CS-114 – Fundamental of Programing

Course Instructor: Dr Khwaja Fahad Iqbal

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LAB MANUAL #3

HOME TASK

ME 15 Section B

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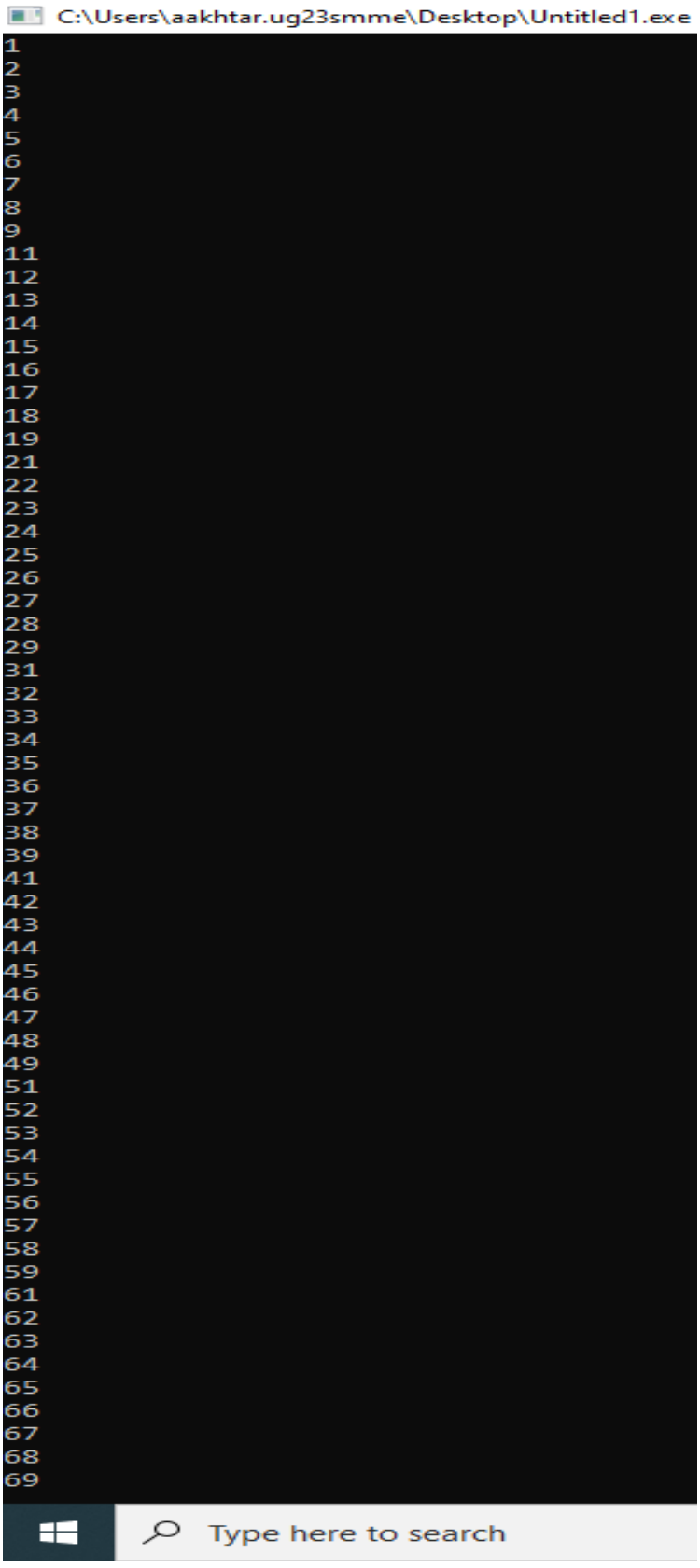
Task 1:

Code:

```
#include<iostream>
using namespace std;
int main()
{
	int a=1;
	while(a<=150) //the loop will repeat as long as a is smaller than or equal to 150
	{
		if(a%10==0) //using modulus operator to find if a is divisible by 10
			{a++;
			continue;} /*if a is divisible by 10 then the compiler will skip the rest of the code in this loop and move to the next iteration.*/
		cout<<a<<endl; /*a will only be output if a is not divisible by 10. If it is divisible by 10 then the loop will skip these statements*/
		a++;
	}
	return 0;
}
```

Output Screen: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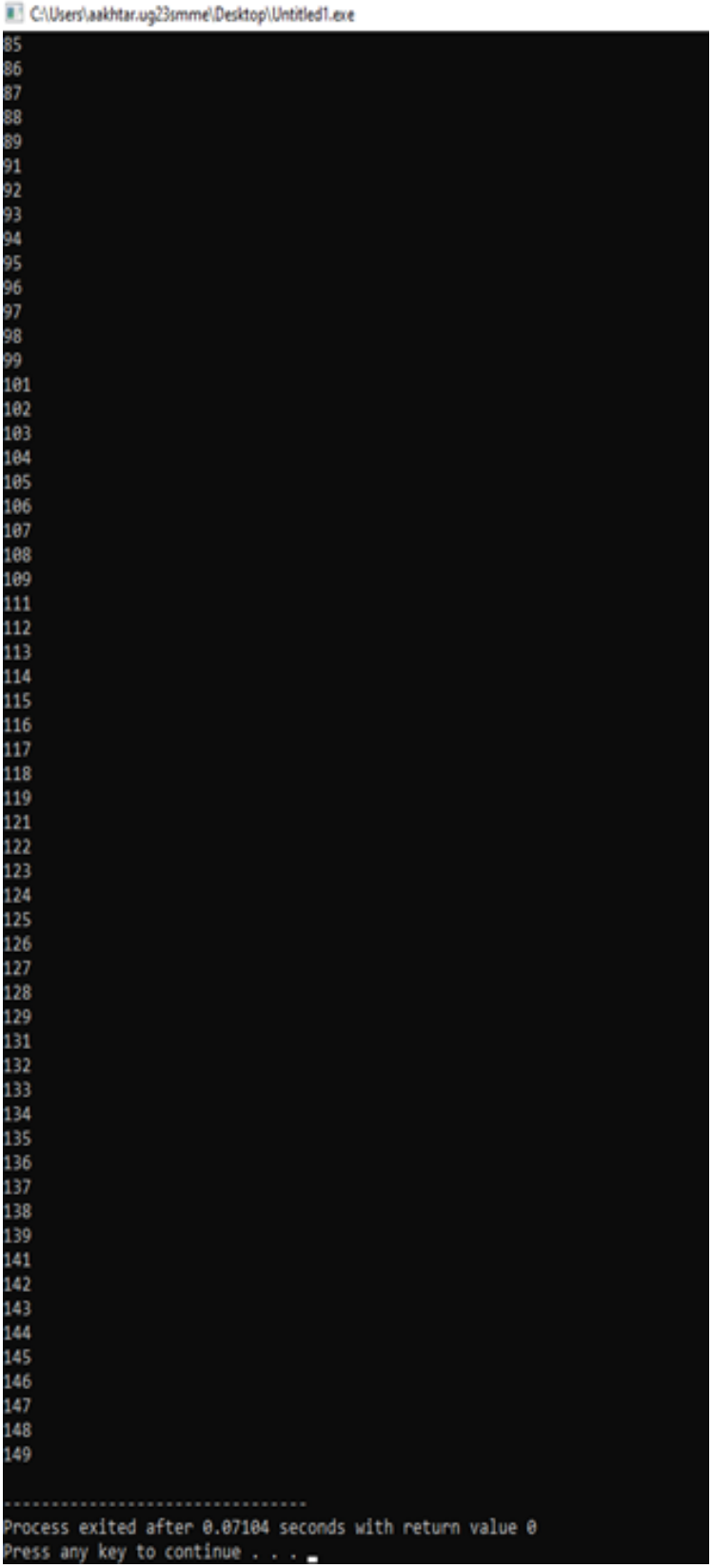
C:\Users\aakhtar.ug23smme\Desktop\Untitled1.exe
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Process exited after 0.07104 seconds with return value 0
Press any key to continue . . .

