Practical-3

1. Write a program to remove duplicate elements of an array.

Program:

```
using System;
using System.Collections.Generic;
using System.Linq; using
System.Text; using
System.Threading.Tasks;

namespace practical_3
{

   class pr3_1
   {
      static void Main(string[] args)
      {
         Console.WriteLine("20012011077");
          int i, j, k, n;
         Console.Write("Please enter size of array : ");
n = Convert.ToInt32(Console.ReadLine());
         int[] arr = new int[n];
         Console.WriteLine("Enter the values you want to enter in array: ");
for (i = 0; i < 7; i++)
         {
            arr[i] = Convert.ToInt32(Console.ReadLine());
         }
         for (i = 0; i < n; i++)
         {
 for (j = i + 1; j < n; j++)
            {
               if (arr[i] == arr[j])
               {
                  for (k = j; k < n - 1; k++)
                  {
                     arr[k] = arr[k + 1];
                  }
n--;
               }
            }
         }
```

```
            Console.WriteLine("Printing the array with unique elements: ");
for (i = 0; i < n; i++)
            {
                Console.Write(arr[i] + " ");
            }
        }
    }
}
```

Output:

```
20012011077
Please enter size of array : 8
Enter the values you want to enter in array:
77
78
84
86
84
102
109
Printing the array with unique elements:
77 78 84 86 102 109 0
```

2. Write a program for multiplication of two 2-dimentional matrices using 2-d array.

Program:

```
using System; using
System.Collections.Generic; using
System.Linq; using System.Text;
using System.Threading.Tasks;

namespace practical_3
{

    class pr3_2
    {
        static void Main(string[] args)
        {
            Console.WriteLine("20012011077");
             int[,] a = new int[1, 3];
```

```
            int[,] b = new int[3, 1];
            int[,] c = new int[1, 1];
           int i, j, k;
           Console.WriteLine("Enter values of matrix A :");
           for (i = 0; i < 1; i++)
           {
              for (j = 0; j < 3; j++)
              {
                 a[i, j] = Convert.ToInt32(Console.ReadLine());
              }
           }
           Console.WriteLine("Enter values of matrix B :");
           for (i = 0; i < 3; i++)
           {
              for (j = 0; j < 1; j++)
              {
                 b[i, j] = Convert.ToInt32(Console.ReadLine());
              }
}
           for (i = 0; i < 1; i++)
           {
              for (j = 0; j < 1; j++)
              {
                 c[i, j] = 0; for (k = 0; k < 3; k++)
                 {
                    c[i, j] += a[i, k] * b[k, j];
                 }
              }
           }
           Console.WriteLine("values of matrix C (by mul of A and B):");
for (i = 0; i < 1; i++)
           {
              for (j = 0; j < 1; j++)
              {
                 Console.Write("{0}\t", c[i, j]);
              }
              Console.Write("\n");
           }
        }


     }
   }
```

Output:

```
20012011077
Enter values of matrix A :
7
8
6
Enter values of matrix B :
7
5
4
values of matrix C (by mul of A and B):
113

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ith code 0.
Press any key to close this window . . .
```

3. Write a program to generate Pascal Triangle using jagged array.

Program:

```
using System; using
System.Collections.Generic; using
System.Linq; using System.Text;
using System.Threading.Tasks;

namespace practical_3
{

   class pr3_3
   {
      static void Main(string[] args)
      {
         Console.WriteLine("20012011077");
          int[][] a = new int[5][];
          int i, j;
         for (i = 0; i < a.Length; i++)
         {
            a[i] = new int[i + 1];
         }
         for (i = 0; i < a.Length; i++)
         {
```

```
            for (j = 0; j < a[i].Length; j++)
            {
               if (j == 0 || i == j)
               {
                  a[i][j] = 1;
               }
else                 {
                  a[i][j] = a[i - 1][j - 1] + a[i - 1][j];
               }
               Console.Write(a[i][j] + " ");
            }
            Console.Write("\n");
         }
      }
   } }
```

Output:

```
20012011077
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

4. Write a user defined function to sort an array.

Program:

```
using System; using
System.Collections.Generic; using
System.Linq; using System.Text;
using System.Threading.Tasks;

namespace practical_3
{

   class pr3_4
   {
      static void Main(string[] args)
      {
         Console.WriteLine("20012011077");
          int n, i;
         Console.Write("Please enter size of array : ");
n = Convert.ToInt32(Console.ReadLine());
         int[] arr = new int[n];
         Console.WriteLine("Enter the values you want to sort in array :");
for (i = 0; i < n; i++)
```

```
        {
            arr[i] = Convert.ToInt32(Console.ReadLine());
        }
        sort(arr, n);
    }
    public static void sort(int[] arr, int n)
    {
        int i, j, temp;
        for (i = 0; i <= n - 1; i++)
        {
            for (j = i + 1; j < n; j++)
            {
                if (arr[i] > arr[j])
                {
                    temp = arr[i]; arr[i] = arr[j]; arr[j] = temp;
                }
            }
        }
        Console.WriteLine("Printing the sorted array :");
        for (i = 0; i < n; i++)
        {
            Console.Write(arr[i] + " ");
        }
    }
  }
}
```

Output:

```
20012011077
Please enter size of array : 8
Enter the values you want to sort in array :
77
109
84
86
102
114
12
32
Printing the sorted array :
12 32 77 84 86 102 109 114
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ith code 0.
Press any key to close this window . . .
```

5. Demonstrate the use of params keyword with the help of a program.

Program:

```
using System; using
System.Collections.Generic; using
System.Linq; using System.Text;
using System.Threading.Tasks;

namespace practical_3
{

   class pr3_5
   {
      static void Main(string[] args)
      {
         Console.WriteLine("20012011077");
          int m;
         m = Mul(2, 3, 8, 12, 20, 7);
         Console.WriteLine("Multiplication of each and every element of array: " +
m);
      }
      public static int Mul(params int[] arr)
      {
         int mul = 1; foreach (int i in arr)
         {
            mul = i * mul;
         }
         return mul;
      }
   }

}
```

Output:

```
20012011077
Multiplication of each and every element of array: 80640

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with code 0.
Press any key to close this window . . .
```

6. Discuss out and ref parameters with the help of programs.

Program:

1. By out parameters:

```
using System;
using System.Collections.Generic;
using System.Linq; using
System.Text; using
System.Threading.Tasks;

namespace practical_3
{

   class pr3_6_1
   {
      static void Main()
      {
         Console.WriteLine("20012011077");
          int a, b, ans;
         Mul(out a, out b, out ans);
         Console.WriteLine("multipication of two numbers is " + ans);
      }
      static void Mul(out int c, out int d, out int ans)
      {
  c = 77;
d = 85;
ans = c * d;
      }
   }

}
```

Output:

```
20012011077
multipication of two numbers is 6545

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ith code 0.
Press any key to close this window . . .
```

2. By ref parameters:

```
using System;
using System.Collections.Generic;
using System.Linq; using
System.Text;
using System.Threading.Tasks;

namespace practical_3
{

   class pr3_6_2
   {
      static void Main()
      {
         Console.WriteLine("20012011077");
         int a = 86, b = 77, ans = 109;
         Mul(ref a, ref b, ref ans);
         Console.WriteLine("multipication of two numbers is " + ans);
      }
      static void Mul(ref int c, ref int d, ref int ans)
      {
         c = 84; d = 102; ans = c * d;
      }
   }
 }
```

Output: