

## Question 1

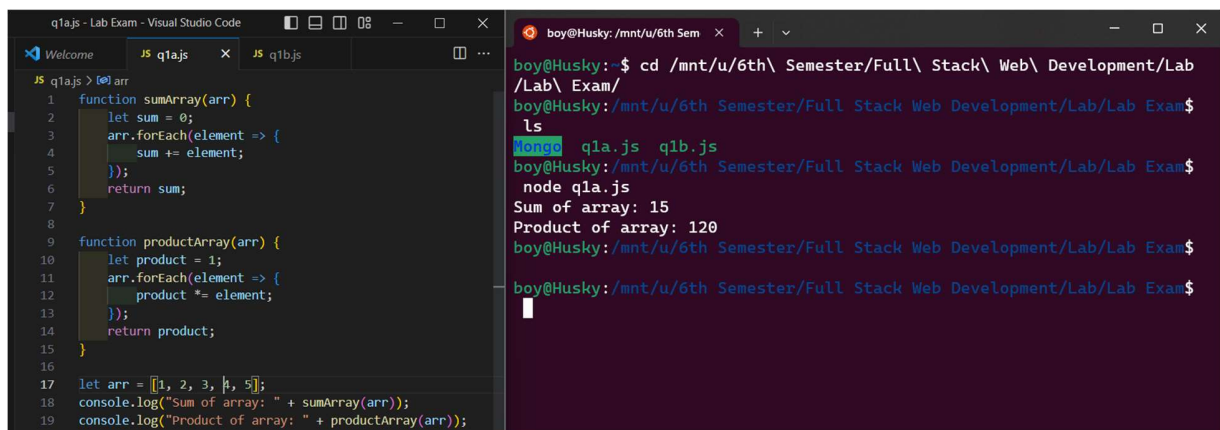
### Part A

```
function sumArray(arr) {
    let sum = 0;
    arr.forEach(element => {
        sum += element;
    });
    return sum;
}

function productArray(arr) {
    let product = 1;
    arr.forEach(element => {
        product *= element;
    });
    return product;
}

let arr = [1, 2, 3, 4, 5];
console.log("Sum of array: " + sumArray(arr));
console.log("Product of array: " + productArray(arr));
```

Output:



The screenshot shows a Visual Studio Code editor with a file named `q1a.js` containing the JavaScript code from the previous block. The code defines two functions, `sumArray` and `productArray`, and then uses them to calculate the sum and product of the array `[1, 2, 3, 4, 5]`. The terminal output on the right shows the execution of the code, displaying the sum of the array as 15 and the product as 120.

```
boy@Husky: /mnt/u/6th Sem  x  +  v
boy@Husky:~$ cd /mnt/u/6th\ Semester\Full\ Stack\ Web\ Development\Lab
/Lab\ Exam/
boy@Husky: /mnt/u/6th Semester/Full Stack Web Development/Lab/Lab Exam$
ls
node q1a.js q1b.js
boy@Husky: /mnt/u/6th Semester/Full Stack Web Development/Lab/Lab Exam$
node q1a.js
Sum of array: 15
Product of array: 120
boy@Husky: /mnt/u/6th Semester/Full Stack Web Development/Lab/Lab Exam$
boy@Husky: /mnt/u/6th Semester/Full Stack Web Development/Lab/Lab Exam$
```

## Part B

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

function useCounter() {
  const [count, setCount] = useState(0);
  const increment = () => setCount(count + 1);
  return [count, increment];
}

function Counter() {
  const [count, increment] = useCounter();
  return (
    <div>
      <p>Count: {count}</p>
      <button onClick={increment}>Increment</button>
    </div>
  );
}

export default Counter;
```

Part c

./src/components/NavBar.js

```
import React from 'react'
import { Link } from "react-router-dom";
import './navbar.css';
import { Navbar, Container, Nav } from 'react-bootstrap';

export default function NavBar() {
  return (
    <Navbar bg="light" expand="lg">
      <Container>
        <Navbar.Toggle aria-controls="basic-navbar-nav" />
        <Navbar.Collapse id="basic-navbar-nav">
          <Nav className="me-auto">
            <Link className='flex' to="/">Home</Link>
            <Link className='flex' to="about">About</Link>
            <Link className='flex' to="contact">Contact</Link>
          </Nav>
        </Navbar.Collapse>
      </Container>
    </Navbar>
  )
}
```

./src/pages/About.js

```
import React from 'react'

export default function About() {
  return(
    <div>
      <h1>About Page Hamza Umer 200789</h1>
    </div>)
}
```

./src/pages/Contact.js

```
import React from 'react'
```

```
import {Form, Button} from 'react-bootstrap';
import { useNavigate } from 'react-router-dom';

export default function Contact() {
  return(
    <div>
      <h1>Contact Page Hamza Umer 200789</h1>
    </div>)
}
```

./src/Home.js

```
import React, {useEffect, useState} from 'react'
import axios from 'axios';
export default function Home() {
  return (
    <div>
      <h1>Homepage Hamza Umer 200789</h1>
    </div>
  )
}
```