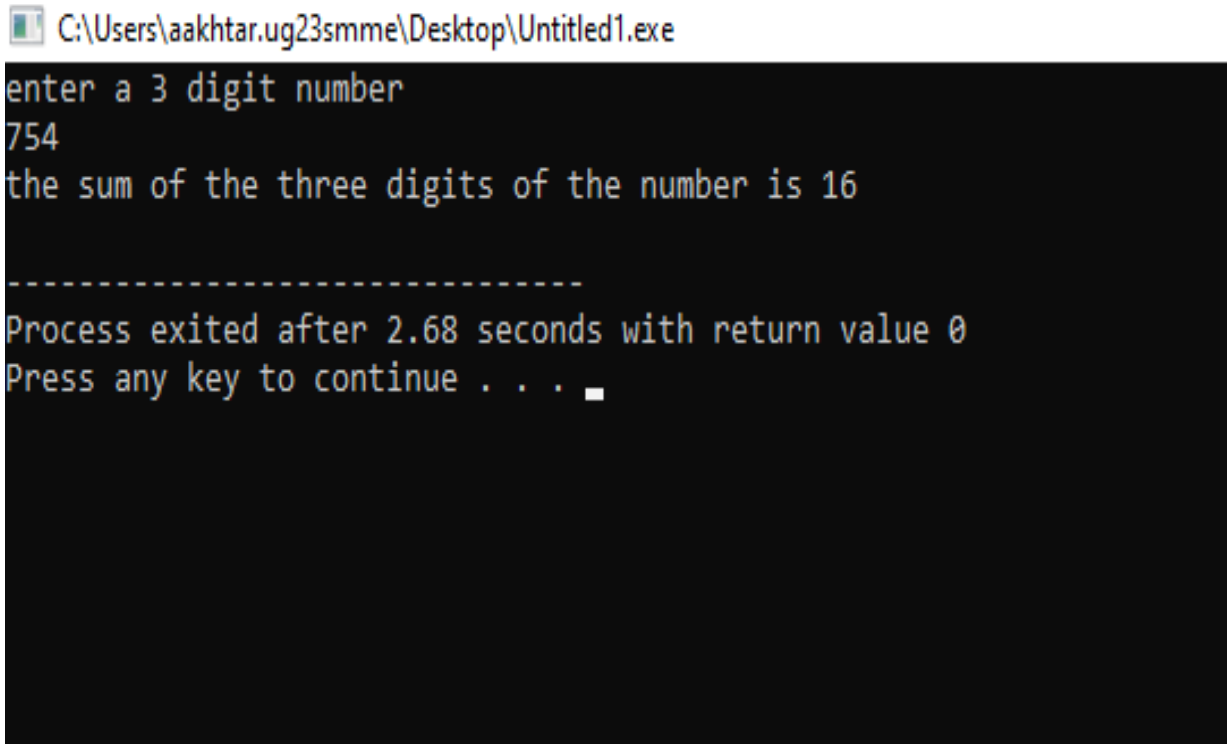
Task 2:
Code:

```
#include<iostream>
using namespace std;
int main()
{
        int r, q, n, s=0;
        cout<<"enter a number"<<endl;
        cin>>n; //taking input from user and storing it in n.
do {                    /*using do while loop so that the loop  runs at least once even if the condition is not true. */
                r=n%10;                 /* taking  remainder of n divided by 10 gives us the left most digit of the number. */
                n=n/10;  /* dividing by 10 eliminates the left most digit as it has already been obtained and will be added to the sum */
                s+=r;}
                while(n!=0); /* the loop will terminate when n equals zero which will happen when all the digits have been added.*/

                cout<<"The sum of the digits is "<<s;

                return 0; }
```

Output Screen:



TASK 3:
Code:

```
#include<iostream>
using namespace std;
int main()
{
	int n, i;
	cout<<"Enter a number"<<endl;
	cin>>n; //taking an integer as input and storing in n.

 /*using for loop to check if the number is a prime. Initializing i=2 as every number is divisible by 1. we will check the divisibility with every number from 2 to half of the given integer. because no number can be divided by a value greater than its half.*/

for(i=2;i<=n/2;i++)
	{
		if(n%i==0) //checking if n is divisible by i.
		{cout<<n<<" is not a prime number"<<endl;
		break;} /*if n is divisible by i then n is not a prime. Hence we will terminate the loop by using the break statement. */
	}
/* if  n is not divisible by i then it will leave a remainder when divided by i. if n is not  equal to zero that means n is not divisible by any number other than 1 and itself. hence it is  a prime.*/

if(n%i!=0)
{cout<<n<<" is a prime number";}
	return 0;
}
```

Output screen: