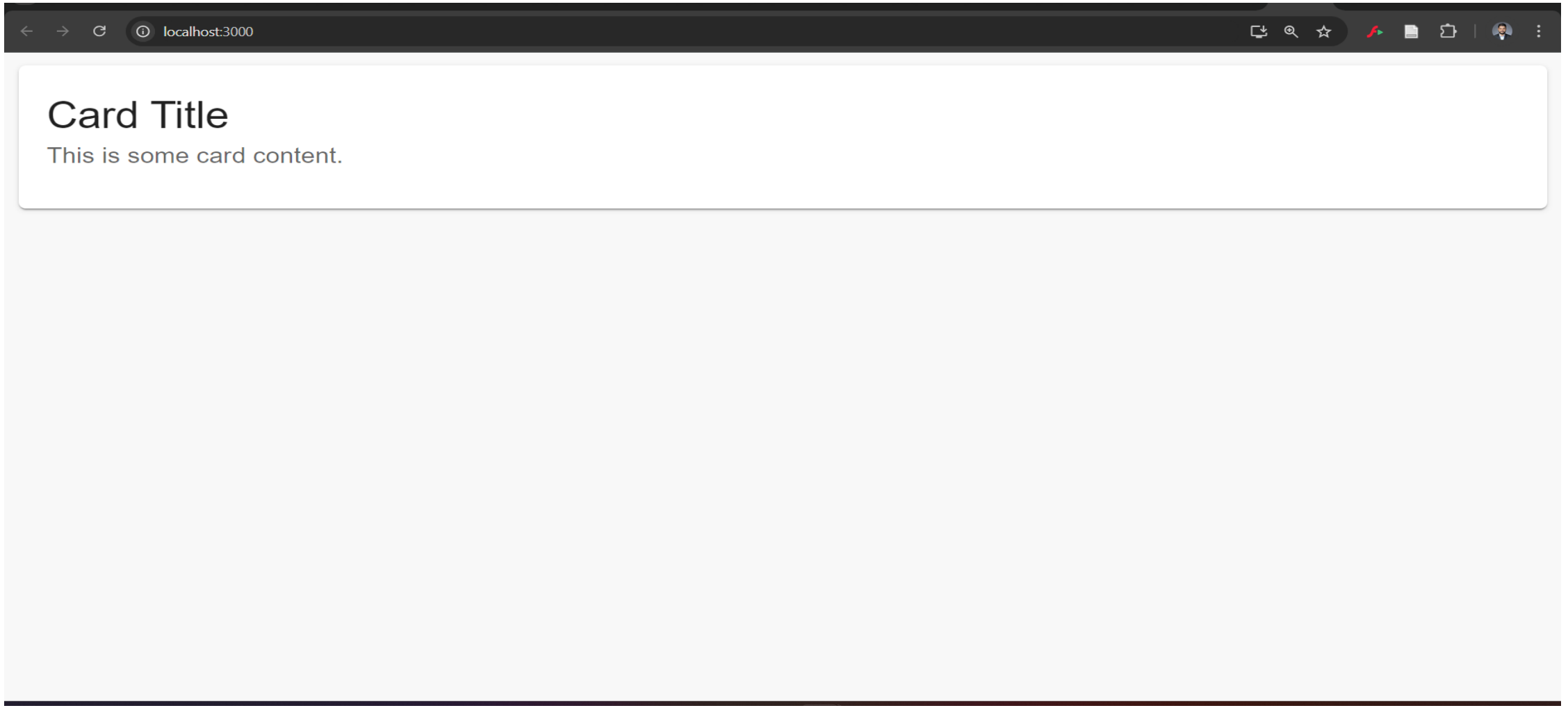
```
import React from 'react';
import AppBar from '@mui/material/AppBar';
import Toolbar from '@mui/material/Toolbar';
import Typography from '@mui/material/Typography';

function MyAppBar() {
  return (
    <AppBar position="static">
      <Toolbar>
        <Typography variant="h6">
          My App
        </Typography>
      </Toolbar>
    </AppBar>
  );
}
export default MyAppBar;
```


localhost:3000
My App

MUI Components - Card

add the code in App.js

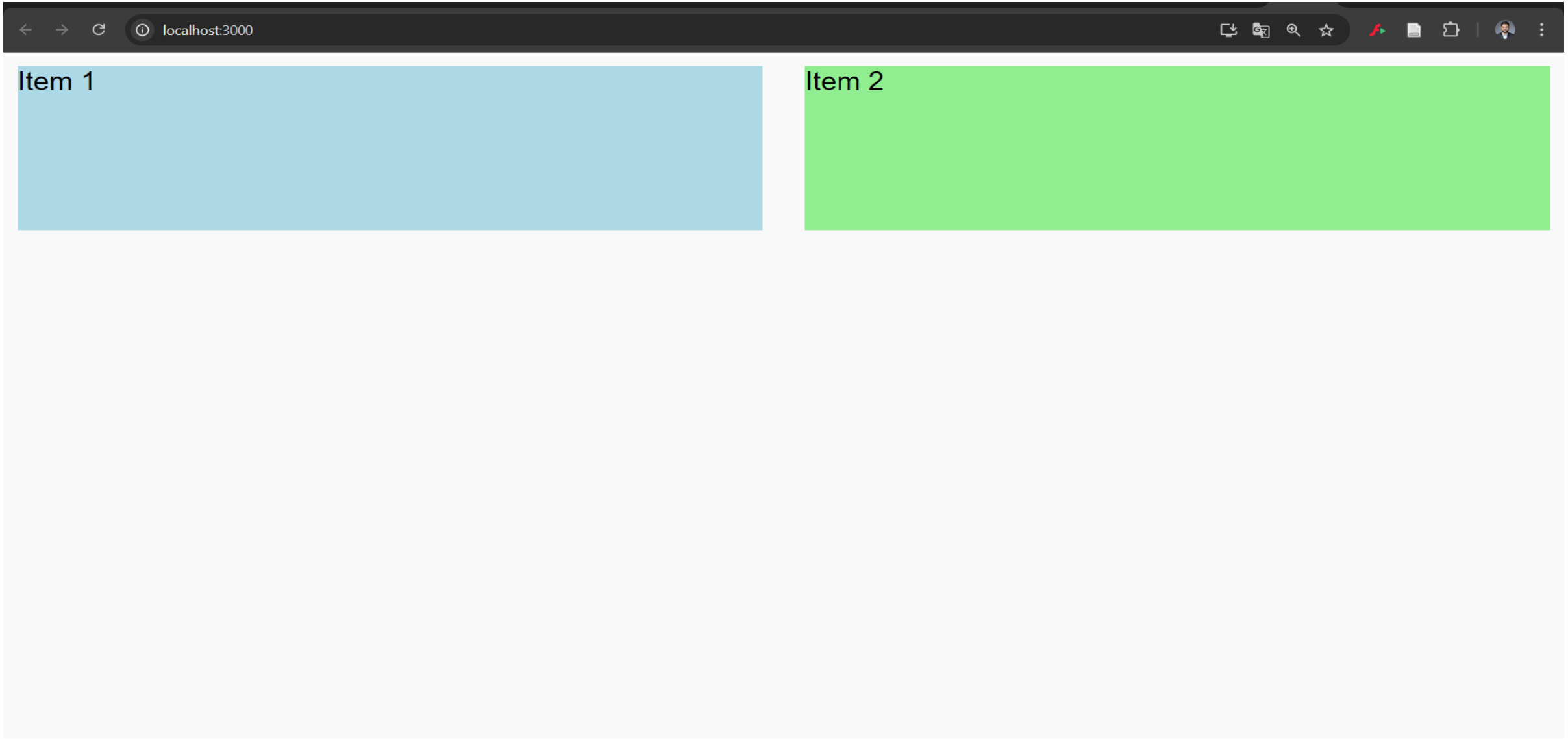
```
import React from 'react';
import Card from '@mui/material/Card';
import CardContent from '@mui/material/CardContent';
import Typography from '@mui/material/Typography';

function MyCard() {
  return (
    <Card>
      <CardContent>
        <Typography variant="h5" component="div">
          Card Title
        </Typography>
        <Typography variant="body2" color="text.secondary">
          This is some card content.
        </Typography>
      </CardContent>
    </Card>
  );
}
export default MyCard;
```


