Control Structure (Do While Loop)

WEEK

KEYWORDS:

Do condition

LAB EXERCISE:

Program 1:
Type the following program in the editor of the C++ environment. Compile the program and run it.

```cpp
#include<iostream>

using namespace std;

int main()
{
        int a=1;
        do
        {
                cout << a << endl;
                a++;
        }
        while(a<=10);

        cout << endl;
        system("PAUSE");
        return 0;
}
```

Output:
```
        1
        2
        3
        4
        5
        6
        7
        8
        9
        10
```

Program 2:

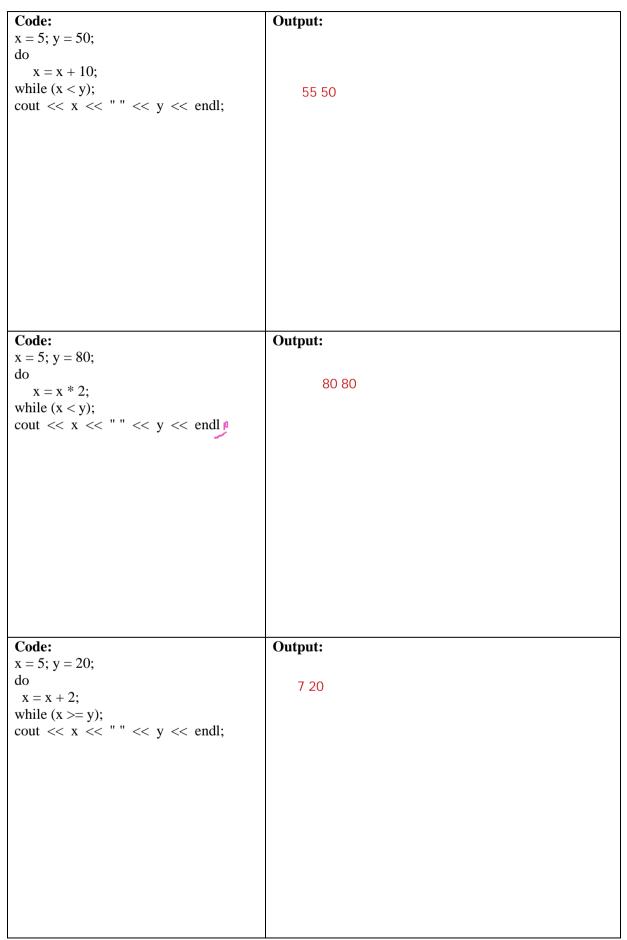Type the following program in the editor of the C++ environment. Compile the program and run it.

```cpp
#include<iostream>

using namespace std;

int main()
{
        int num, temp, sum;

        cout  <<"Enter a positive integer: ";
        cin  >>  num;
        cout  <<  endl;

        temp = num;
        sum = 0;
        do
        {
                sum = sum + num % 10;       //extract the last digit and add it to sum
                num = num / 10;             //remove the last digit
        }
        while (num > 0);

        cout  <<"The sum of the digits = "<<  sum  <<  endl;

        if (sum % 3 == 0)
                cout  <<  temp  <<" is divisible by 3"<<  endl;
        else
                cout  <<  temp  <<" is not divisible by 3"<<  endl;

        if (sum % 9 == 0)
                cout  <<  temp  <<" is divisible by 9"<<  endl;
        else
                cout  <<  temp  <<" is not divisible by 9"<<  endl;

        cout << endl;
        system("PAUSE");
        return 0;
}
```

Output:

Enter a positive integer: 12

The sum of the digits = 3
12 is divisible by 3
12 is not divisible by 9

ASSIGNMENT:

Question 1: How many times will each of the following loops execute? What is the output in each case?

Code:	Output:

x = 5; y = 50;
do
    x = x + 10;
while (x < y);
cout << x << " " << y << endl;
	55 50

x = 5; y = 80;
do
    x = x * 2;
while (x < y);
cout << x << " " << y << endl
	80 80

x = 5; y = 20;
do
  x = x + 2;
while (x >= y);
cout << x << " " << y << endl;
	7 20

Question 2: What is the output of the following program?

```cpp
#include <iostream>
using namespace std;
int main()
{
        int x, y, z;
        x = 4; y = 5;
        z = y + 6;
        do
            {
                    cout << z << " ";
                    z = z + 7;
            }
        while (((z - x) % 4) != 0);
        cout << endl;
        return 0;
}
```

Output:

11 18 25