ISLAMIC UNIVERSITY OF TECHNOLOGY

DHAKA, BANGLADESH

ORGANIZATION OF ISLAMIC COOPERATION

SWE 4201: Object-Oriented Concepts I Assignment

Title: Creating a console application (.NET)

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Submission Date: 17/01/2023

Class is a data structure in C# language which unites data variables and functions in a single unit. It is like a blueprint for creating objects. Objects are instances of the classes. Where a class is just a blueprint, object is an incarnation of the class and contains data. The different operations are performed on the object. There are different types of classes. Each type has their own unique nature. There are also access modifiers which are used to set the accessibility of classes, methods, and other members in Object-Oriented programming. There are total six types of access modifiers that are used in C#. But in the following projected, only some of them has been used.

To create the office system project for InTech BD, the following classes has been used:

1. Parent class
2. Child class
3. Static class

4 different class has been used to create the project. One of them is a Static class, there is also one parent class and two child class of the mentioned parent class.

The Code is attached below-

CODE:

MAIN CLASS: Program.cs

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

namespace bonusassignment_210042111
{
    internal class Program
    {
        static void Main(string[] args)
        {
           // 1st co-Chief executive officer


            CEO c1 = new CEO();

            c1.name = "Nabila Islam Sheona";
            c1.div = "Global missionary";
            c1.num = 1712345923;
            c1.mission_complete = 8;
            c1.car = 109;

           // 2nd co-Chief executive officer
            CEO c2 = new CEO();
            c2.name = "Tashfia Hassan";
            c2.div = "Financial value driver";
            c2.num = 1922345924;
            c2.mission_complete = 0;
            c2.car = 0;

            // 3rd Chief executive officer
            CEO c3 = new CEO();
            c3.name = "Sadman Sourav Labib";
            c3.div = "Corporate entrepreneur";
            c3.num = 1712343456;
            c3.mission_complete = 2;
            c3.car = 206;

            // 1st Team Leader
            Team t1 = new Team();
            t1.name = "AH Emon";
            t1.div = "Team Alpha";
            t1.num = 1842355953;
            t1.mission_complete = 43;
            t1.paper_count = 13;
            t1.yearly_budget = 50000;
            t1.car_no = 202;
```

```
// 2nd  Team Leader
Team t2 = new Team();
t2.name = "Rifah Ramisa Ferdous";
t2.div = "Team Beta";
t2.num = 1452365977;
t2.mission_complete = 12;
t2.paper_count = 18;
t2.yearly_budget = 90000;
t2.car_no = 201;

// 3rd  Team Leader
Team t3 = new Team();
t3.name = "Rowshan Mannan";
t3.div = "Team Gama";
t3.num = 152368878;
t3.mission_complete = 51;
t3.paper_count = 26;
t3.yearly_budget = 250000;
t3.car_no = 102;

// 4th  Team Leader
Team t4 = new Team();
t4.name = "Shefayat Shams Adib";
t4.div = "Team Sigma";
t4.num = 164367778;
t4.mission_complete = 23;
t4.paper_count = 11;
t4.yearly_budget = 90000;
t4.car_no = 101;

// Printing
Utility.greet();
Utility.ceo_info();
Console.WriteLine($"\tName \t\t : {c1.name} ");
Console.WriteLine($"\tDivision \t : {c1.div} ");
Console.WriteLine($"\tNumber \t\t : +880 {c1.num} ");
Console.WriteLine($"\tMissions\t : {c1.task()} ");
Console.WriteLine($"\tOffice\t\t : {c1.office_room()} ");
Console.WriteLine($"\tTransport \t : {c1.istransport()} ");

Utility.ceo_info();
Console.WriteLine($"\tName \t\t : {c2.name} ");
Console.WriteLine($"\tDivision \t : {c2.div} ");
Console.WriteLine($"\tNumber \t\t : +880 {c2.num} ");
Console.WriteLine($"\tMissions\t : {c2.task()} ");
Console.WriteLine($"\tOffice\t\t : {c2.office_room()} ");
Console.WriteLine($"\tMissions\t : {c2.istransport()} ");

Utility.ceo_info();
Console.WriteLine($"\tName \t\t : {c3.name} ");
Console.WriteLine($"\tDivision \t : {c3.div} ");
Console.WriteLine($"\tNumber \t\t : +880 {c3.num} ");
Console.WriteLine($"\tMissions\t : {c3.task()} ");
Console.WriteLine($"\tOffice\t\t : {c3.office_room()} ");
Console.WriteLine($"\tTransport \t : {c3.istransport()} ");

Utility.team_info();
```

```
            Console.WriteLine($"\tName \t\t : {t1.name} ");
            Console.WriteLine($"\tDivision \t : {t1.div} ");
            Console.WriteLine($"\tPosition \t : {t1.ishead()} ");
            Console.WriteLine($"\tOffice\t\t : {t1.office_room()} ");
            Console.WriteLine($"\tNumber \t\t : +880 {t1.num} ");
            Console.WriteLine($"\tMissions\t : {t1.task()} ");
            Console.WriteLine($"\tProjects\t : {t1.project_capability()} ");
            Console.WriteLine($"\tTransport\t : {t1.car_no}");

