

FUNDAMENTALS OF PROGRAMMING

ASSIGNMENT:4

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HOME ASSIGNMENT

Task 1

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    for (int c = 1; c<= 150; c++)
```

```
    {
```

```
        if (c % 10 != 0)
```

```
        {
```

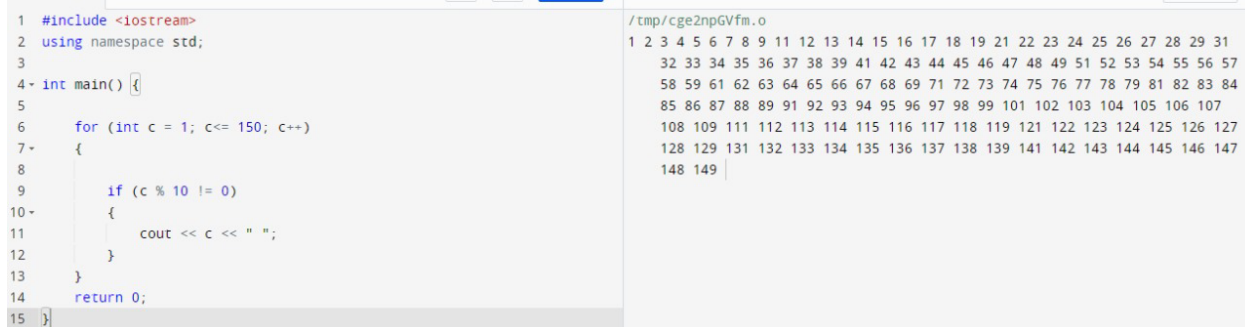
```
            cout << c << " ";
```

```
        }
```

```
    }
```

```
    return 0;
```

```
}
```



The screenshot shows a code editor with two panes. The left pane contains the C++ code from the previous blocks. The right pane shows the output of the program, which is a sequence of numbers from 1 to 149, with a space after every 10th number (10, 20, 30, etc.), resulting in 14 lines of output.

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5
6     for (int c = 1; c<= 150; c++)
7     {
8
9         if (c % 10 != 0)
10        {
11            cout << c << " ";
12        }
13    }
14    return 0;
15 }
```

```
/tmp/cge2npGVfm.o
1 2 3 4 5 6 7 8 9 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31
32 33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55 56 57
58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78 79 81 82 83 84
85 86 87 88 89 91 92 93 94 95 96 97 98 99 101 102 103 104 105 106 107
108 109 111 112 113 114 115 116 117 118 119 121 122 123 124 125 126 127
128 129 131 132 133 134 135 136 137 138 139 141 142 143 144 145 146 147
148 149
```

Task 2



Edit with WPS Office

```
#include <iostream>
using namespace std;

int main() {

    int num, sum = 0;

    cout << "Enter a number: ";
    cin >> num;

    while (num > 0) {
        int digit = num % 10;
        sum += digit;
        num /= 10;
    }

    cout << "The sum of the digits is: " << sum << endl;

    return 0;
}
```



```
main.cpp
1
2 #include <iostream>
3 using namespace std;
4
5 int main() {
6
7     int num, sum = 0;
8
9
10    cout << "Enter a number: ";
11    cin >> num;
12
13    while (num > 0) {
14        int digit = num % 10;
15        sum += digit;
16        num /= 10;
17    }
18
19    cout << "The sum of the digits is: " << sum << endl;
20
21    return 0;
22 }
```

Output

```
/tmp/NEXtALjVfb.o
Enter a number: 589
The sum of the digits is: 22
```

Task 3

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int num;
```

```
    cout << "Enter a positive integer: ";
```

```
    cin >> num;
```

```
    if (num <= 1) {
```

```
        cout << num << " is not a prime number." << endl;
```

```
    } else {
```

```
        int b;
```

```
        for (b = 2; b * b <= num; b++) {
```

```
            if (num % b == 0) {
```



```

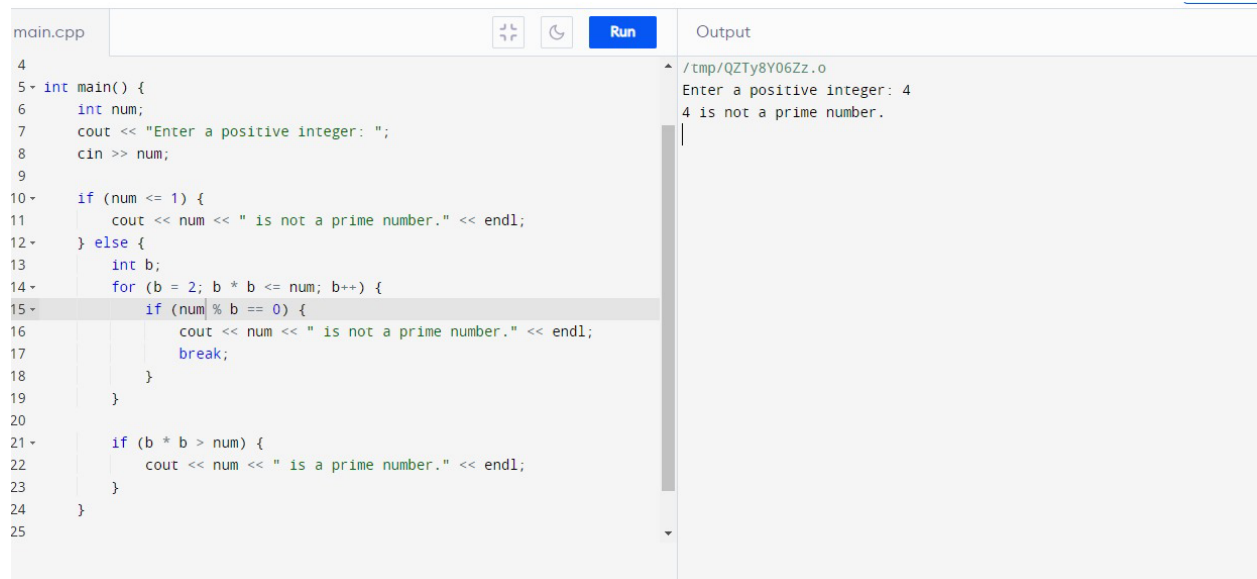
        cout << num << " is not a prime number." << endl;

        break;
    }
}

if (b * b > num) {
    cout << num << " is a prime number." << endl;
}
}

return 0;
}

```



The screenshot shows a C++ IDE with a file named `main.cpp`. The code implements a prime number checker. It prompts the user to enter a positive integer. If the input is 1 or less, it immediately states it is not a prime number. For integers greater than 1, it uses a for loop to test divisibility from 2 up to the square root of the number. If any divisor is found, it prints that the number is not prime and breaks the loop. If no divisors are found, it prints that the number is prime. The output window shows the program's execution with the input 4, resulting in the message "4 is not a prime number."

```

main.cpp
4
5 int main() {
6     int num;
7     cout << "Enter a positive integer: ";
8     cin >> num;
9
10    if (num <= 1) {
11        cout << num << " is not a prime number." << endl;
12    } else {
13        int b;
14        for (b = 2; b * b <= num; b++) {
15            if (num % b == 0) {
16                cout << num << " is not a prime number." << endl;
17                break;
18            }
19        }
20
21        if (b * b > num) {
22            cout << num << " is a prime number." << endl;
23        }
24    }
25

```

Output

```

/tmp/QZTy8Y06Zz.o
Enter a positive integer: 4
4 is not a prime number.

```

