

```

import "./App.css";
// importing components from react-router-dom package
import { BrowserRouter, Routes, Route, Navigate } from "react-router-dom";

// import Home component
import Navbar from "./components/navbar";
import Fib from "./Fibonacci";
import Factorial from "./Factorial";
import Sum from "./Sum";
import Coins from "./Coins";

function App() {
  return (
    <BrowserRouter>
      <Navbar />
      <div className="container mt-2" style={{ marginTop:
40 }}>
        <Routes>
          <Route path="/" element={<Fib />}></Route>
          <Route path="/factorial"
element={<Factorial />}></Route>
          <Route path="/sum" element={<Sum
/>}></Route>
          <Route path="/coins" element={<Coins
/>}></Route>
        </Routes>
      </div>
    </BrowserRouter>
  );
}

export default App;

```

## navbar.js

```
import React, { useState } from "react";
import { NavLink, withRouter } from "react-router-dom";

const Navbar = () => {
  const [isOpen, setOpen] = useState(false);

  return (
    <nav
      className="navbar is-primary"
      role="navigation"
      aria-label="main navigation"
    >
      <div className="">
        <div className={`navbar-menu ${isOpen} && "is-active"}`>
          <div className="navbar-start">
            <NavLink
              className="navbar-item"
              activeClassName="is-active"
              to="/"
              exact
            >
              Fibonacci
            </NavLink>
            <NavLink
              className="navbar-item"
              activeClassName="is-active"
              to="/factorial"
              exact
            >
              Factorial
            </NavLink>
            <NavLink
              className="navbar-item"

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        activeClassName="is-active"
        to="/sum"
        exact
      >
        Sum of Integers
      </NavLink>
      <NavLink
        className="navbar-item"
        activeClassName="is-active"
        to="/coins"
        exact
      >
        US Coins
      </NavLink>
    </div>
  </div>
</div>
</nav>
);
};

export default Navbar;

```

## Fibonacci.js

```

import React from "react";

import { Link } from "react-router-dom";

import "./App.css";
import "materialize-css/dist/css/materialize.min.css";
import "materialize-css/dist/js/materialize.min.js";
import { Button, TextInput } from "react-materialize";
import { useState, useEffect } from "react";

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// Compute the ith Fibonacci number (1, 1, 2, 3, 5, 8, 13, 21, 34...)

const Fib = () => {
  const [fibNum, setFib] = useState(0);
  const [fibReal, setReal] = useState(0);

  function handleClick() {
    setFib(Number(document.getElementById("fibNum").value))
  };

  useEffect(() => {
    console.log(fibNum);
    setReal(find_fibonacci_sequence(fibNum));
  }, [fibNum]);

  function find_fibonacci_sequence(n) {
    if (n < 0) {
      alert(
        "We cannot find the fibonacci value of a number less than 0."
      );
      setFib(0);
      console.log(fibNum);
      document.getElementById("fibNum").value = 0;
      return 0;
    }
    if (n == 0 || n == 1) {
      return n;
    } else {
      return (
        find_fibonacci_sequence(n - 1) +
        find_fibonacci_sequence(n - 2)
      );
    }
  }
}

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    }
  }

  return (
    <div className="App">
      <div className="Content">
        <TextInput
          id="fibNum"
          label="Enter the ith value of the Fibonacci
sequence you want"
          type="number"
        />
        <div id="fibDisplay">
          <span className="emphasized">Position
requested:</span>
          {fibNum}
        </div>
        <div id="fibReal">
          <span className="emphasized">Fibonacci
Value:</span>
          {fibReal}
        </div>
        <Button onClick={handleClick}>Find Fibonacci
Number</Button>
      </div>
    </div>
  );
};

export default Fib;

```

## Factorial.js

```
import React from "react";
```

```

import "./App.css";
import "materialize-css/dist/css/materialize.min.css";
import "materialize-css/dist/js/materialize.min.js";
import { Button, TextInput } from "react-materialize";
import { useState } from "react";

// Compute n! (factorial) for integer  $n \geq 0$ 

const Factorial = () => {
  const [factNum, setFact] = useState(0);
  const [factReal, setFReal] = useState(0);
  function handleClick() {
    const factnum =
document.getElementById("factNum").value;
    const factreal = find_factorial(factnum);
    setFact(Number(factnum));
    setFReal(Number(factreal));
  }

  function find_factorial(n) {
    if (n === 0) {
      return 1;
    }
    if (n < 0) {
      alert("We cannot do a factorial of below 0.");
      setFact(0);
      document.getElementById("factNum").value = 0;
      return 0;
    } else {
      let total = 1;
      for (let iCount = n; iCount >= 1; iCount = iCount -
1) {
        total = total * iCount;
      }
      return total;
    }
  }
}

```

```

    }

    return (
      <div className="App">
        <div className="Content">
          <TextInput
            id="factNum"
            label="Enter an integer to find the
factorial of!"
            type="number"
          />
          <div id="factDisplay">
            <span className="emphasized">
              Factorial Requested for the number:
            </span>
            {factNum}
          </div>
          <div id="factReal">
            <span className="emphasized">Desired
Factorial Value:</span>
            {factReal}
          </div>
          <Button onClick={handleClick}>Find
Factorial</Button>
        </div>
      </div>
    );
  };

export default Factorial;