localhost:3000
Card Title
This is some card content.

MUI Components - Grid

add the code in App.js

```
import React from 'react';
import Grid from '@mui/material/Grid';

function MyGrid() {
  return (
    <Grid container spacing={3}>
      <Grid item xs={12} sm={6}>
        <div style={{ backgroundColor: 'lightblue', height: '100px' }}>Item 1</div>
      </Grid>
      <Grid item xs={12} sm={6}>
        <div style={{ backgroundColor: 'lightgreen', height: '100px' }}>Item 2</div>
      </Grid>
    </Grid>
  );
}
export default MyGrid;
```


localhost:3000
Item 1
Item 2

MUI Components - Dialog

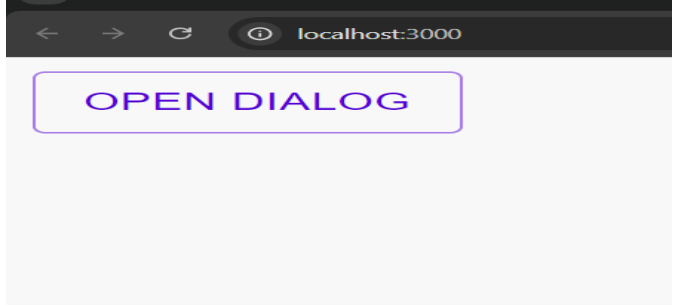
add the code in App.js

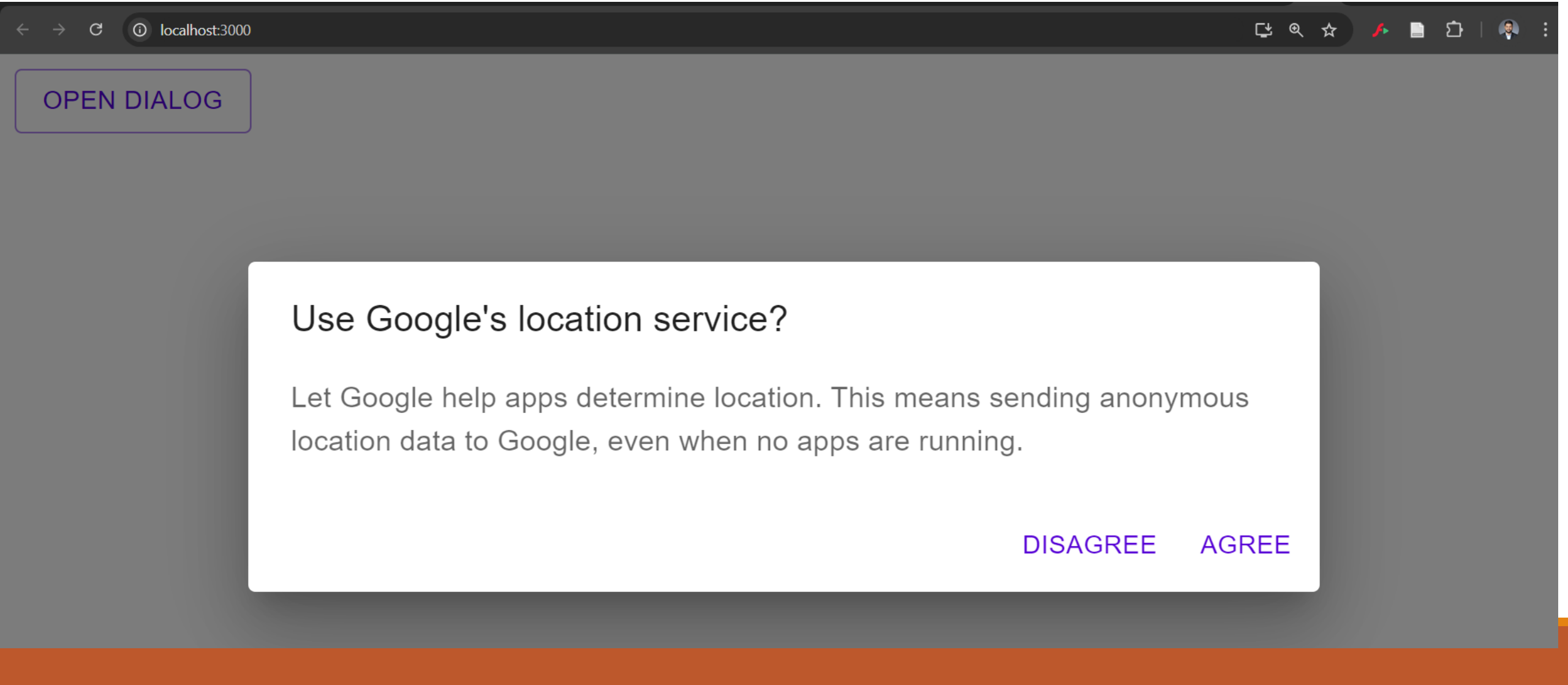
```
import React, { useState } from 'react';
import Dialog from '@mui/material/Dialog';
import DialogActions from '@mui/material/DialogActions';
import DialogContent from '@mui/material/DialogContent';
import DialogContentText from '@mui/material/DialogContentText';
import DialogTitle from '@mui/material/DialogTitle';
import Button from '@mui/material/Button';

function MyDialog() {
  const [open, setOpen] = useState(false);

  const handleClickOpen = () => {
    setOpen(true);
  };

  const handleClose = () => {
    setOpen(false);
  };
```

MUI Components - Dialog

add the code in App.js

```
return (
  <div>
    <Button variant="outlined" onClick={handleClickOpen}>
      Open Dialog
    </Button>
    <Dialog open={open} onClose={handleClose}>
      <DialogTitle>{"Use Google's location service?"}</DialogTitle>
      <DialogContent>
        <DialogContentText>
          Let Google help apps determine location.
        </DialogContentText>
      </DialogContent>
      <DialogActions>
        <Button onClick={handleClose} color="primary">
          Disagree
        </Button>
        <Button onClick={handleClose} color="primary" autoFocus>
          Agree
        </Button>
      </DialogActions>
    </Dialog>
  </div>
 );
}
export default MyDialog;
```


localhost:3000
OPEN DIALOG


localhost:3000
OPEN DIALOG
Use Google's location service?
Let Google help apps determine location. This means sending anonymous location data to Google, even when no apps are running.
DISAGREE
AGREE

