

**DEPARTMENT OF CSE**  
**COURSE CODE: 23SDCS12A / 23SDCS12R**  
**FULL STACK APPLICATION DEVELOPMENT**

**Date of the Session:**    /    /   

**Time of The Session:** \_\_\_\_\_ to \_\_\_\_\_

**#LAB – 5 → Utilizing the predefined responsive design elements with Bootstrap / Material-UI for designing**

**Prerequisites:**

Material UI need to be installed or Bootstrap CDN need to be integrated

**Exercise 1:**

Create a form with Material-UI / Bootstrap components (such as text fields, select fields, and checkboxes) to collect user information and validate the input.

**Exercise 2:**

Implement a responsive navigation bar using Material-UI's App Bar / Bootstrap component. The navigation bar should have a logo, menu items, and handle mobile responsiveness.

❖ Watch The Video And Do In Visual Studio

5a <https://youtu.be/N99cwmw2eE0?si=Sx4KPFU9i7JlOy90>

5b <https://youtu.be/LiLREqksEak?si=-LjglQEKbFEM6LTb>

**index.html**

```
<!doctype html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <link rel="icon" type="image/svg+xml" href="/vite.svg" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></scri
pt>
    <title>Vite + React</title>
  </head>
  <body>
    <div id="root"></div>
    <script type="module" src="/src/main.jsx"></script>
  </body>
</html>
```

**Ex5.jsx**

```
import ResponsiveAppBar from './AppBar';
import './style.css';

export default function Ex5() {

  function Mover(){
document.getElementById("login").className='mover-login'
  }

  function Mleave(){
    document.getElementById("login").className='login-form'
  }

  return (
    <div className='parent'>
      <ResponsiveAppBar/>
      <center>
        <div className='login-form' onMouseOver={Mover} onMouseLeave={Mleave}
id="login">
          <table>
            <tr>
              <td colSpan={2} style={{ backgroundColor: 'yellowgreen' }}>Login Page</td>
            </tr>
            <tr>
              <td>Name: </td>
              <td>
                <input type="text" className='form-control' name="t1" id="un" />
              </td>
            </tr>
            <tr>
              <td>Password: </td>
              <td>
                <input type="password" className='form-control' name="t2" id="pwd" />
              </td>
            </tr>
          </table>
        </div>
      </center>
    </div>
  )
}
```

```
<tr>
  <td>Role: </td>
  <td>
    <select className="form-control" id="sel1">
      <option value={1}>Admin</option>
      <option value={2}>User</option>
    </select>
  </td>
</tr>
<tr>
  <td colspan={2}> <button className="btn btn-
success">Login</button></td>
</tr>

</table>
</div>
</center>
</div>
);
}
```

**AppBar.jsx**

```
import * as React from 'react';
import AppBar from '@mui/material/AppBar';
import Box from '@mui/material/Box';
import Toolbar from '@mui/material/Toolbar';
import IconButton from '@mui/material/IconButton';
import Typography from '@mui/material/Typography';
import Menu from '@mui/material/Menu';
import MenuIcon from '@mui/icons-material/Menu';
import Container from '@mui/material/Container';
import Avatar from '@mui/material/Avatar';
import Button from '@mui/material/Button';
import Tooltip from '@mui/material/Tooltip';
import MenuItem from '@mui/material/MenuItem';
import AdbIcon from '@mui/icons-material/Adb';

const pages = ['Products', 'Pricing', 'Blog'];
const settings = ['Profile', 'Account', 'Dashboard', 'Logout'];

function ResponsiveAppBar() {
  const [anchorElNav, setAnchorElNav] = React.useState(null);
  const [anchorElUser, setAnchorElUser] = React.useState(null);

  const handleOpenNavMenu = (event) => {
    setAnchorElNav(event.currentTarget);
  };
  const handleOpenUserMenu = (event) => {
    setAnchorElUser(event.currentTarget);
  };

  const handleCloseNavMenu = () => {
    setAnchorElNav(null);
  };

  const handleCloseUserMenu = () => {
    setAnchorElUser(null);
  };
}
```

```
};
```

```
return (
  <AppBar position="static">
    <Container maxWidth="xl">
      <Toolbar disableGutters>
        <Adblcon sx={{ display: { xs: 'none', md: 'flex' }, mr: 1 }} />
        <Typography
          variant="h6"
          noWrap
          component="a"
          href="#app-bar-with-responsive-menu"
          sx={{
            mr: 2,
            display: { xs: 'none', md: 'flex' },
            fontFamily: 'monospace',
            fontWeight: 700,
            letterSpacing: '.3rem',
            color: 'inherit',
            textDecoration: 'none',
          }}
        >
          LOGO
        </Typography>

        <Box sx={{ flexGrow: 1, display: { xs: 'flex', md: 'none' } }}>
          <IconButton
            size="large"
            aria-label="account of current user"
            aria-controls="menu-appbar"
            aria-haspopup="true"
            onClick={handleOpenNavMenu}
            color="inherit"
          >
            <MenuIcon />
          </IconButton>
          <Menu
            id="menu-appbar"
```

```

    anchorEl={anchorElNav}
    anchorOrigin={{
      vertical: 'bottom',
      horizontal: 'left',
    }}
    keepMounted
    transformOrigin={{
      vertical: 'top',
      horizontal: 'left',
    }}
    open={Boolean(anchorElNav)}
    onClose={handleCloseNavMenu}
    sx={{ display: { xs: 'block', md: 'none' } }}
  >
    {pages.map((page) => (
      <MenuItem key={page} onClick={handleCloseNavMenu}>
        <Typography sx={{ textAlign: 'center' }}>{page}</Typography>
      </MenuItem>
    ))}
  </Menu>
</Box>
<Adblcon sx={{ display: { xs: 'flex', md: 'none' }, mr: 1 }} />
<Typography
  variant="h5"
  noWrap
  component="a"
  href="#app-bar-with-responsive-menu"
  sx={{
    mr: 2,
    display: { xs: 'flex', md: 'none' },
    flexGrow: 1,
    fontFamily: 'monospace',
    fontWeight: 700,
    letterSpacing: '.3rem',
    color: 'inherit',
    textDecoration: 'none',
  }}
>

