

Assignment 04

First Project:

1. Define 3D Point Class and the basic Constructors (use chaining in constructors).
2. Override the ToString Function to produce this output:

```
Point3D P = new Point3D (10,10,10);
```

```
Console.WriteLine (P.ToString( ));
```

Output: "Point Coordinates: (10, 10, 10)".

3. Read from the User the Coordinates for 2 points P1, P2
(Check the input using try Pares, Parse, Convert).
4. Try to use ==
If (P1 == P2) Does it work properly?
5. Define an array of points and sort this array based on X & Y coordinates.
6. Implement ICloneable interface to be able to clone the object.

To implement more than one interface.

```
class Point3D:IComparable ,ICloneable
```

Second Project:

Define Class Maths that has four methods: Add, Subtract, Multiply, and Divide, each of them takes two parameters. Call each method in Main () .

Modify the program so that you do not have to create an instance of class to call the four methods.

Third Project:

1. Define Class Duration To include Three Attributes Hours, Minutes and Seconds.

2. Override All System.Object Members (ToString, Equals,GetHashCode) .

3. Define All Required Constructors to Produce this output:

```
Duration D1 =new Duration (1,10,15);
```

```
D1.ToString();
```

Output: Hours: 1, Minutes :10, Seconds :15

```
Duration D1 =new Duration (3600);
```

```
D1.ToString();
```

Output: Hours: 1, Minutes :0, Seconds :0

```
Duration D2 =new Duration (7800);
```

```
D2.ToString();
```

Output: Hours: 2, Minutes :10, Seconds :0

```
Duration D3 =new Duration (666);
```

```
D3.ToString();
```

Output: Minutes :11, Seconds :6

Next Session: Session 09

Implement All required Operators overloading to enable this
Code:

- D3=D1+D2
- D3=D1 + 7800
- D3=666+D3
- D3= ++D1 (Increase One Minute)
- D3 = --D2 (Decrease One Minute)
- D1= D1 -D2
- If (D1>D2)
- If (D1<=D2)
- If (D1)
- DateTime Obj = (DateTime) D1