MUI Components - Snackbar

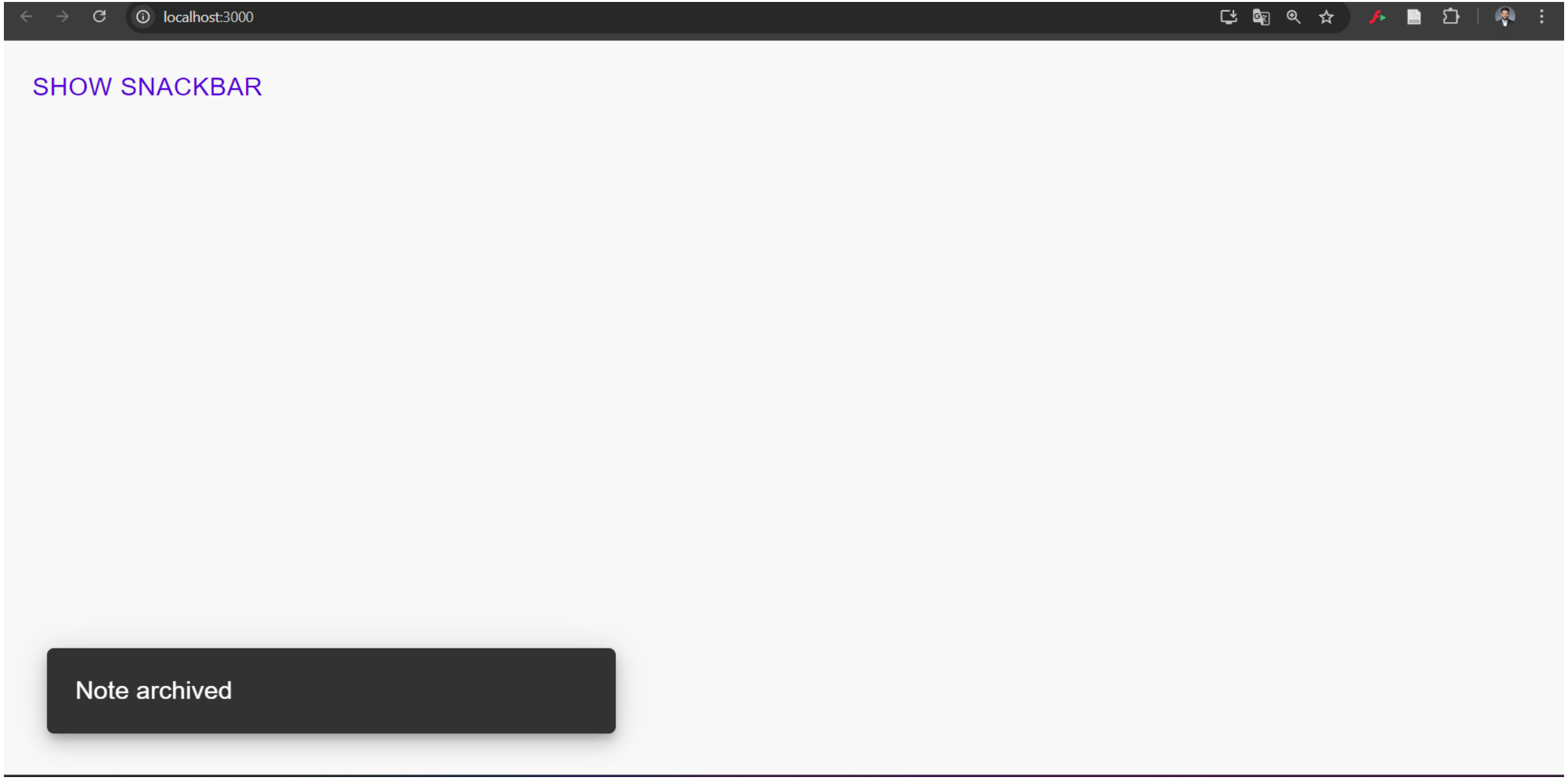
add the code in App.js

```
import React, { useState } from 'react';
import Button from '@mui/material/Button';
import Snackbar from '@mui/material/Snackbar';

function MySnackbar() {
  const [open, setOpen] = useState(false);

  const handleClick = () => {
    setOpen(true);
  };

  const handleClose = (event, reason) => {
    if (reason === 'clickaway') {
      return;
    }
    setOpen(false);
  };
```

MUI Components - Snackbar

add the code in App.js

```
return (
  <div>
    <Button onClick={handleClick}>Show Snackbar</Button>
    <Snackbar
      open={open}
      autoHideDuration={6000}
      onClose={handleClose}
      message="Note archived"
    />
  </div>
 );
}

export default MySnackbar;
```