            Utility.team_info();
            Console.WriteLine($"\tName \t\t : {t2.name} ");
            Console.WriteLine($"\tDivision \t : {t2.div} ");
            Console.WriteLine($"\tPosition \t : {t2.ishead()} ");
            Console.WriteLine($"\tOffice\t\t : {t2.office_room()} ");
            Console.WriteLine($"\tNumber \t\t : +880 {t2.num} ");
            Console.WriteLine($"\tMissions\t : {t2.task()} ");
            Console.WriteLine($"\tProjects\t : {t2.project_capability()} ");
            Console.WriteLine($"\tTransport\t : {t2.car_no}");

            Utility.team_info();

            Console.WriteLine($"\tName \t\t : {t3.name} ");
            Console.WriteLine($"\tDivision \t : {t3.div} ");
            Console.WriteLine($"\tPosition \t : {t3.ishead()} ");
            Console.WriteLine($"\tOffice\t\t : {t3.office_room()} ");
            Console.WriteLine($"\tNumber \t\t : +880 {t3.num} ");
            Console.WriteLine($"\tMissions\t : {t3.task()} ");
            Console.WriteLine($"\tProjects\t : {t3.project_capability()} ");
            Console.WriteLine($"\tTransport\t : {t3.car_no}");

            Utility.team_info();
            Console.WriteLine($"\tName \t\t : {t4.name} ");
            Console.WriteLine($"\tDivision \t : {t4.div} ");
            Console.WriteLine($"\tPosition \t : {t4.ishead()} ");
            Console.WriteLine($"\tOffice\t\t : {t4.office_room()} ");
            Console.WriteLine($"\tNumber \t\t : +880 {t4.num} ");
            Console.WriteLine($"\tMissions\t : {t4.task()} ");
            Console.WriteLine($"\tProjects\t : {t4.project_capability()} ");
            Console.WriteLine($"\tTransport\t : {t4.car_no}");

            Utility.conclusion(); Console.ReadLine();
        }
    }
}
```

PARENT CLASS: Officer.cs

```
using bonusassignment_210042111;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Xml.Linq;
namespace bonusassignment_210042111
{
     class Officer
    {
        public string name;
        public string div;
        public int mission_complete;
        public int num;

        public Officer(string aname, string adiv, int p, int number)
        {
            name = aname;
            div = adiv;
            mission_complete = p;
            num = number;
        }
        public Officer()
        {

        }
     public string task()
{
            if (mission_complete > 0)
            {
                return $"Total {mission_complete} missions completed";
            }
            else
            {

                return $"No mission completed yet";
            }
}

 public int office_room()
    {
        if (div == "Team Alpha")
        {
            return 401;
        }
        else if (div == "Team Beta")
        {

                return 402;
            }
            else if (div == "Team Gama")
            {

                return 403;
            }
            else
            {

                return 404;
            }}}}
```

CHILD CLASS 1: CEO.cs

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

namespace bonusassignment_210042111
{

    class CEO : Officer
        {
            public int car; public CEO()
            {

            }
        public string istransport()
            {
                if (car > 0)
                    return $"Car {car}";

            else
            {
                return "Personal Car";
            }

}
        }
    }
```

CHILD CLASS 2: Team.cs

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

namespace bonusassignment_210042111
{

        class Team : Officer
        {
            public int paper_count;
            public double yearly_budget;
            public int car_no;

            public Team()
            {
            }

public string ishead()
            {
                if (paper_count >= 20)
                {
                    return "Exclusive Team Leader";
                }
                else if (paper_count >= 10 && paper_count < 20)
                {

                return "Team Leader";

            }
                else
                {
                return "No";
                 }
            }

public string project_capability()
            {
                if (yearly_budget >= 500000)
                {
                    return "10 projects";
                }
                else if (yearly_budget >= 300000 && yearly_budget < 500000)
                {
                    return "5 projects";
                }
                else if (yearly_budget >= 100000 && yearly_budget < 300000)
                {
                    return "3 projects";
                }
                else if (yearly_budget >= 10000 && yearly_budget < 100000)
                {

                return "1 projects";

                 }
                else
                {
                return "No project";
                 }

        }
    }
    }
```

STATIC CLASS: Utiltiy.cs

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

namespace bonusassignment_210042111
{
     class Utility
    {

            public static int c = 1;
            public static int t = 1;
            public static void greet()
            {
                Console.WriteLine("\n Welcome To InTech BD\n");
            }
            public static void conclusion()
            {
                Console.WriteLine("\n\nThanks for visiting.\n");
            }
            public static void ceo_info()
            {

                Console.WriteLine($"\n\n Chief executive officer - {c}
Info\n");
                c++;
            }
            public static void team_info()
            {
                Console.WriteLine($"\n\n Team leader - {t} Info\n");
                t++;
            }
        }

        }
```