JIMMA UNIVERSITY

JIMMA INSTITUTE OF TECHNOLOGY

Faculty of computing and informatics

Information science

Computer programming individual assignment

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Submitted to:-

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- **Exercise of chapter three**

1.Suppose x = 3 and y = 2; show the output, if any, of the following code. What is the output if x = 3 and y = 4? What is the output if x = 2 and y = 2? Draw a flowchart of the code. if (x > 2) {?
if (y > 2) {
int z = x + y;?
cout << "z is " << z << endl; }
} else
cout << "x is " << x << endl;

2.Write a program to accept any character from keyboard and display whether it is vowel or not

3.Write a program that gives grade based on the following scale using
if else statement:
> 95-> A+
85-94-> A
80-84 -> A-
75-79-> B+
70-74 -> B
65-69 -> B-
60-64 -> C+
50-59 -> C
<50 - F

4.Write a program that display greatest of three numbers using if statement accept input from user.

5.Write a program that calculates sum of numbers from 1 to 100.

6.Write a program that displays numbers between 0 -100 that are divisible by 2, 3, and 5. The numbers displayed should be those that can be divided by 2, 3, and 5 without remainder.

7.Write a program that calculates factorial using for loop, while loop and do while
loops. The program should accept the number and then perform the calculation of the factorial.

8.
Write a while loop that prints the average of numbers from 1 to 10.

- **ANSEWR**

1. If x = 3 and y = 2, the output will be "x is 3" because the first condition (x > 2) is true, but the second condition (y > 2) is false.

If x = 3 and y = 4, the output will be "z is 7" because both conditions (x > 2 and y > 2) are true, so z is assigned the value of x + y, which is 7, and then printed out.
If x = 2 and y = 2, the output will be "x is 2" because the first condition (x > 2) is false, so the else block is executed and "x is 2" is printed out.

2.

```
#include <iostream>
using namespace std;
int main() {
    char ch;
    cout << "Enter a character: ";
    cin >> ch;
    if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' ||
        ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch == 'U') {
        cout << ch << " is a vowel" << endl;
    } else {
        cout << ch << " is not a vowel" << endl;
    }
    return 0;
}
```

3.

```
#include <iostream>
using namespace std;
int main() {
    int marks;
    cout << "Enter marks obtained: ";
    cin >> marks;
    if (marks > 95) {
        cout << "Grade: A+" << endl;
    }
else if (marks >= 85 && marks <= 94) {
        cout << "Grade: A" << endl;
    }
else if (marks >= 80 && marks <= 84) {
        cout << "Grade: A-" << endl;
    }
else if (marks >= 75 && marks <= 79) {
        cout << "Grade: B+" << endl;
    }
else if (marks >= 70 && marks <= 74) {
        cout << "Grade: B" << endl;
    }
else if (marks >= 65 && marks <= 69) {     cout << "Grade: B-" << endl;
    }
else if (marks >= 60 && marks <= 64) {
        cout << "Grade: C+" << endl;
    }
else if (marks >= 50 && marks <= 59) {
        cout << "Grade: C" << endl;
    }
else {
        cout << "Grade: F" << endl;
    }
    return 0;
}
```

4.

```
#include <iostream>
using namespace std;
int main() {
   int num1, num2, num3;
   cout << "Enter the first number: ";
   cin >> num1;
   cout << "Enter the second number: ";
   cin >> num2;
  cout << "Enter the third number: ";
   cin >> num3;
   if(num1 > num2 && num1 > num3)
      cout << "The greatest number is: " << num1;
   else if(num2 > num1 && num2 > num3)
      cout << "The greatest number is: " << num2;
   else
      cout << "The greatest number is: " << num3;
   return 0;
}
```

5.

```
#include <iostream>
#using namespace std;
int main() {
    int sum = 0;
    for (int i = 1; i <= 100; i++) {
        sum += i;
    }
cout << "The sum of numbers from 1 to
100 is: " << sum <<endl;
    return 0;
}
```

6.

```
#include <iostream>
#using namaespace std;
int main() {
    for (int i = 0; i <= 100; i++) {
        if (i % 2 == 0 && i % 3 == 0 && i % 5 == 0) {
   cout << i <<endl;
        }
    }
    return 0;
}
```

7.

```
#include<iostream>
using namespace std;
int factorialUsingForLoop(int num){
    int fact=1;
    for(int i=1;i<=num;i++){
        fact=fact*i;
    }
    return fact;
}
int factorialUsingWhileLoop(int num){
    int fact=1,i=1;
    while(i<=num){
        fact=fact*i;
        i++;
    }
    return fact;
}
int factorialUsingDoWhileLoop(int num){
    int fact=1,i=1;
    do{
        fact=fact*i;
        i++;
    }while(i<=num);
    return fact;
}
int main(){
    int num;
    cout<<"Enter a number: ";
    cin>>num;
    cout<<"Factorial using for loop: "<<factorialUsingForLoop(num)<<endl;
    cout<<"Factorial using while loop: "<<factorialUsingWhileLoop(num)<<endl;
    cout<<"Factorial using do while loop: "<<factorialUsingDoWhileLoop(num)<<endl;

    return 0;
}
```

8.

```
#include<iostream>
using namespace std;
int main(){
    int num=1,sum=0,count=0;
    float avg;
    while(num<=10){
        sum=sum+num;
        count++;
        num++;
    }
    avg=(float)sum/count;
    cout<<"The average of numbers from 1 to 10 is: "<<avg<<endl;
    return 0;
}
```