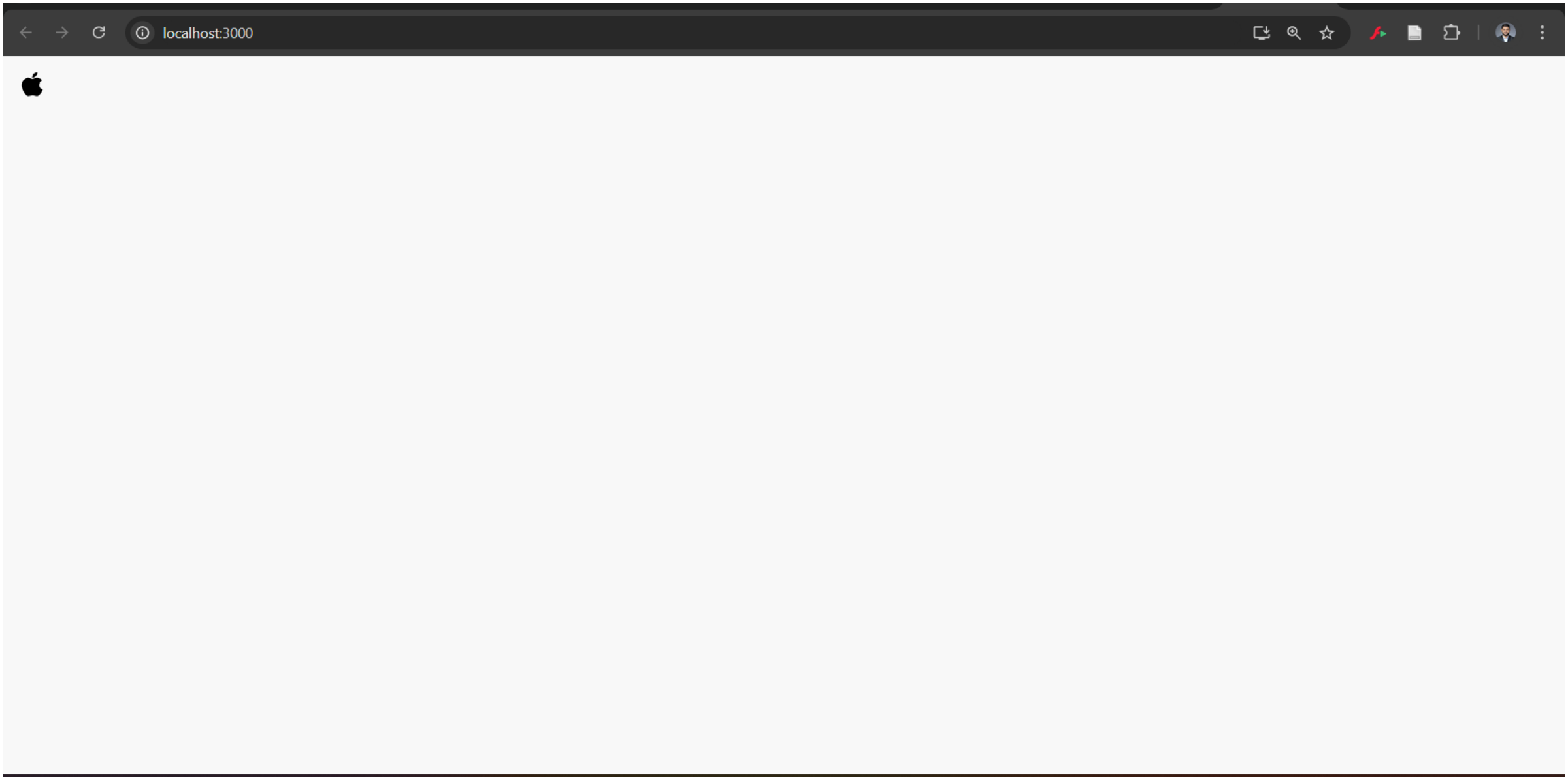

localhost:3000
SHOW SNACKBAR
Note archived

MUI Components - icon

add the code in App.js

npm install react-icons

```
import React, { Component } from 'react';
import { FaApple } from "react-icons/fa";

class Like extends Component {
  render() {
    return <FaApple/>
  }
}

export default Like;
```


localhost:3000

react-icons

Search Icons

- Home
- Ant Design Icons
- Bootstrap Icons
- BoxIcons
- Devicons
- Feather
- Flat Color Icons
- Font Awesome
- Game Icons
- Github Octicons icons

Font Awesome

License CC BY 4.0 License

Project https://fontawesome.com/

Import

```
import { IconName } from "react-icons/fa";
```

Icons


Fa500Px

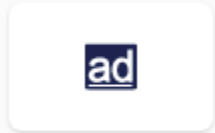

FaAccessibleIcon


FaAccusoft

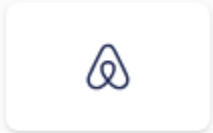

FaAcquisitionsIncorp

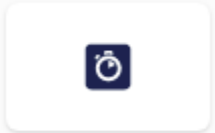

FaAdn


FaAdobe


FaAdversal


FaAffiliatetheme


FaAirbnb


FaAlgolia


FaAlipay


FaAmazonPay


FaAmazon


FaAmilia


FaAndroid


FaAngellist

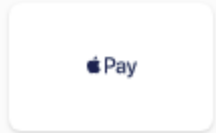

FaAngrycreative


FaAngular


FaAppStoreIos


FaAppStore


FaApper


FaApplePay


FaApple


FaArtstation

MUI Components - List

add the code in App.js

```
import React from 'react';
import List from '@mui/material/List';
import ListItem from '@mui/material/ListItem';
import ListItemText from '@mui/material/ListItemText';

function MyList() {
  return (
    <List>
      <ListItem>
        <ListItemText primary="Item 1" />
      </ListItem>
      <ListItem>
        <ListItemText primary="Item 2" />
      </ListItem>
      <ListItem>
        <ListItemText primary="Item 3" />
      </ListItem>
    </List>
  );
}
export default MyList;
```

Item 1

Item 2

Item 3

MUI Components - Table

add the code in App.js

```
 import React from 'react';
import Table from '@mui/material/Table';
import TableBody from '@mui/material/TableBody';
import TableCell from '@mui/material/TableCell';
import TableContainer from '@mui/material/TableContainer';
import TableHead from '@mui/material/TableHead';
import TableRow from '@mui/material/TableRow';
import Paper from '@mui/material/Paper';

function createData(name, calories, fat, carbs, protein) {
  return { name, calories, fat, carbs, protein };
}

const rows = [
  createData('Frozen yoghurt', 159, 6.0, 24, 4.0),
  createData('Ice cream sandwich', 237, 9.0, 37, 4.3),
  createData('Eclair', 262, 16.0, 24, 6.0),
];
```

MUI Components - Table

add the code in App.js

```
function MyTable() {
 return (
  <TableContainer component={Paper}>
   <Table>
    <TableHead>
     <TableRow>
      <TableCell>Dessert (100g serving)</TableCell>
      <TableCell align="right">Calories</TableCell>
      <TableCell align="right">Fat (g)</TableCell>
      <TableCell align="right">Carbs (g)</TableCell>
      <TableCell align="right">Protein (g)</TableCell>
     </TableRow>
    </TableHead>
    <TableBody>
     {rows.map((row) => (
      <TableRow key={row.name}>
       <TableCell component="th" scope="row">
        {row.name}
```

MUI Components - Table

add the code in App.js

```
</TableCell>
            <TableCell align="right">{row.calories}</TableCell>
            <TableCell align="right">{row.fat}</TableCell>
            <TableCell align="right">{row.carbs}</TableCell>
            <TableCell align="right">{row.protein}</TableCell>
          </TableRow>
        ))}
      </TableBody>
    </Table>
  </TableContainer>
 );
}

export default MyTable;
```

MUI Components - Table

add the code in App.js

Table components from Material-UI: These imports provide various elements needed to build a table using Material-UI's design library:

- **Table: The main container for the table.**
- **TableBody: Holds the table rows that contain data.**
- **TableCell: Represents individual cells in the table.**
- **TableContainer: Provides a container for the table, and in this case, it's wrapped with the Paper component for a Material-UI style.**
- **TableHead: Defines the header row of the table.**
- **TableRow: Represents a row in the table.**
- **Paper: A Material-UI component used to create a raised surface effect for the table container.**

Dessert (100g serving)	Calories	Fat (g)	Carbs (g)	Protein (g)
Frozen yoghurt	159	6	24	4
Ice cream sandwich	237	9	37	4.3
Eclair	262	16	24	6

MUI Components - Slider

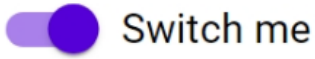
add the code in App.js

```
import React from 'react';
import Slider from '@mui/material/Slider';

function MySlider() {
  return (
    <Slider defaultValue={50} aria-labelledby="continuous-slider" />
  );
}

export default MySlider;
```

MUI Components - Switch

add the code in App.js

```
import React from 'react';
import Switch from '@mui/material/Switch';
import FormControlLabel from '@mui/material/FormControlLabel';

function MySwitch() {
  return (
    <FormControlLabel
      control={<Switch name="checkedA" />}
      label="Switch me"
    />
  );
}

export default MySwitch;
```


Switch me

MUI Components - Avatar

add the code in App.js

```
 import React from 'react';
import Avatar from '@mui/material/Avatar';

function MyAvatar() {
  return (
    <Avatar alt=“Hi" src="/static/images/avatar/1.jpg" />
  );
}

export default MyAvatar;
```

MUI Components - Avatar

Avatar component is used to display images, icons, or text in a circular or square format, commonly for representing user profiles.

H

MUI Components - Badge

add the code in App.js

```
 import React from 'react';
import Badge from '@mui/material/Badge';
import MailIcon from '@mui/icons-material/Mail';

function MyBadge() {
  return (
    <Badge badgeContent={4} color="primary">
      <MailIcon />
    </Badge>
  );
}
export default MyBadge;
```


4

MUI Components - CircularProgress

add the code in App.js

```
 import React from 'react';
import CircularProgress from '@mui/material/CircularProgress';

function MyCircularProgress() {
  return (
    <CircularProgress />
  );
}

export default MyCircularProgress;
```

MUI Components - Drawer

add the code in App.js

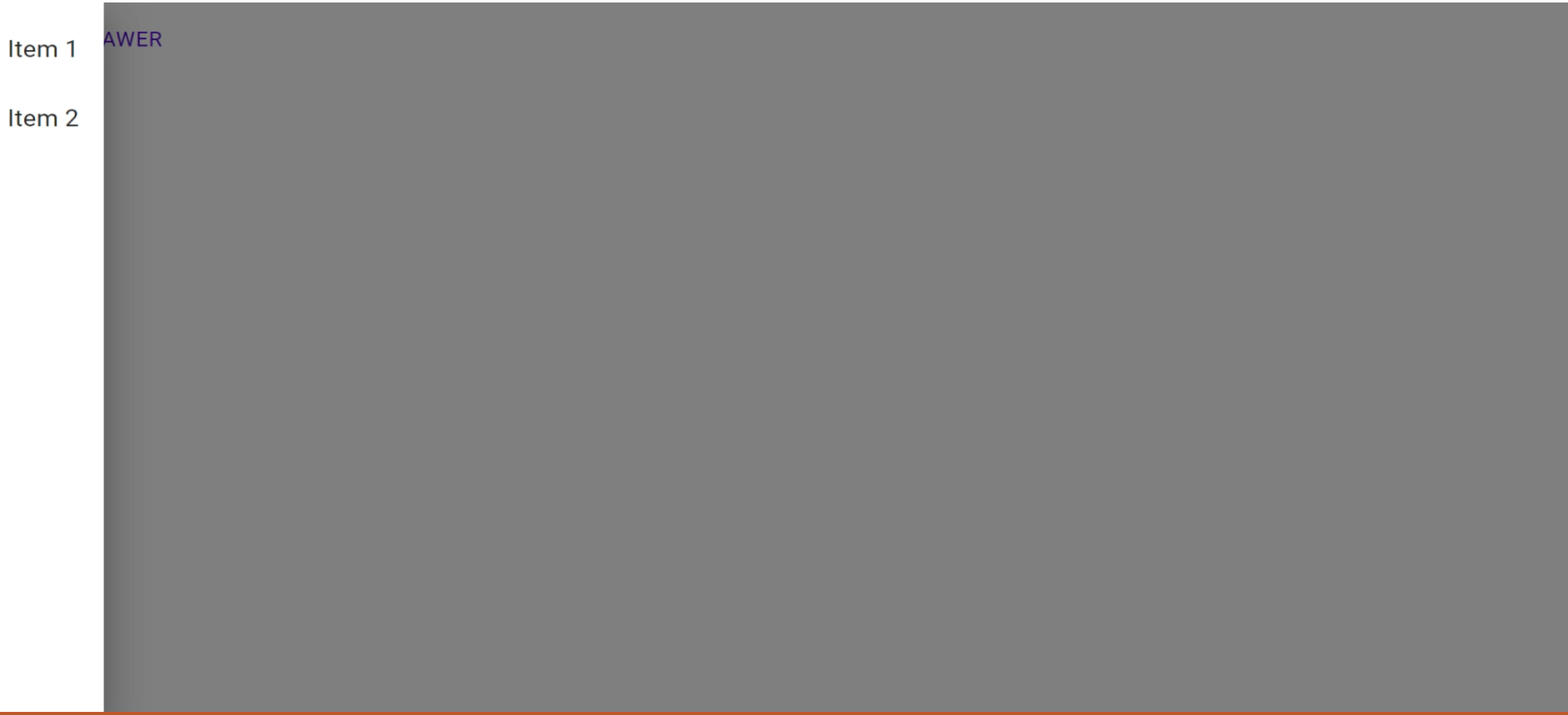
```
 import React, { useState } from 'react';
import Drawer from '@mui/material/Drawer';
import Button from '@mui/material/Button';
import List from '@mui/material/List';
import ListItem from '@mui/material/ListItem';
import ListItemText from

 '@mui/material/ListItemText';

function MyDrawer() {
  const [open, setOpen] = useState(false);

  const toggleDrawer = (open) => (event) => {
    if (event.type === 'keydown' && (event.key === 'Tab' || event.key === 'Shift')) {
      return;
    }
    setOpen(open);
  };
```

MUI Components - Drawer

add the code in App.js

```
return (
  <div>
    <Button onClick={toggleDrawer(true)}>Open Drawer</Button>
    <Drawer open={open} onClose={toggleDrawer(false)}>
      <List>
        <ListItem button>
          <ListItemText primary="Item 1" />
        </ListItem>
        <ListItem button>
          <ListItemText primary="Item 2" />
        </ListItem>
      </List>
    </Drawer>
  </div>
 );
}
export default MyDrawer;
```

OPEN DRAWER



MUI Components - Tabs

add the code in App.js

```
 import React, { useState } from 'react';
import Tabs from '@mui/material/Tabs';
import Tab from '@mui/material/Tab';
import Typography from '@mui/material/Typography';
import Box from '@mui/material/Box';

function TabPanel(props) {
  const { children, value, index, ...other } = props;

  return (
    <div
      role="tabpanel"
      hidden={value !== index}
      id={`simple-tabpanel-${index}`}
      aria-labelledby={`simple-tab-${index}`}
      {...other}
    >
      {value === index && (
        <Box p={3}>
          <Typography>{children}</Typography>
        </Box>
      )}
    </div>
  );
}
```

MUI Components - Tabs

add the code in App.js

```
function MyTabs() {
 const [value, setValue] = useState(0);

 const handleChange = (event, newValue) => {
  setValue(newValue);
 };

 return (
  <div>
   <Tabs value={value} onChange={handleChange}>
    <Tab label="Item One" />
    <Tab label="Item Two" />
    <Tab label="Item Three" />
   </Tabs>
   <TabPanel value={value} index={0}>
    Item One
   </TabPanel>
   <TabPanel value={value} index={1}>
    Item Two
   </TabPanel>
   <TabPanel value={value} index={2}>
    Item Three
   </TabPanel>
  </div>
 );
}
export default MyTabs;
```

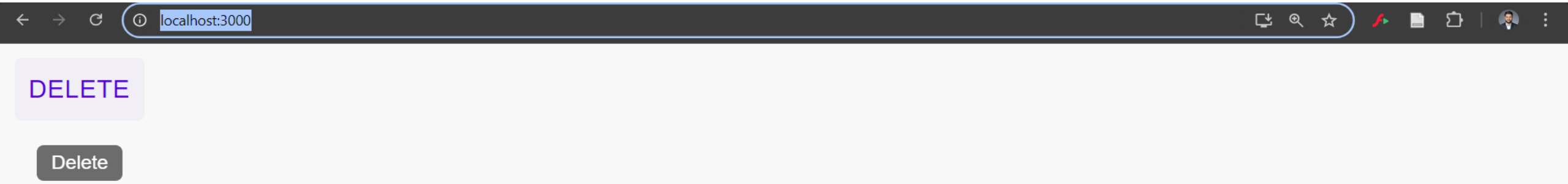
ITEM ONE ITEM TWO ITEM THREE

Item One

MUI Components - Tooltip

add the code in App.js

```
import React from 'react';
import Tooltip from '@mui/material/Tooltip';
import Button from '@mui/material/Button';

function MyTooltip() {
  return (
    <Tooltip title="Delete">
      <Button>Delete</Button>
    </Tooltip>
  );
}

export default MyTooltip;
```


localhost:3000
DELETE
Delete

MUI Components - Accordion

add the code in App.js

```
import React from 'react';
import { Accordion, AccordionSummary, AccordionDetails, Typography } from '@mui/material';
import ExpandMoreIcon from '@mui/icons-material/ExpandMore';

function MyAccordion() {
  return (
    <Accordion>
      <AccordionSummary expandIcon={<ExpandMoreIcon />}>
        <Typography>Accordion Title</Typography>
      </AccordionSummary>
      <AccordionDetails>
        <Typography>
          Accordion Content
        </Typography>
      </AccordionDetails>
    </Accordion>
  );
}

export default MyAccordion;
```

Accordion Title

Accordion Title

Accordion Content

MUI Components - Alert

add the code in App.js

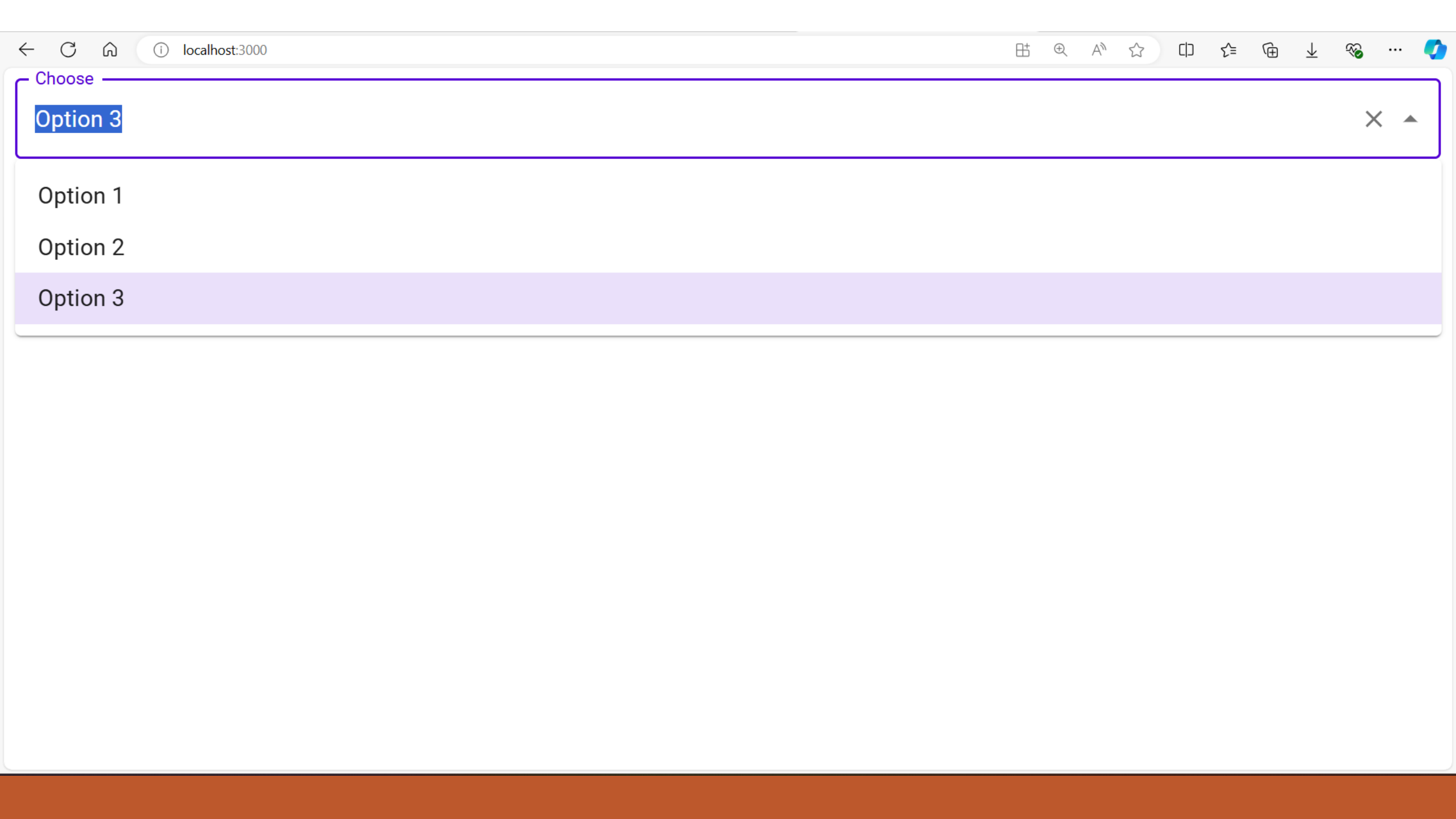
```
import React from 'react';
import { Alert } from '@mui/material';

function MyAlert() {
  return <Alert severity="warning">This is a warning alert!</Alert>;
}

export default MyAlert;
```

⚠ This is a warning alert!

MUI Components - Autocomplete

add the code in App.js

```
import React from 'react';
import { Breadcrumbs, Link, Typography } from '@mui/material';

function MyBreadcrumbs() {
  return (
    <Breadcrumbs aria-label="breadcrumb">
      <Link color="inherit" href="/">
        Home
      </Link>
      <Link color="inherit" href="/getting-started/installation/">
        Installation
      </Link>
      <Typography color="textPrimary">Breadcrumbs</Typography>
    </Breadcrumbs>
  );
}
export default MyBreadcrumbs;
```


localhost:3000
Choose
Option 3
Option 1
Option 2
Option 3

MUI Components - Breadcrumbs

A breadcrumbs is a list of links that help visualize a page's location within a site's hierarchical structure, it allows navigation up to any of the ancestors.

MUI Components - Breadcrumbs

add the code in App.js

```
import React from 'react';
import { Breadcrumbs, Link, Typography } from '@mui/material';

function MyBreadcrumbs() {
  return (
    <Breadcrumbs aria-label="breadcrumb">
      <Link color="inherit" href="/">
        Home
      </Link>
      <Link color="inherit" href="/getting-started/installation/">
        Installation
      </Link>
      <Typography color="textPrimary">Breadcrumbs</Typography>
    </Breadcrumbs>
  );
}
export default MyBreadcrumbs;
```

MUI Components - ButtonGroup

add the code in App.js

```
import React from 'react';
import { Button, ButtonGroup } from '@mui/material';

function MyButtonGroup() {
  return (
    <ButtonGroup variant="contained" color="primary">
      <Button>One</Button>
      <Button>Two</Button>
      <Button>Three</Button>
    </ButtonGroup>
  );
}

export default MyButtonGroup;
```


ONE
TWO
THREE

MUI Components - Chip

- **Chips are compact elements that represent an input, attribute, or action.**
- **Chips allow users to enter information, make selections, filter content, or trigger actions.**

MUI Components - Chip

add the code in App.js

```
import React from 'react';
import { Chip } from '@mui/material';

function MyChip() {
  return <Chip label="Chip Component" />;
}

export default MyChip;
```

Chip Component

MUI Components - Divider

add the code in App.js

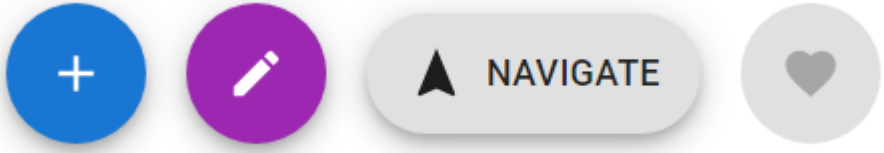
```
import React from 'react';
import { Divider } from '@mui/material';

function MyDivider() {
  return (
    <div>
      <p>Content above the divider</p>
      <Divider />
      <p>Content below the divider</p>
    </div>
  );
}

export default MyDivider;
```

Content above the divider

Content below the divider

MUI Components - Fab (Floating Action Button)

- A floating action button appears in front of all screen content, typically as a circular shape with an icon in its center.
- FABs come in two types: regular, and extended.
- Only use a FAB if it is the most suitable way to present a screen's primary action.
- Only one component is recommended per screen to represent the most common action.



MUI Components - Fab (Floating Action Button)

add the code in App.js

```
import React from 'react';
import { Fab } from '@mui/material';
import AddIcon from '@mui/icons-material/Add';

function MyFab() {
  return <Fab color="primary" aria-label="add"><AddIcon /></Fab>;
}

export default MyFab;
```

MUI Components - LinearProgress

add the code in App.js

```
import React from 'react';
import { LinearProgress } from '@mui/material';

function MyLinearProgress() {
  return <LinearProgress />;
}

export default MyLinearProgress;
```

MUI Components - Menu

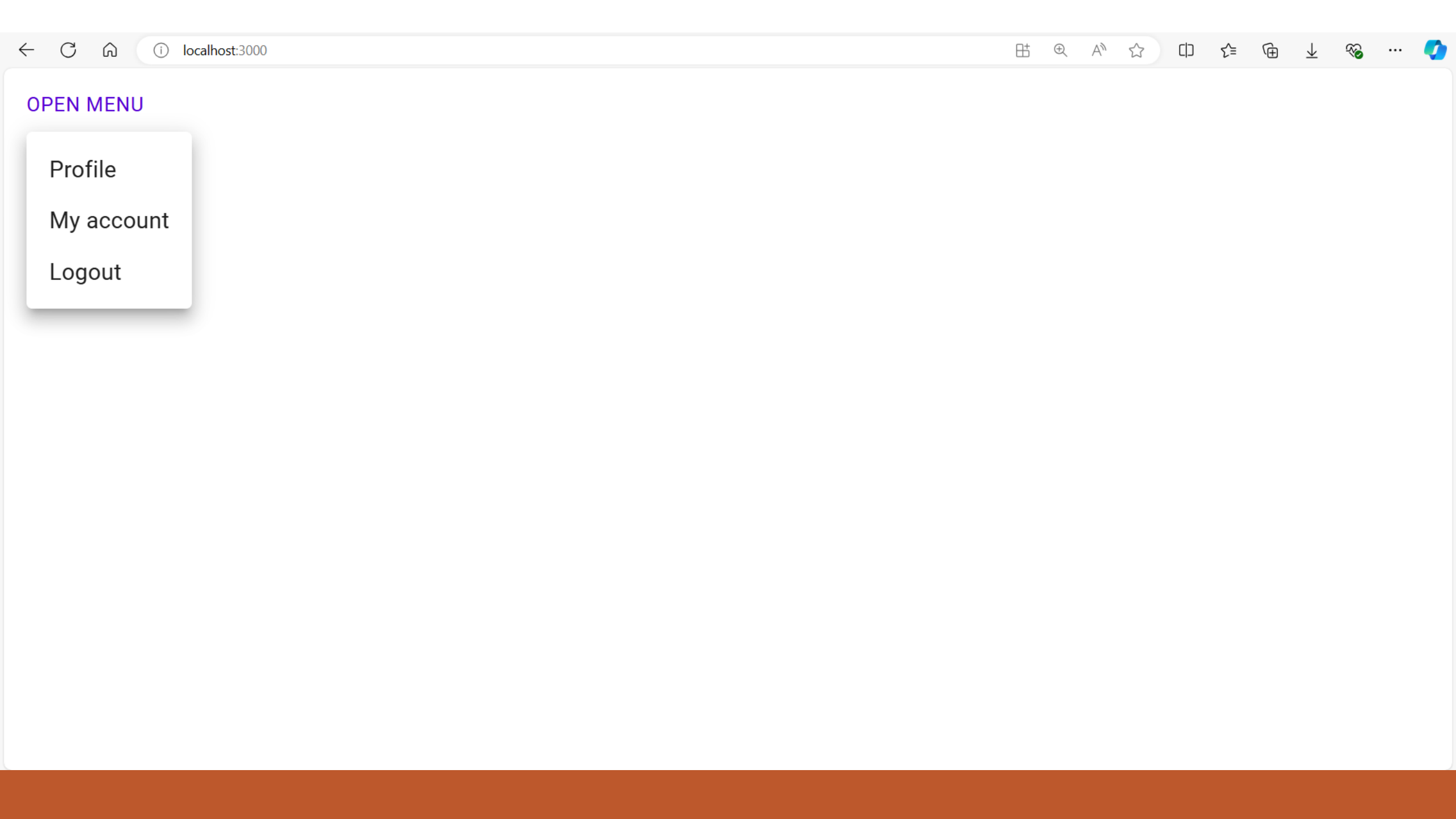
add the code in App.js

```
import React, { useState } from 'react';
import { Menu, MenuItem, Button } from '@mui/material';

function MyMenu() {
  const [anchorEl, setAnchorEl] = useState(null);

  const handleClick = (event) => {
    setAnchorEl(event.currentTarget);
  };

  const handleClose = () => {
    setAnchorEl(null);
  };
```

MUI Components - Menu

add the code in App.js

```
return (
  <div>
    <Button aria-controls="simple-menu" aria-haspopup="true" onClick={handleClick}>
      Open Menu
    </Button>
    <Menu
      id="simple-menu"
      anchorEl={anchorEl}
      keepMounted
      open={Boolean(anchorEl)}
      onClose={handleClose}
    >
      <MenuItem onClick={handleClose}>Profile</MenuItem>
      <MenuItem onClick={handleClose}>My account</MenuItem>
      <MenuItem onClick={handleClose}>Logout</MenuItem>
    </Menu>
  </div>
 );
}

export default MyMenu;
```


localhost:3000
OPEN MENU
Profile
My account
Logout

MUI Components - Pagination

add the code in App.js

```
import React from 'react';
import { Pagination } from '@mui/material';

function MyPagination() {
  return <Pagination count={10} color="primary" />;
}

export default MyPagination;
```

