

## IP PRACTICAL NO. 10

**Date of Performance:** 18 – 10 – 2022

**Software Requirement:** Visual Studio Code, NotePad, NotePad++, NodeJS

**Aim:** To implement Forms using Reactstrap & UI design using material-UI

**Objectives:** The aim of this experiment is that the students will be able

- Implement Reactstrap syntax to create forms
- Understand different features of Material-UI & its usage in creating responsive UI

**Outcomes:** After study of this experiment, the students will be able

- Create forms and validate different fields in it
- Implement the usage of Material-UI in creation of responsive UI

**Prerequisite:** Basic knowledge of HTML, CSS, JavaScript & React required.

### **Theory:**

#### **Reactstrap**

Reactstrap is a React component library for Bootstrap. Reactstrap is a bootstrapbased React UI library that is used to make good-looking webpages with its seamless and easy-to-use component. Reactstrap does not embed its own style, but it depends upon the Bootstrap CSS framework for its styles and theme. This allows you to have consistent styles across your React-based components and static parts of your site and allows you to include your own custom Bootstrap theme when needed. I

Install Reactstrap: `npm install reactstrap bootstrap`

Import Bootstrap CSS in the src/index.js file: `import`

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

#### **Material UI**

Material UI is the most powerful and efficient tool to build an application by adding Designs and Animations and using it with technical and scientific innovation. It is basically a design language that was developed by Google in 2014. It uses more Design and Animations, grid-system and provides shadows and lightning effects.

It can be used with all the JavaScript frameworks like AngularJS, VueJS, and libraries like ReactJS, to make the Application more amazing and responsive. With over 35,000 stars on the GitHub, Material UI is one of the top User Interface libraries for React.

Features of Material UI:

- Material UI provides low-level utility functions called “style functions” for building powerful design systems
- Access the theme values directly from the component props
- Encourage UI consistency
- Write responsive style effortlessly
- Work with any theme object
- Less than KB g zipped • Fast enough to execute.

Install Material UI by using npm – npm install @material-ui/core

To use SVG icons, install package using – npm install @material-ui/icons

### **Problem Statement:**

Implement Forms using Reactstrap & UI design using material-UI

### **Source Code: Forms**

#### ***App.js***

```
import { Component } from 'react';
import {
  Form,
  FormFeedback,
  FormGroup,
  Label,
  Input,
  Button,
} from 'reactstrap';
import './App.css';
class App extends Component {
  constructor(props) {
    super(props);
    this.state = {
      email: '',
      password: '',
      validate: {
        emailState: '',
      },
    };
  };
  this.handleChange = this.handleChange.bind(this);
}
```

```

    handleChange = (event) => {
    const { target } = event;
    const value = target.type === 'checkbox' ? target.checked : target.value;
    const { name } = target;
    this.setState({
    [name]: value,
    });
    };
    validateEmail(e) {
    const emailRex
    =/^[^<>()[\]\.\,\;\s@"]+(\.[^<>()[\]\.\,\;\s@"]+)*|("\.+"))@((\[[0-
    9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\)|((([a-zA-Z\-0-9]+\.)+[a-zA-
    Z]{2,}))$)/;
    const { validate } = this.state;
    if (emailRex.test(e.target.value)) {
    validate.emailState = 'has-success';
    } else {
    validate.emailState = 'has-danger';
    }
    this.setState({ validate });
    }
    submitForm(e) {
    e.preventDefault();
    alert(`Thank You for Registering. You'll now be redirected to the site!`);
    console.log(`Email: ${this.state.email}`);
    window.location = "https://www.netflix.com/in/";
    }
    render() {
    const { email, password } = this.state;
    return (
    <div className="App">
    <h1 style={{color: "red"}}><b><center>NETFLIX</center></b></h1>
    <h2><b><center>Binge watch your favourites!</center></b></h2><hr></hr>
    <h3><center><u>Registration Form</u></center></h3>
    <Form className="form" onSubmit={(e) => this.submitForm(e)}>
    <FormGroup>
    <Label>Full Name</Label>
    <Input
    type='text'
    name='fname'
    placeholder='~Enter your name~'
    />
    </FormGroup>
    <FormGroup>
    <Label>E-mail address</Label>
    <Input
    type="email"
    name="email"
    id="exampleEmail"

```

```
placeholder="example@example.com"
valid={this.state.validate.emailState === "has-success"}
invalid={this.state.validate.emailState === "has-danger"}
value={email}
onChange={(e) => {
  this.validateEmail(e);
  this.handleChange(e);
}}
/>
<FormFeedback>
Please input a correct email.
</FormFeedback>
<FormFeedback valid>
Verified!.
</FormFeedback>
</FormGroup>
<FormGroup>
<Label for="examplePassword">Password</Label>
<Input
  type="password"
  name="password"
  id="examplePassword"
  placeholder="*****"
  value={password}
  onChange={(e) => this.handleChange(e)}
/>
</FormGroup>
<FormGroup>
<Label>Date of Birth</Label>
<Input
  type='date'
  name='date'
  placeholder='DD-MM-YYYY'
/>
</FormGroup>
<FormGroup>
<Label>Gender</Label>
<Input
  type='text'
  name='Gender'
  placeholder='Enter your gender here'
/>
</FormGroup>
<FormGroup>
<Label>Phone Number</Label>
<Input
  type='number'
  name='number'
  placeholder='Enter your phone number'
```

```
    />
  </FormGroup>
  <FormGroup>
    <Label>Country</Label>
    <Input
      type='text'
      name='country'
      placeholder='Enter your country'
    />
  </FormGroup>
  <FormGroup>
    <Label>Language</Label>
    <Input
      type='text'
      name='language'
      placeholder='Enter your preferred language'
    />
  </FormGroup>
  <br/>
  <div class="text-center">
    <Button style={{background: "red"}} className="btn btn-info btn-lg"
      onClick={e => this.submitForm(e)}>Submit</Button>
  </div>
</Form>
</div>
);
}
}
export default App;
```

### ***App.css***

```
body {
  background: url('netflix.jpg');
  background-repeat: no-repeat;
  background-size: cover;
}

.App {
  border: 4px solid white;
  border-radius: .5em;
  margin-bottom: 1em;
  margin-left: auto;
  margin-right: auto;
  margin-top: 100px;
  padding: 1em;
  text-align: left;
  width: 600px;
  font-family: 'Sofia';
```

```
    color: aliceblue;
    font-size: 180%;

}

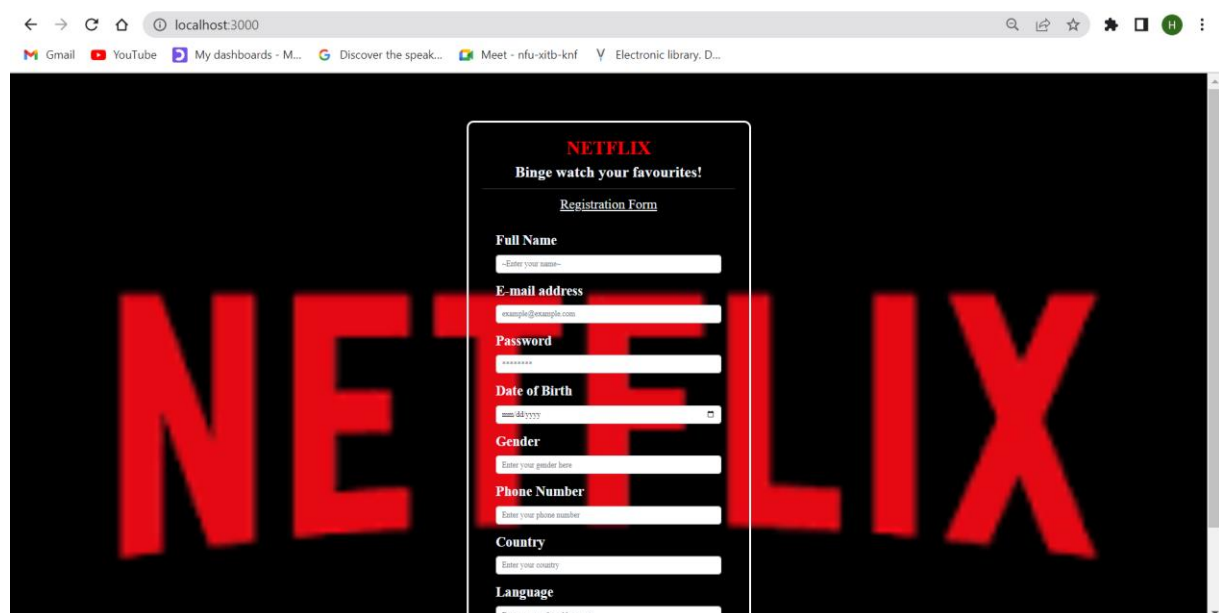
.form {
  padding: 1em;
}

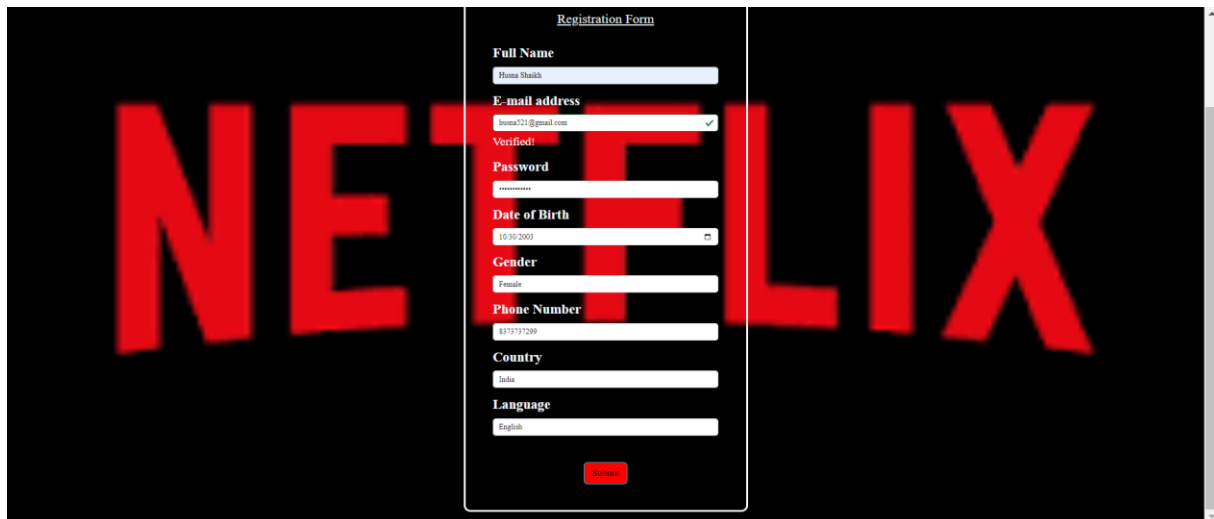
label {
  font-weight: 600;
}
```

### *index.js*

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App from './App';
import reportWebVitals from './reportWebVitals';
import 'bootstrap/dist/css/bootstrap.min.css';
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>
);
reportWebVitals();
```

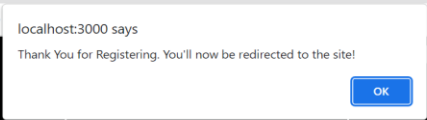
### Output:





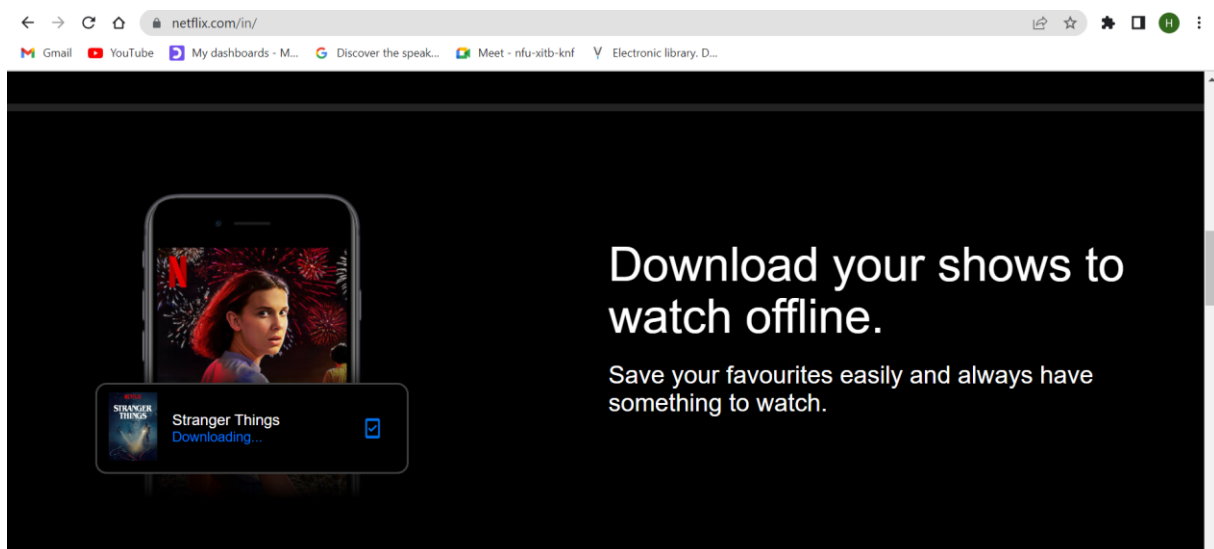
The image shows a registration form for Netflix. The form is titled "Registration Form" and is set against a background with the word "NETFLIX" in large red letters. The form fields are: Full Name (Husna Shaikh), E-mail address (husna721@gmail.com, marked as Verified!), Password (masked), Date of Birth (10/30/2003), Gender (Female), Phone Number (837873299), Country (India), and Language (English). A red "Submit" button is at the bottom.

If e-mail is missing any special character, it will show an alert.



The image shows the same registration form as before, but with an alert dialog box open. The alert box has a title "localhost:3000 says" and a message "Thank You for Registering. You'll now be redirected to the site!". There is an "OK" button in the bottom right corner of the alert box.

After clicking on Submit, it will redirect us. After clicking on OK, website page will open.



**Source Code:****UI NavBar.js**

```
import React from 'react'
import AppBar from '@material-ui/core/AppBar'
import Toolbar from '@material-ui/core/Toolbar'
import Typography from '@material-ui/core/Typography'
import { makeStyles } from '@material-ui/core/styles';
const useStyles = makeStyles({
  appBarStyle: {
    backgroundColor: 'mediumslateblue',
    fontStyle: 'italic',
    textAlign: 'center',
    paddingLeft: '550px',
  },
  typographyStyle: {
    color: '#ffffff',
  },
});
const NavBar = () => {
  const classes = useStyles();
  return(
    <div>
      <AppBar position="static" className={classes.appBarStyle}>
        <Toolbar>
          <Typography
            variant="h5" color="inherit" align="center" justify="center"
            className={classes.typographyStyle}>Material-UI Sample Application
          </Typography>
        </Toolbar>
      </AppBar>
    </div>
  )
}
export default NavBar;
```

**App.js**

```
import React, { useState } from "react";
import Grid from "@material-ui/core/Grid";
import TextField from "@material-ui/core/TextField";
import FormControlLabel from "@material-ui/core/FormControlLabel";
import FormControl from "@material-ui/core/FormControl";
import FormLabel from "@material-ui/core/FormLabel";
import RadioGroup from "@material-ui/core/RadioGroup";
import Radio from "@material-ui/core/Radio";
import Select from "@material-ui/core/Select";
import MenuItem from "@material-ui/core/MenuItem";
import Slider from "@material-ui/core/Slider";
```



```
import Button from "@material-ui/core/Button";
import { InputLabel } from "@material-ui/core";
import './App.css';
const defaultValues = {
  name: "",
  age: 0,
  gender: "",
  bird: "",
  number: 1,
};
const Components = () => {
  const [formValues, setFormValues] = useState(defaultValues);
  const handleInputChange = (e) => {
    const { name, value } = e.target;
    setFormValues({
      ...formValues,
      [name]: value,
    });
  };

  const handleSliderChange = (name) => (e, value) => {
    setFormValues({
      ...formValues,
      [name]: value,
    });
  };

  const handleSubmit = (event) => {
    event.preventDefault();
    console.log(formValues);
    var value = JSON.stringify(formValues);
    alert("Your Entered Value is : " + value);
  };

  return (
    <form onSubmit={handleSubmit} className="mainform">
      <Grid container alignItems="center" justify="center" direction="column"
        className="grid" >
        <Grid item className="grid-item">
          <FormLabel style={{ color: '#000000' }}>Name</FormLabel>
          <TextField
            id="name-input"
            name="name"
            label="Name"
            type="text"
            value={formValues.name}
            onChange={handleInputChange}
            variant="outlined"
            fullWidth
          />
        </Grid item>
      </Grid>
    </form>
  );
};
```

```
</Grid>
<hr/>
<Grid item className="grid-item">
  <FormLabel style={{ color: '#000000' }}>Age</FormLabel>
  <TextField
    id="age-input"
    name="age"
    label="Age"
    type="number"
    fullWidth
    variant="outlined"
    value={formValues.age}
    onChange={handleInputChange}
  />
</Grid>
<hr/>
<Grid item className="grid-item">
  <FormControl>
    <FormLabel style={{ color: '#000000' }}>Gender</FormLabel>
    <RadioGroup
      name="gender"
      value={formValues.gender}
      onChange={handleInputChange}
      row>
      <FormControllabel
        key="male"
        value="male"
        control={<Radio size="small" />}
        label="Male"
      />
      <FormControllabel
        key="female"
        value="female"
        control={<Radio size="small" />}
        label="Female"
      />
    </RadioGroup>
  </FormControl>
</Grid>
<hr/>
<Grid item className="grid-item">
  <FormLabel style={{ color: '#000000' }}> Select your Favourite Bird
</FormLabel>
  <FormControl fullWidth >
    <InputLabel id="demo-simple-select-label">Bird</InputLabel>
    <Select
      labelId="demo-simple-select-label"
      name="bird"
      label="Bird"
    />
  </FormControl>
</Grid>
```

```
value={formValues.os}
onChange={handleInputChange}
>
<MenuItem key="Flamingo" value="Flamingo">Flamingo</MenuItem>
<MenuItem key="Peacock" value="Peacock">Peacock</MenuItem>
<MenuItem key="Dove" value="Dove">Dove</MenuItem>
<MenuItem key="Falcon" value="Falcon">Falcon</MenuItem>
<MenuItem key="Kingfisher" value="Kingfisher">Kingfisher</MenuItem>
</Select>
</FormControl>
</Grid>
<hr/>
<Grid item className="grid-item">
<div style={{ width: "400px" }}>
<FormLabel style={{ color: '#000000' }}>Choose your Favourite
Number.</FormLabel>
<Slider
value={formValues.number}
onChange={handleSliderChange("number")}
defaultValue={1}
step={1}
min={1}
max={10}
marks={[
{
value: 1,
label: "1",
},
{
value: 2,
label: "2",
},
{
value: 3,
label: "3",
},
{
value: 4,
label: "4",
},
{
value: 5,
label: "5",
},
{
value: 6,
label: "6",
```

```
    },  
  
    {  
      value: 7,  
      label: "7",  
    },  
  
    {  
      value: 8,  
      label: "8",  
    },  
  
    {  
      value: 9,  
      label: "9",  
    },  
  
    {  
      value: 10,  
      label: "10",  
    },  
  ]}  
  valueLabelDisplay="off"  
/>  
</div>  
</Grid><hr/>  
<Button variant="contained" color="secondary"  
type="submit">Submit</Button>  
</Grid>  
</form>  
);  
};  
export default Components;
```

### ***App.css***

```
body {  
  background-color: midnightblue;  
}  
.mainform {  
  border: 2px solid black;  
  border-radius: .5em;  
  margin-left: 30em;  
  margin-right: 30em;  
  padding: 1em;  
  background: url('cover.jpg');  
  background-repeat: no-repeat;  
  background-size: cover;  
}
```

***index.js***

```
import React from 'react';
import ReactDOM from 'react-dom';
import './index.css';
import Components from './App';
import NavBar from './NavBar';
ReactDOM.render(
  <React.StrictMode>
    <NavBar />
    <br/>
    <Components />
  </React.StrictMode>,
  document.getElementById('root')
);
```

**Output:**

The screenshot displays a web application titled "Material-UI Sample Application" running on a dark blue background. The application features a light yellow form with the following elements:

- Name:** A text input field containing "Husna Shaikh".
- Age:** A text input field containing "19".
- Gender:** Radio buttons for "Male" and "Female", with "Female" selected.
- Select your Favourite Bird:** A dropdown menu with options: Flamingo, Peacock, Dove, Falcon, and Kingfisher. "Flamingo" is selected.
- Choose your Favourite Number:** A slider ranging from 1 to 10, with the value set to 6.
- SUBMIT:** A red button at the bottom of the form.

A modal dialog box is open, displaying the message: "Your Entered Value is : {\"name\":\"Husna Shaikh\",\"age\":\"19\",\"gender\":\"female\",\"bird\":\"Flamingo\",\"number\":6}". The dialog has an "OK" button.

**Conclusion:**

From this experiment we understand that React is a very powerful JavaScript Library and is used at a large scale. We have learned how to implement Reactstrap features along with HTML, CSS & JavaScript to create a form and validate its different fields such as name, number, email, etc. We also learned how to create responsive UI using Material-UI.