```

## Sum.js

```
import "./App.css";
import "materialize-css/dist/css/materialize.min.css";
import "materialize-css/dist/js/materialize.min.js";
import { Button, Col, Row, TextInput } from "react-
materialize";
import React, { useEffect, useMemo, useState } from "react";

// Compute the sum of all integers between two given integers
(inclusive)

const Sum = () => {
  const [Int1, setInt1] = useState(0);
  const [Int2, setInt2] = useState(0);
  const [TotalSum, setSum] = useState(0);
  function handleClick() {
    setInt1(parseInt(document.getElementById("int1").value)
);
    setInt2(parseInt(document.getElementById("int2").value)
);
  }

  useEffect(() => {
    console.log(Int1);
    console.log(Int2);
    find_sum(Int1, Int2);
  }, [Int1, Int2]);

  function find_sum(a, b) {
    let totalsum = 0;

    if (b < a) {
      alert(
        "The second integer must be greater than or
equal to the first number"
      );
    }
  }
}
```



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        setInt1(0);
        setInt2(0);
        document.getElementById("int1").value = 0;
        document.getElementById("int2").value = 0;
        setSum(0);
    } else {
        for (let first = a; first <= b; first = first + 1)
        {
            totalsum = totalsum + first;
        }
        setSum(totalsum);
    }
}

return (
    <div className="App">

        <div className="Content">
            <div className="row">
                <TextInput
                    className=""
                    id="int1"
                    placeholder="Lower Integer"
                    type="number"
                />
                <TextInput
                    id="int2"
                    className=""
                    placeholder="Higher Integer"
                    type="number"
                />
            </div>

            <div id="factDisplay">
                <span className="emphasized">

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                                Sum Requested Between the Two Values
of:
                                </span>
                                {Int1} and {Int2}
                                </div>
                                <div id="factReal">
                                    <span className="emphasized">Sum: </span>
                                    {TotalSum}
                                </div>
                                <Button onClick={handleClick}>Find Sum</Button>
                            </div>
                        </div>
                    );
                };

export default Sum;

```

## Coins.js

```

import React, { useEffect } from "react";

import "./App.css";
import "materialize-css/dist/css/materialize.min.css";
import "materialize-css/dist/js/materialize.min.js";
import { Button, TextInput } from "react-materialize";
import { useState } from "react";

// Given a number of cents, print to the browser console
//the corresponding U.S. coins that total to the given number.
//Print the solution that needs the fewest coins.
//Only use pennies, nickels, dimes, and quarters.
//Example: for 113, the answer is "4 quarters", "1 dime", "3
pennies".

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//Do not print the case where the solution calls for 0 of the
coin
//(e.g. don't print "0 nickels").
//Use the singular word if the value is 1,
//or the plural if the coin count is greater than 1.

const Coins = () => {
  const [coins, setCoins] = useState(0);
  function handleClick() {
    setCoins(parseInt(document.getElementById("cents").value));
  }

  useEffect(() => {
    find_coins(coins);
  }, [coins]);

  function find_coins(cents) {
    if (cents < 0) {
      alert(
        "Sorry, we can only calculate coins for
integers greater than 0!"
      );
      setCoins(0);
      document.getElementById("cents").value = 0;
      console.clear();
    } else {
      let coins = [25, 10, 5, 1];
      let coinNames = ["quarter", "dime", "nickel",
"penny"];
      let coinPhrase = [];
      console.log("These are the counts for " + cents + "
cents.");
      let coinCount = [];
      for (let i = 0; i < coins.length; i = i + 1) {
        coinCount[i] = Math.floor(cents / coins[i]);
      }
    }
  }
}

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        if (coinCount[i] == 0) {
            coinPhrase[i] = "";
        } else if (coinCount[i] == 1) {
            coinPhrase[i] = "1 " + coinNames[i];
        } else if (coinCount[i] > 1 && coinNames[i] ==
"penny") {
            coinPhrase[i] = coinCount[i] + " pennies";
        } else if (coinCount[i] > 1) {
            coinPhrase[i] = coinCount[i] + " " +
coinNames[i] + "s";
        }
        cents = cents % coins[i];
    }

    for (let i = 0; i < coinPhrase.length; i = i + 1) {
        if (coinPhrase[i] != "") {
            console.log(coinPhrase[i]);
        }
    }
}

return (
    <div className="App">
        <div className="Content">
            <TextInput
                id="cents"
                label="Enter how many cents"
                type="number"
            />
            <div id="centDisplay">
                <span className="emphasized">
                    Number of Cents to Convert:
                </span>
                {coins}
            </div>

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        <div id="factReal">
            <span className="emphasized showcoins">
                See the Coin Count in the Console!
            </span>
        </div>
        <Button onClick={handleClick}>Find Number of
Coins</Button>
    </div>
</div>
);
};

export default Coins;

```

## App.css

```

.navbar {
    text-align: center;
    min-height: 5.5rem;
    padding-top: 1rem;
    background-color: cadetblue;
    color: white;
    font-weight: 300;
    font-size: 14pt;
}

.navbar-item {
    margin: 1rem;
}

.navbar-item:hover {
    text-decoration: underline 2px white;
}

.Content {
    padding: 2rem;
}

```

```
}  
  
.emphasized {  
  font-weight: bold;  
}  
  
.Content div {  
  padding-bottom: 1rem;  
}  
  
.Content div span {  
  margin-right: 0.25rem;  
}  
  
.showcoins {  
  font-size: 24px;  
}
```