Bahria University, Islamabad

Department of Software Engineering

Computer Programming Lab

(Fall-2022)

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Enrollment : 01-131232-075

Lab Journal: X

Date: 12-10-2023

Task No:	Task Wise Marks		Documentation Marks		Total Marks (20)
	Assigned	Obtained	Assigned	Obtained	
1	3				
2	3				
3	3		5		

4	3				
5	3				

Comments:

Signature

Program 2

```cpp
#include <iostream>


bool isPrime(int num) {

    if (num <= 1)

        return false;


    for (int i = 2; i <= num/2; ++i) {

        if (num % i == 0) {

            return false;

        }

    }


    return true;

}


void findPrimesInRange(int lower, int upper) {

    std::cout << "Prime numbers in the range " << lower << " to " << upper << " are:\n";
```

```cpp
    for (int i = lower; i <= upper; ++i) {

        if (isPrime(i)) {

            std::cout << i << " ";

        }

    }

}


int main() {

    int choice;


    std::cout << "Menu:\n";

    std::cout << "1. Find Prime Numbers in a Range\n";

    std::cout << "2. Check if a Number is Prime\n";

    std::cout << "Enter your choice: ";

    std::cin >> choice;


    if (choice == 1) {

        int lower, upper;


        std::cout << "Enter the lower bound of the range: ";

        std::cin >> lower;


        std::cout << "Enter the upper bound of the range: ";

        std::cin >> upper;


        findPrimesInRange(lower, upper);
```

```cpp
    } else if (choice == 2) {

        int num;


        std::cout << "Enter a number: ";

        std::cin >> num;


        if (isPrime(num)) {

            std::cout << num << " is a prime number.\n";

        } else {

            std::cout << num << " is not a prime number.\n";

        }

    } else {

        std::cout << "Invalid choice.\n";

    }


    return 0;

}
```

Screenshots

```cpp
#include <iostream>

bool isPrime(int num) {
    if (num <= 1)
        return false;

    for (int i = 2; i <= num/2; ++i) {
        if (num % i == 0) {
            return false;
        }
    }
    return true;
}
void findPrimesInRange(int lower, int upper) {
    std::cout << "Prime numbers in the range " << lower << " to " << upper << " are:

    for (int i = lower; i <= upper; ++i) {
        if (isPrime(i)) {
            std::cout << i << " ";
        }
    }
}
int main() {
    int choice;

    std::cout << "Menu:\n";
    std::cout << "1. Find Prime Numbers in a Range\n";
    std::cout << "2. Check if a Number is Prime\n";
    std::cout << "Enter your choice: ";
    std::cin >> choice;
    if (choice == 1) {
        int lower, upper;
        std::cout << "Enter the lower bound of the range: ";
        std::cin >> lower;
        std::cout << "Enter the upper bound of the range: ";
        std::cin >> upper;
        findPrimesInRange(lower, upper);
    } else if (choice == 2) {
        int num;
        std::cout << "Enter a number: ";
        std::cin >> num;
        if (isPrime(num)) {
            std::cout << num << " is a prime number.\n";
        } else {
            std::cout << num << " is not a prime number.\n";
        }
    } else {
        std::cout << "Invalid choice.\n";
    }
    return 0;
}
```

```
Menu:
1. Find Prime Numbers in a Range
2. Check if a Number is Prime
Enter your choice: 1
Enter the lower bound of the range: 2
Enter the upper bound of the range: 3
Prime numbers in the range 2 to 3 are:
2 3
```