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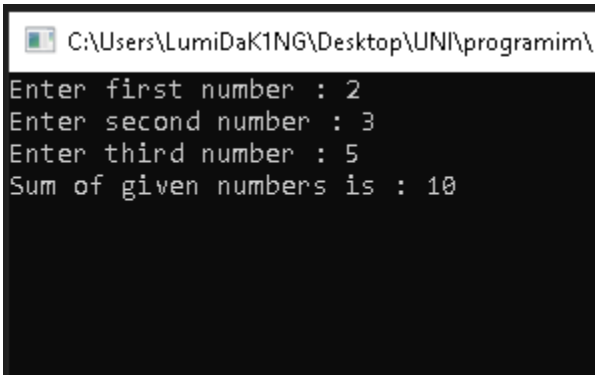
Chapter 4. Console Input and Output

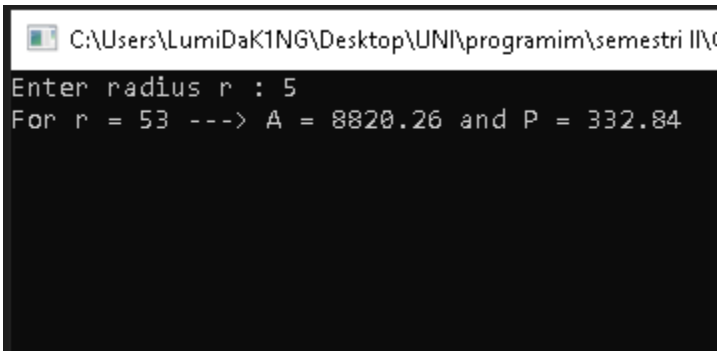
1. Write a program that reads from the console three numbers of type int and prints their sum.

```
using System;

namespace ex1
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter first number : ");
         int a = Convert.ToInt32(Console.ReadLine());
         Console.Write("Enter second number : ");
         int b = Convert.ToInt32(Console.ReadLine());
         Console.Write("Enter third number : ");
         int c = Convert.ToInt32(Console.ReadLine());
         int sum = a + b + c;
         Console.WriteLine("Sum of given numbers is : {0}", sum);
         Console.ReadKey();
      }
   }
}
```



2. Write a program that reads from the console the radius "r" of a circle and prints its perimeter and area.

```
using System;

namespace ex2
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter radius r : ");
         int r = Convert.ToInt32(Console.Read());
         double area = Math.Pow(r, 2) * 3.14;
         double perimeter = 2 * r * 3.14;
         Console.WriteLine("For r = {0} ---> A = {1} and P = {2}", r, area, perimeter);
         Console.ReadKey();
      }
   }
}
```



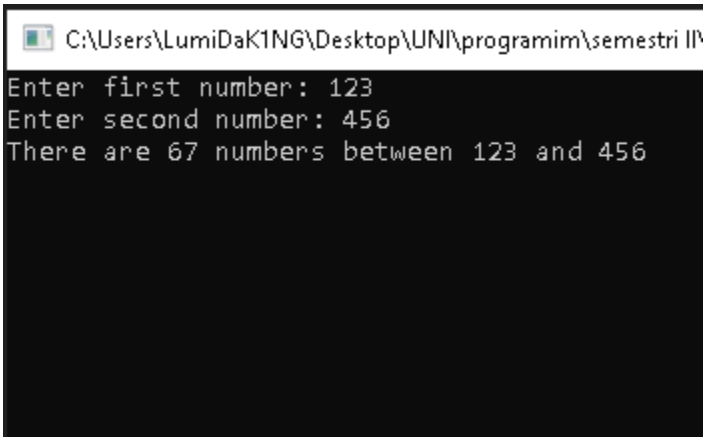
3. A given company has name, address, phone number, fax number, web site and manager. The manager has name, surname and phone number. Write a program that reads information about the company and its manager and then prints it on the console.

```
using System;

namespace ex3
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter Company Name : ");
         string compName = Console.ReadLine();
         Console.Write("Enter Company Address: ");
         string compAddress= Console.ReadLine();
         Console.Write("Enter Phone Number : ");
         string Pnum= Console.ReadLine();
         Console.Write("Enter Fax Number : ");
         string Fnum = Console.ReadLine();
         Console.Write("Enter Website : ");
         string website = Console.ReadLine();
         Console.Write("Enter Menager : ");
         string menager = Console.ReadLine();
         Console.Write("Enter Menager's name: ");
         string menagerName= Console.ReadLine();
         Console.Write("Enter Menager's surname : ");
         string menagerSurname = Console.ReadLine();
         Console.Write("Enter menager's phone number : ");
         string mPnum= Console.ReadLine();
         Console.WriteLine("Company : {0} | Address : {1} | Phone : {2} | Fax : {3} " +
            "| Website : {4} | Menager : {5}", compName, compAddress, Pnum, Fnum, website, menager);
         Console.WriteLine("Menager name : {0} | Surname : {1} | Phone : {2}",menagerName,
menagerSurname, mPnum);
         Console.ReadKey();
      } } }
```