1 2 3 4 5 ... 10

MUI Components - Popover

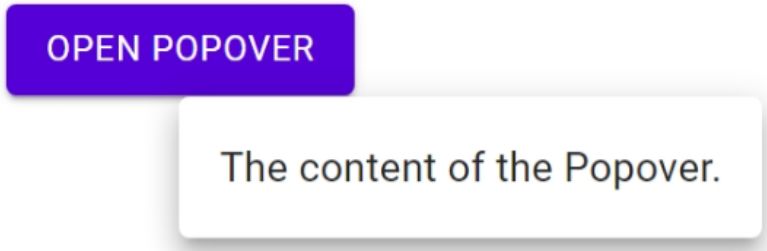
add the code in App.js

```
import React, { useState } from 'react';
import { Popover, Button, Typography } from '@mui/material';

function MyPopover() {
  const [anchorEl, setAnchorEl] = useState(null);

  const handleClick = (event) => {
    setAnchorEl(event.currentTarget);
  };

  const handleClose = () => {
    setAnchorEl(null);
  };

  const open = Boolean(anchorEl);
  const id = open ? 'simple-popover' : undefined;
```

MUI Components - Popover

add the code in App.js

```
 return (
   <div>
     <Button aria-describedby={id} variant="contained" onClick={handleClick}>
       Open Popover
     </Button>
     <Popover
       id={id}
       open={open}
       anchorEl={anchorEl}
       onClose={handleClose}
       anchorOrigin={{
         vertical: 'bottom',
         horizontal: 'center',
       }}
     >
       <Typography sx={{ p: 2 }}>The content of the Popover.</Typography>
     </Popover>
   </div>
 );
}

export default MyPopover;
;
```


OPEN POPOVER
The content of the Popover.

MUI Components - Rating

add the code in App.js

```
import React from 'react';
import { Rating } from '@mui/material';

function MyRating() {
  return <Rating name="simple-controlled" value={3} />;
}

export default MyRating;
```

MUI Components - Skeleton

add the code in App.js

```
import React from 'react';
import { Skeleton } from '@mui/material';

function MySkeleton() {
  return <Skeleton variant="rectangular" width={210} height={118} />;
}

export default MySkeleton;
```

MUI Components - SpeedDial

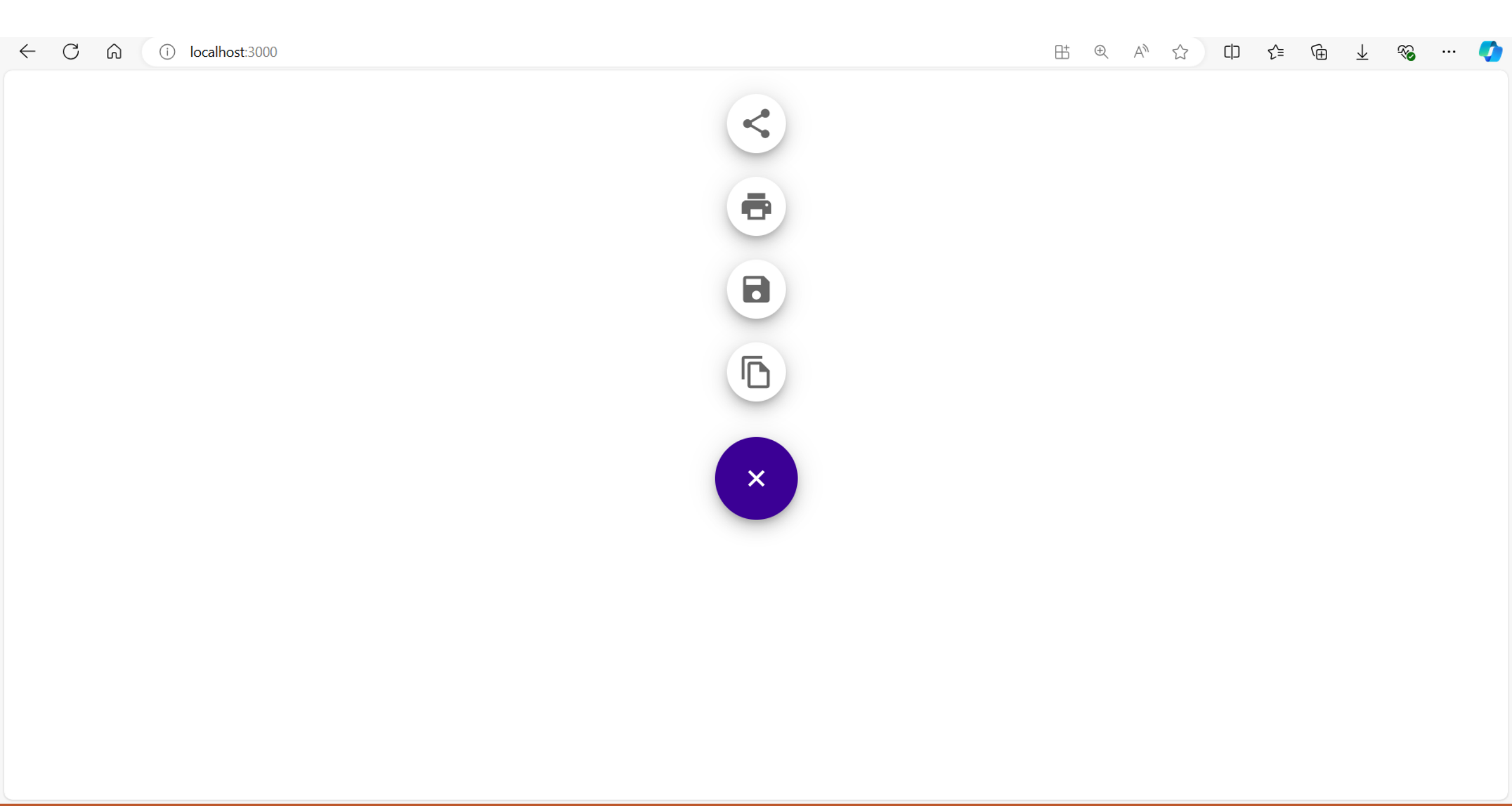
add the code in App.js

```
import React from 'react';
import { SpeedDial, SpeedDialIcon, SpeedDialAction } from '@mui/material';
import FileCopyIcon from '@mui/icons-material/FileCopyOutlined';
import SaveIcon from '@mui/icons-material/Save';
import PrintIcon from '@mui/icons-material/Print';
import ShareIcon from '@mui/icons-material/Share';

function MySpeedDial() {
  return (
    <SpeedDial
      ariaLabel="SpeedDial example"
      icon={<SpeedDialIcon />}
      direction="up"
    >
```

MUI Components - SpeedDial

add the code in App.js

```
<SpeedDialAction icon={<FileCopyIcon />} tooltipTitle="Copy" />
    <SpeedDialAction icon={<SaveIcon />} tooltipTitle="Save" />
    <SpeedDialAction icon={<PrintIcon />} tooltipTitle="Print" />
    <SpeedDialAction icon={<ShareIcon />} tooltipTitle="Share" />
  </SpeedDial>
 );
}
export default MySpeedDial;
```


localhost:3000