Assignment 02

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,GetHasCode) .

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

4. 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