4. Write a program that prints three numbers in three virtual columns on the console. Each column should have a width of 10 characters and the numbers should be left aligned. The first number should be an integer in hexadecimal; the second should be fractional positive; and the third – a negative fraction. The last two numbers have to be rounded to the second decimal place.

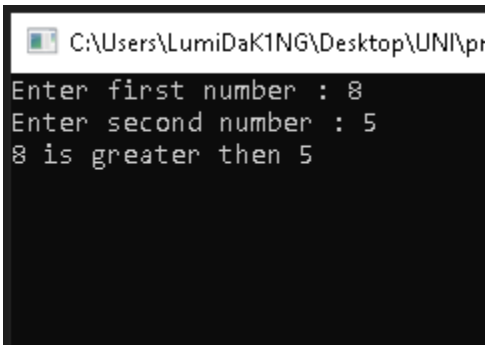
5. Write a program that reads from the console two integer numbers (int) and prints how many numbers between them exist, such that the remainder of their division by 5 is 0. Example: in the range (14, 25) there are 3 such numbers: 15, 20 and 25.

```
using System;

namespace ex5
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter first number: ");
         int a = Int32.Parse(Console.ReadLine());
         Console.Write("Enter second number: ");
         int b = Int32.Parse(Console.ReadLine());

         int counter = 0;

         for (int i = a; i <= b; i++)
         {
            if (i % 5 == 0) counter++;
         }

         Console.WriteLine("There are {0} numbers between {1} and {2}", counter, a, b);
         Console.ReadKey();
      }
   }
}
```



6. Write a program that reads two numbers from the console and prints the greater of them. Solve the problem without using conditional statements.

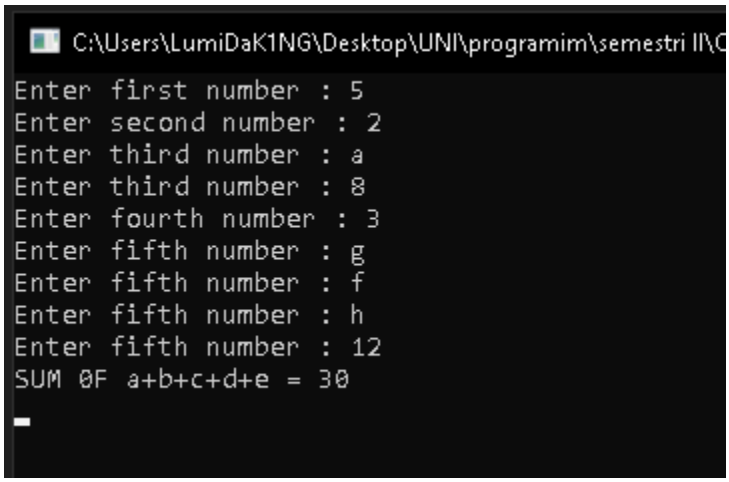
```
using System;

namespace ex6
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter first number : ");
         int a = Convert.ToInt32(Console.ReadLine());
         Console.Write("Enter second number : ");
         int b = Convert.ToInt32(Console.ReadLine());
         Console.WriteLine("{0} is greater then {1}", Math.Max(a, b), Math.Min(a, b));
         Console.ReadKey();
      }
   }
}
```



7. Write a program that reads five integer numbers and prints their sum. If an invalid number is entered the program should prompt the user to enter another number.