```

```

    LOGO
  </Typography>
<Box sx={{ flexGrow: 1, display: { xs: 'none', md: 'flex' } }}>
  {pages.map((page) => (
    <Button
      key={page}
      onClick={handleCloseNavMenu}
      sx={{ my: 2, color: 'white', display: 'block' }}
    >
      {page}
    </Button>
  ))}
</Box>
<Box sx={{ flexGrow: 0 }}>
  <Tooltip title="Open settings">
    <IconButton onClick={handleOpenUserMenu} sx={{ p: 0 }}>
      <Avatar alt="Remy Sharp" src="/static/images/avatar/2.jpg" />
    </IconButton>
  </Tooltip>
  <Menu
    sx={{ mt: '45px' }}
    id="menu-appbar"
    anchorEl={anchorElUser}
    anchorOrigin={{
      vertical: 'top',
      horizontal: 'right',
    }}
    keepMounted
    transformOrigin={{
      vertical: 'top',
      horizontal: 'right',
    }}
    open={Boolean(anchorElUser)}
    onClose={handleCloseUserMenu}
  >
    {settings.map((setting) => (
      <MenuItem key={setting} onClick={handleCloseUserMenu}>
        <Typography sx={{ textAlign: 'center' }}>{setting}</Typography>
      </MenuItem>
    ))}
  </Menu>
</Box>

```



```
        </MenuItem>
      )}
    </Menu>
  </Box>
</Toolbar>
</Container>
</AppBar>
);
}
export default ResponsiveAppBar;
```

### main.jsx

```
import { StrictMode } from "react";
import { createRoot } from "react-dom/client";
import "./index.css";
import App from './App.jsx'
import Ex5 from "./components/lab 5/EX5.jsx";

createRoot(document.getElementById("root")).render(
  <StrictMode>
    <Ex5/>
  </StrictMode>,
)
```

**Style.css**

```
.parent{

border: 1px solid red;
width: 80vw;
padding: 10px;
}

.login-form{
    border: 1px solid red;
    margin: 50px;
    width: 20vw;
    height: auto;
    text-align: center;
    justify-content: center;
    padding: 10px;
    box-shadow: 2px 2px 3px yellow, -2px -2px 3px yellowgreen;
    border-radius: 20px;
}

.mover-login{
    border: 1px solid red;
    margin: 50px;
    width: 25vw;
    height: auto;
    text-align: center;
    justify-content: center;
    padding: 10px;
    box-shadow: 2px 2px 7px yellow, -2px -2px 7px yellowgreen;
    border-radius: 20px;
}

table{
    width: 100%;
}

td{
    padding: 5px;
    border-radius: 10px;
}
```

## Output

The screenshot displays a web application interface. At the top, a blue navigation bar contains the text 'LOGO', 'PRODUCTS', 'PRICING', and 'BLOG' on the left, and a circular profile icon with the letter 'R' on the right. Below the navigation bar, the main content area is white. In the center, there is a 'Login Page' form. The form has a green header with the text 'Login Page'. It contains three input fields: 'Name:', 'Password:', and 'Role:'. The 'Role:' field is a dropdown menu with 'Admin' selected. Below the input fields is a green 'Login' button.

## VIVA QUESTIONS:

1. How do you add Material-UI to a React project?

- Install with npm:  

```
bash
```

```
npm install @mui/material @emotion/react @emotion/styled
```
- Import components:  

```
javascript
```

```
import { Button } from '@mui/material';
```

2. Describe the Box component in Material-UI and its use cases.

- **Box** is a wrapper component for layout and styling, offering easy control over spacing, alignment, and positioning using the **sx** prop.
- Use cases: Layout, responsive design, applying padding/margins.

3. How do you add Bootstrap to a React project?

- Install with npm:  

```
bash
```

```
npm install bootstrap
```
- Import in `index.js`:  

```
javascript
```

```
import 'bootstrap/dist/css/bootstrap.min.css';
```

4. What are the main differences between Bootstrap and Material-UI?

- **Bootstrap:** Simple, flexible grid and utility classes, minimal design.
- **Material-UI:** Material Design, rich components, and deep customization with themes.

5. What is React-Bootstrap, and how does it differ from regular Bootstrap?

- **React-Bootstrap:** Bootstrap components as React components, no jQuery.
- It integrates better with React's declarative style and avoids direct DOM manipulation.

*(For Evaluator's use only)*

<u>Comment of the Evaluator (if Any)</u>	<u>Evaluator's Observation</u>
	Marks Secured _____ out of 50
	Full Name of the Evaluator:
	Signature of the Evaluator Date of Evaluation: