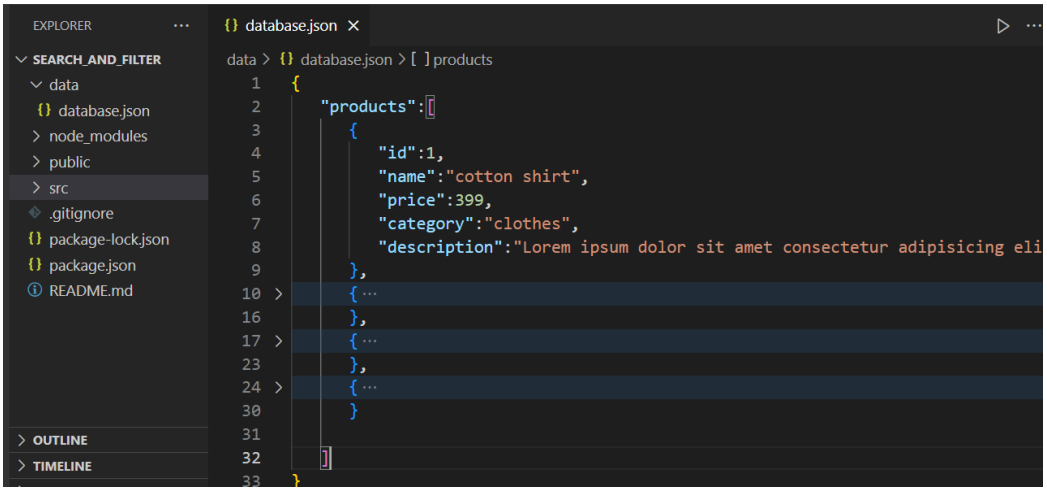
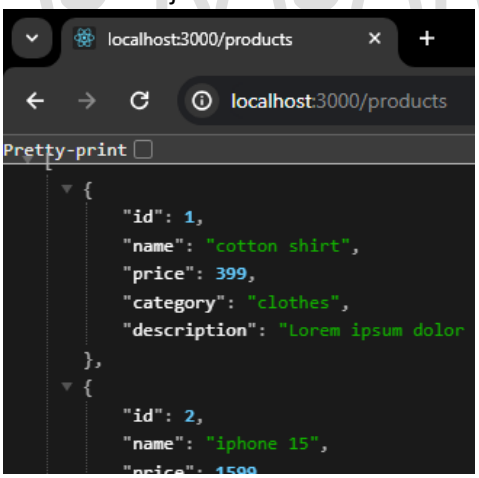
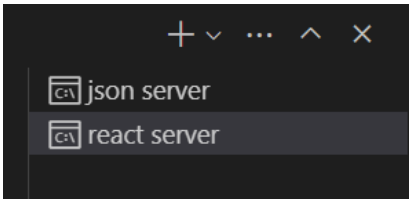
1. >npx create-react-app search_and_filter
2. Working with json server
    a. Create data folder (at project level)
    b. Create database.json file in it and add 5-8 prodcuts with category – clothes,mobile and tv



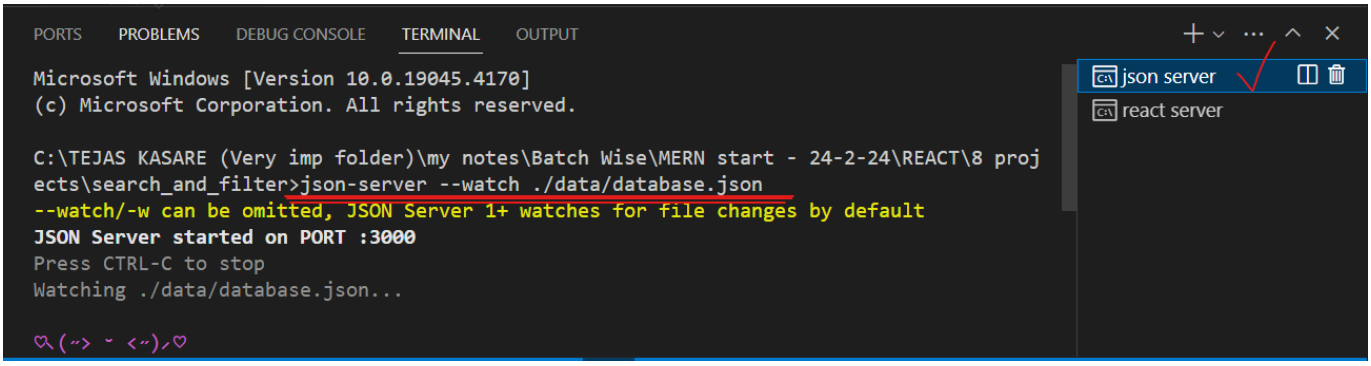
    c. Install json server
        i. >npm i –g json-server
    d. Start json server
        i. Open cmd at project location
        ii. >json-server - -watch ./data/database.json
        …8 projects\search_and_filter>json-server --watch ./data/database.json
    e. Check for our json file in the browser



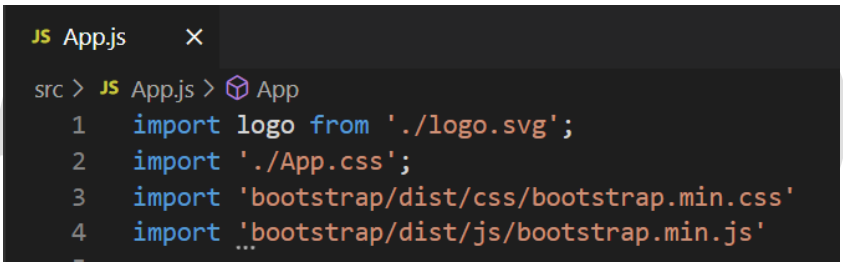
3. Creating 2 terminals



Start json server in json-server terminal



4. Adding bootstrap to project
    a. Open cmd at project location
    b. >npm i bootstrap@5.3.3
    c. Import bootstrap's css and js in App.js



5. Displaying data into component

Let our project structure will be

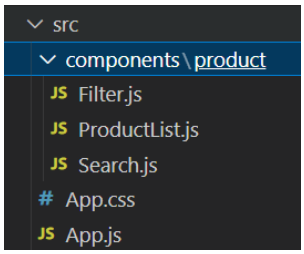
<App/>

<Filter/>

<Search/>

<ProductList/>

    a. Create components folder in project level
        i. components > product > Filter.js, ProductList.js, Search.js



b. initial code for above files :

Search.js

```
src > components > product > JS Search.js > ...
1   import React from 'react'
2
3   export default function Search() {
4     return (
5       <>
6         <h1>Search</h1>
7       </>
8     )
9   }
10
```

Filter.js

```
src > components > product > JS Filter.js > ...
1   import React from 'react'
2
3   export default function Filter() {
4     return (
5       <>
6         <h1>Filter</h1>
7       </>
8     )
9   }
```

ProductList.js

```
src > components > product > JS ProductList.js > ...
1   import React from 'react'
2   export default function ProductList() {
3     return (
4       <>
5         <h1>ProductList</h1>
6       </>
7     )
8   }
```

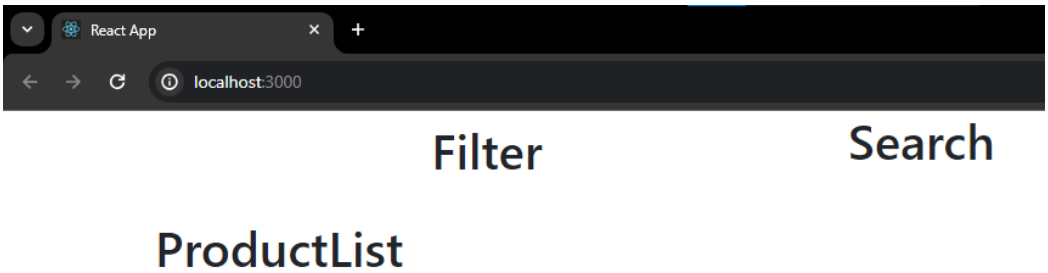
```
import './App.css';
import 'bootstrap/dist/css/bootstrap.min.css'
import 'bootstrap/dist/js/bootstrap.min.js'
import Filter from './components/product/Filter';
import Search from './components/product/Search';
import ProductList from './components/product/ProductList';

function App() {

  return (
    <>
     <div className='container'>
        <div className="row">
            <div className="col-lg-6 p-2 text-center ">
              <Filter/>
            </div>
            <div className="col-lg-6 ">
              <Search/>
            </div>
        </div>
        <div className="row mt-3">
            <div className="col">
              <ProductList/>
            </div>
        </div>
     </div>
    </>
  );
}
export default App;
```

OUTPUT :

>npm start



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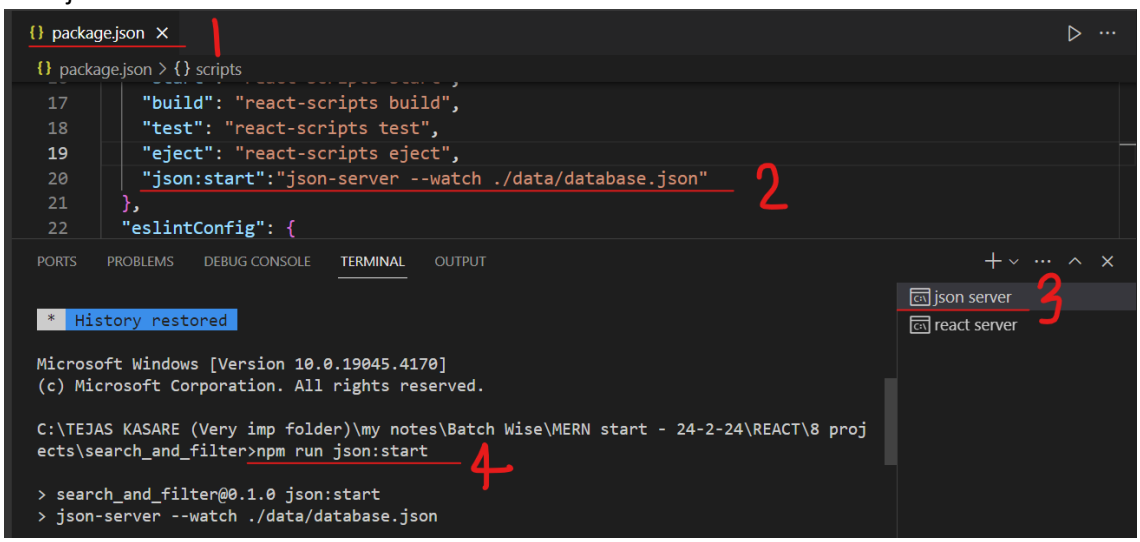
c. fetching data from api and displaying

i. stop react server (bcoz, it is using 3000 port which is required for json server)

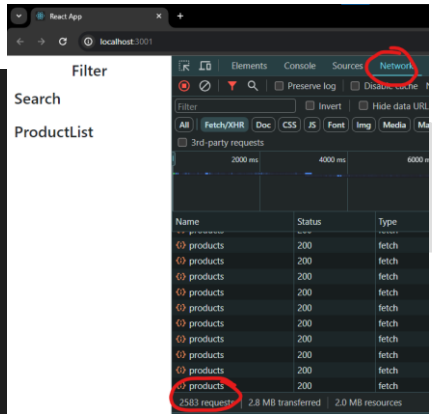
ii. start json server



iii. start react server >npm start

iv. fetch data into App.js and pass it to ProductList.js to display

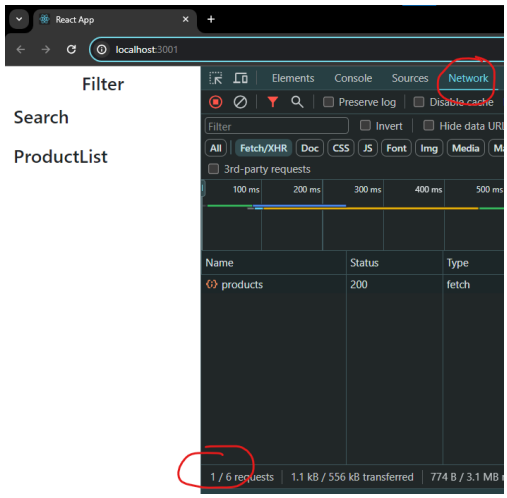
```
function App() {
  let [products, setProducts]=useState([])
  console.log(products);
  fetch("http://localhost:3000/products")
      .then(res => res.json()
                    // .then(data=>console.log(data))
                    .then(data=>setProducts(data))
                    .catch())
      .catch()
  return (
```



This will cause infinite API call because of re rendering

Solution : useEffect() to handle side effect

```
function App() {
  let [products, setProducts]=useState([])
  console.log(products);

   useEffect(()=>{
      fetch("http://localhost:3000/products")
      .then(res => res.json()
                    // .then(data=>console.log(data))
                    .then(data=>setProducts(data))
                    .catch())
      .catch()
    },[])

  return (
```



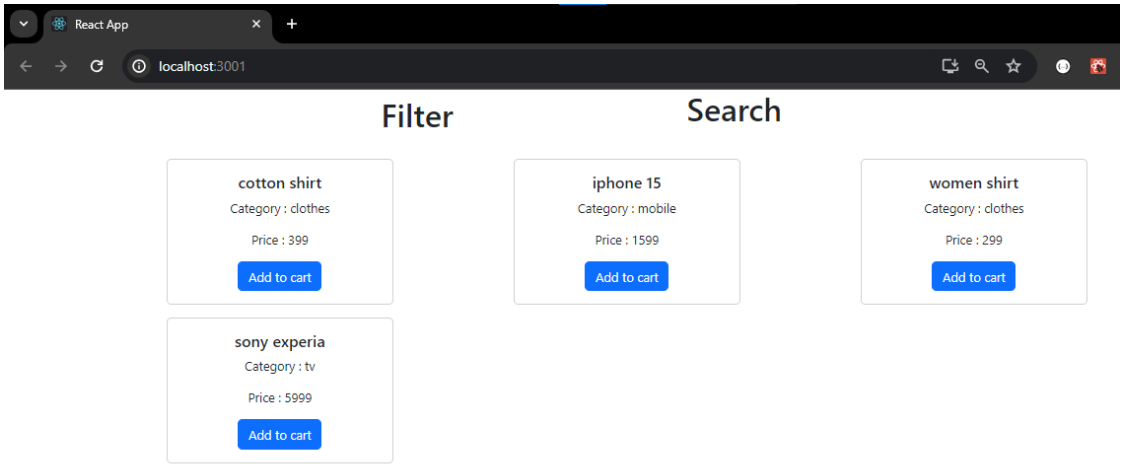
v. pass this fetched products to ProductList.js and display

```
App.js
src > App.js > ...
33              </div>
34              <div className="row mt-3">
35                  <div className="col">
36                    <ProductList products={products}/>
37                  </div>
38              </div>
39            </div>
40          </>
```

Code for ProductList.js

```
import React from 'react'

export default function ProductList(props) {
  return (
    <>
    <div className="row">
    {props.products.map(product =>
      <div className="col-lg-4 mb-3">
              <div className="card text-center" style={{width: "18rem"}}>
                <div className="card-body">
                    <h5 className="card-title">{product.name}</h5>
                    <p className="card-text">Category : {product.category}</p>
                    <p className="card-text">Price : {product.price}</p>
                    <a href="#" className="btn btn-primary">Add to cart</a>
                </div>
              </div>
              </div>
            )}
    </div>
    </>
  )
      }
```

Output :



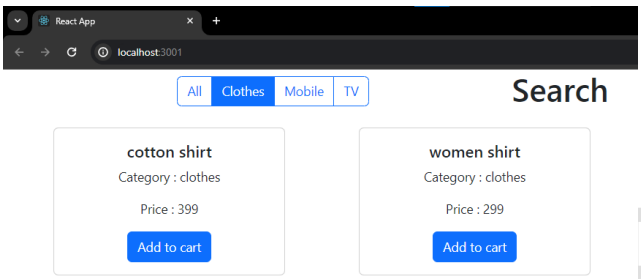
6. Filtration Logic
    a. Update App.js as :

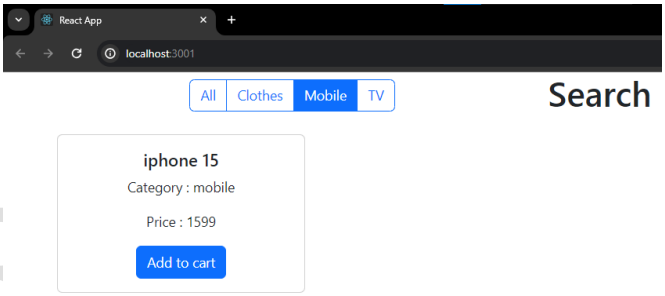
```
import './App.css';
import 'bootstrap/dist/css/bootstrap.min.css'
import 'bootstrap/dist/js/bootstrap.min.js'
import Filter from './components/product/Filter';
import Search from './components/product/Search';
import ProductList from './components/product/ProductList';
import { useEffect, useState } from 'react';

function App() {
  let [products, setProducts]=useState([])
  let [url, setsetUrl]=useState("http://localhost:3000/products")
  console.log(products);

  useEffect(()=>{
      fetch(url)
      .then(res => res.json()
                        // .then(data=>console.log(data))
                        .then(data=>setProducts(data))
                        .catch())
      .catch()
  },[url])

  const changeUrl =(category) =>{
      setsetUrl("http://localhost:3000/products?category="+category)
  }

  return (
    <>
     <div className='container'>
        <div className="row">
            <div className="col-lg-6 p-2 text-center">
              <Filter onChageUrl={changeUrl}/>
            </div>
            <div className="col-lg-6 p-2">
              <Search/>
            </div>
        </div>
        <div className="row mt-3">
            <div className="col">
              <ProductList products={products}/>
            </div>
        </div>
     </div>
    </>
  );
}

export default App;
```

b. Add radio group buttons in Filter.js and add following code

```
import React from 'react'

export default function Filter(props) {
  return (
    <div>
      <div className="btn-group" role="group" aria-label="Basic radio toggle button group">
        <input type="radio" className="btn-check" name="btnradio" id="btnradio1"  />
        <label className="btn btn-outline-primary" htmlFor="btnradio1" onClick={()=>{props.onChageUrl("")}}>All</label>

        <input type="radio" className="btn-check" name="btnradio" id="btnradio2" />
        <label className="btn btn-outline-primary" htmlFor="btnradio2" onClick={()=>{props.onChageUrl("clothes")}}>Clothes</label>

        <input type="radio" className="btn-check" name="btnradio" id="btnradio3"/>
        <label className="btn btn-outline-primary" htmlFor="btnradio3" onClick={()=>{props.onChageUrl("mobile")}}>Mobile</label>

        <input type="radio" className="btn-check" name="btnradio" id="btnradio4"/>
        <label className="btn btn-outline-primary" htmlFor="btnradio4" onClick={()=>{props.onChageUrl("tv")}}>TV</label>
      </div>
    </div>
  )
}
```

Output :





7. Implementing search functionality
    a. Create function to filter products based on product name

App.js

src > App.js > App

```
26    const changeUrl =(category) =>{
27        setsetUrl("http://localhost:3000/products?category="+category)
28    }
29
30    //searching logic
31  const searchProduct = (productName) =>
32  {
33
34      let searchedProducts = products.filter(product =>
35                                             product.name.toLowerCase()
36                                             .includes(productName.toLowerCase())
37                                            )
38      setProducts(searchedProducts)
39  }
40
```

    b. Pass this function to Search component as in prop

App.js

src > App.js > App

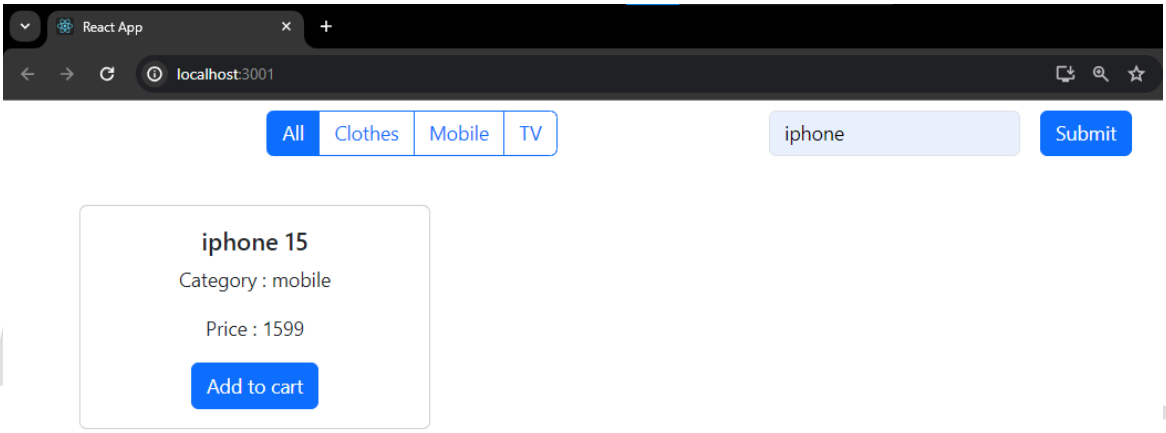
```
42      return (
43        <>
44        <div className='container'>
45          <div className="row">
46            <div className="col-lg-6 p-2 text-center">
47              <Filter onChageUrl={changeUrl}/>
48            </div>
49            <div className="col-lg-6 p-2">
50              <Search onSearch={searchProduct}/>
51            </div>
52          </div>
```

    c. Collect above function refenernce in Search compoenet and call the function from prop

```
import React, { useState } from 'react'

export default function Search(props) {
  let [productName, setProdcutName] = useState('')

  const submitForm = (event) =>{
    event.preventDefault()
    props.onSearch(productName)
  }

  const changeProductName = (event)=>
  {
    setProdcutName(event.target.value)
  }
  return (
```

```
    <>
      <form className="row g-3" onSubmit={submitForm}>
        <div className="col-auto">
          <input type="text" className="form-control" id="product_name" placeholder="Product
name"
          onChange={changeProductName}/>
        </div>
        <div className="col-auto">
          <input type="submit" className="btn btn-primary mb-3"/>
        </div>
      </form>
    </>
  )
}
```

d. Output



e.