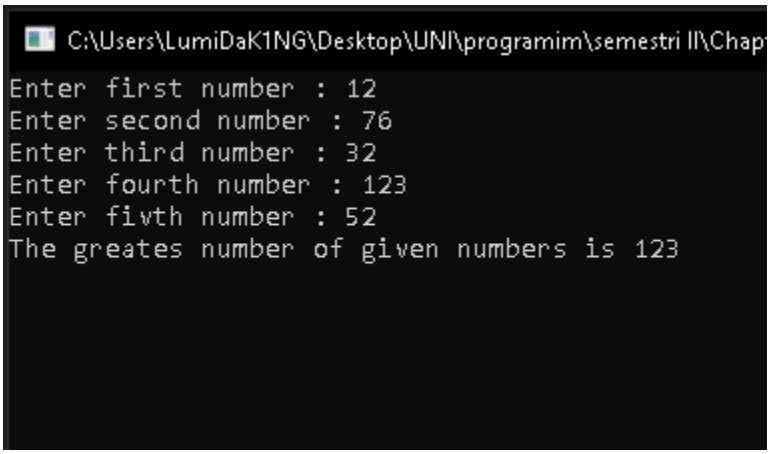
```
using System;

namespace ex7
{
   class Program
   {
      static void Main(string[] args)
      {
         int a, b, c, d, e, sum;
         bool parseSucceed = false;

         do
         {
            Console.Write("Enter first number");
            parseSucceed = Int32.TryParse(Console.ReadLine(), out a);
         } while (!parseSucceed);

         do
         {
            Console.Write("Enter second number");
            parseSucceed = Int32.TryParse(Console.ReadLine(), out b);
         } while (!parseSucceed);

         do
         {
            Console.Write("Enter third number");
            parseSucceed = Int32.TryParse(Console.ReadLine(), out c);
         } while (!parseSucceed);

         do
         {
            Console.Write("Enter fourth number");
            parseSucceed = Int32.TryParse(Console.ReadLine(), out d);
         } while (!parseSucceed);

         do
         {
            Console.Write("Enter fifth number");
            parseSucceed = Int32.TryParse(Console.ReadLine(), out e);
         } while (!parseSucceed);
```

```
        sum = a + b + c + d + e;
        Console.WriteLine("SUM 0F a+b+c+d+e = {0}", sum);
        Console.ReadKey();
    }
  }
}
```



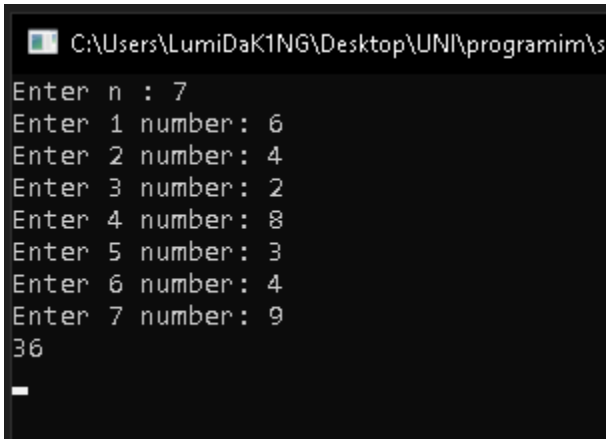
8. Write a program that reads five numbers from the console and prints the greatest of them.

```
using System;

namespace ex8
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter first number : ");
         int a = Convert.ToInt32(Console.ReadLine());
         Console.Write("Enter second number : ");
         int b = Convert.ToInt32(Console.ReadLine());
         Console.Write("Enter third number : ");
         int c = Convert.ToInt32(Console.ReadLine());
         Console.Write("Enter fourth number : ");
         int d = Convert.ToInt32(Console.ReadLine());
         Console.Write("Enter fivth number : ");
         int e = Convert.ToInt32(Console.ReadLine());

         if (a < b) a = b;
         if (a < c) a = c;
         if (a < d) a = d;
         if (a < e) a = e;

         Console.WriteLine("The greates number of given numbers is {0}", a);
         Console.ReadKey();
      }
   }
}
```



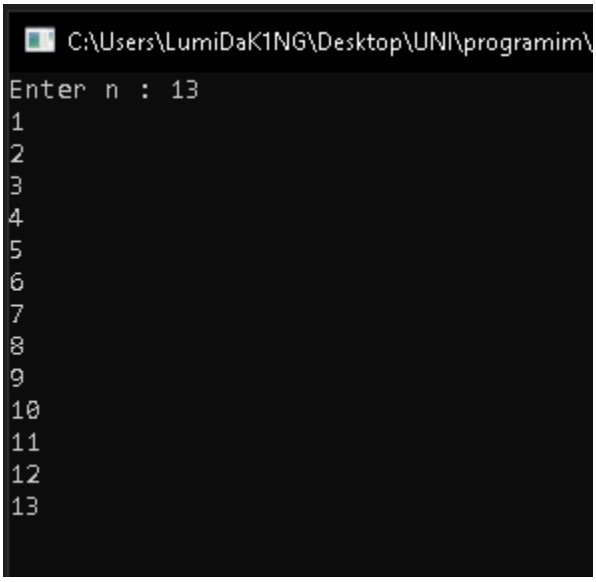
9. Write a program that reads an integer number n from the console. After that reads n numbers from the console and prints their sum.

```
using System;

namespace ex9
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter n : ");
         int n = Convert.ToInt32(Console.ReadLine());
         int sum = 0;
         for (int i = 0; i < n; i++)
         {
            Console.Write("Enter {0} number: ", i + 1);
            sum += Convert.ToInt32(Console.ReadLine());
         }
         Console.WriteLine(sum);
         Console.ReadKey();
      }
   }
}
```



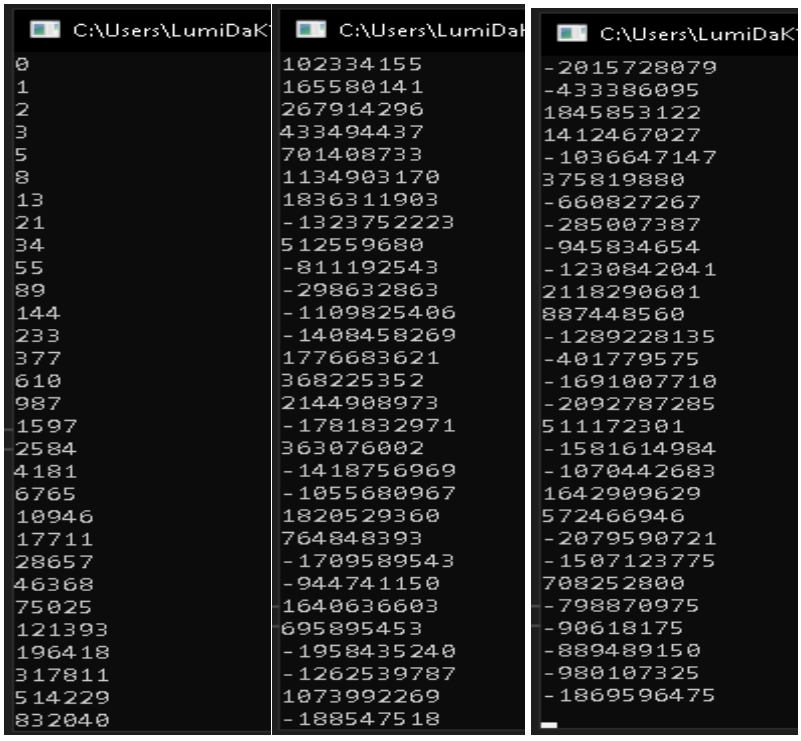
10. Write a program that reads an integer number n from the console and prints all numbers in the range [1…n], each on a separate line.

```
using System;

namespace ex10
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter n : ");
         int n = Convert.ToInt32(Console.ReadLine());
         for(int i = 1; i <= n; i++)
         {
            Console.WriteLine(i);
         }
         Console.ReadKey();
      }
   }
}
```



11. Write a program that prints on the console the first 100 numbers in the Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, …

```
using System;
namespace ex11
{
   class Program
   {
      static void Main(string[] args)
      {
         int num1 = 0;
         int num2 = 1;
         int sum = 1;
         int count = 0;
         Console.WriteLine(num1);
         while (count < 100)
         {
            sum = num1 + num2;
            num1 = num2;
            num2 = sum;
            Console.WriteLine(num2);
            count++;
         }
         Console.ReadKey();
      } } }
```



12. Write a program that calculates the sum (with precision of 0.001) of the following sequence: 1 + 1/2 - 1/3 + 1/4 - 1/5 + …

```
using System;

namespace ex12
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter number : ");
         int length = Convert.ToInt32(Console.ReadLine());
         double sum = 1.0;

         for (int i = 2; i <= length; i++)
         {
            sum += (1.0 / i);
         }

         Console.WriteLine("{0:F3}", sum);
         Console.ReadKey();
      }
   }
}
```