Ex. No: 1

Roll no: 20UCS088

Program name: To find the sum of each row of a jagged array.

\*/

int row, size;

Console.WriteLine("Enter the number of rows: ");

row = Convert.ToInt32(Console.ReadLine());

int[][] jagged = new int[row][];

for (int k = 0; k < row; k++)

{

Console.WriteLine("Size of row {0}", k + 1);

size = Convert.ToInt32(Console.ReadLine());

jagged[k] = new int[size];

for (int l = 0; l < size; l++)

{

Console.WriteLine("Enter value for row {0} size{1}", k + 1, l + 1);

jagged[k][l] = Convert.ToInt32(Console.ReadLine());

}

}

int sum = 0;

for (int k = 0; k < row; k++)

{

size = jagged[k].Length;

for (int l = 0; l < size; l++)

{

sum = sum + jagged[k][l];

}

Console.Write("Sum of row {0} is: ", k+1);

Console.WriteLine(sum);

sum = 0;

}

Ex. No: 2 (a)

Roll no: 20UCS088

Program name: Swap two numbers using ref parameter.

\*/

void swap(ref int x, ref int y)

{

x = x + y;

y = x - y;

x = x - y;

}

int num1, num2;

Console.Write("Enter the number1: ");

num1 = Convert.ToInt32(Console.ReadLine());

Console.Write("Enter the number2: ");

num2 = Convert.ToInt32(Console.ReadLine());

Console.WriteLine();

Console.WriteLine("Before swapping\na={0}\nb={1}",num1,num2);

swap(ref num1, ref num2);

Console.WriteLine("After swapping\na={0}\nb={1}", num1, num2);

Ex. No: 2 (b)

Roll no: 20UCS088

Program name: Find the area of triangle using in and out parameters.

\*/

void findarea(in int b, in int h, out int area)

{

area = (b \* h) / 2;

}

int b, h, area;

Console.Write("Enter the breadth: ");

b = Convert.ToInt32(Console.ReadLine());

Console.Write("Enter the height: ");

h = Convert.ToInt32(Console.ReadLine());

Console.WriteLine();

findarea(b, h, out area);

Console.WriteLine("Area of triangle is {0} square units", area);

Ex No: 3 (a)

Roll no: 20UCS088

Program: Create a C# class named Circle constructed by a data member “radius” and two methods that will compute the area and the perimeter of a circle.

\*/

namespace Ex3\_class\_objects

{

class Circle

{

internal double radius;

internal double area()

{

return (Math.PI \* radius \* radius);

}

internal double perimeter()

{

return (2 \* Math.PI \* radius);

}

}

internal class Program

{

static void Main(string[] args)

{

Console.Write("Enter the radius: ");

Circle circle = new Circle();

circle.radius = Convert.ToDouble(Console.ReadLine());

Console.WriteLine();

Console.WriteLine("Area of circle is {0}", Math.Round(circle.area(), 2));

Console.WriteLine("Perimeter of circle is {0}", Math.Round(circle.perimeter(), 2));

}

}

}

Ex No: 3 (b)

Roll no: 20UCS088

Program: Define a STUDENT class with roll number, name and marks in 3 of subjects. Use appropriate functions to find the average of two best marks for a student and print roll number, name and average marks of a student. First, initialize the data members using constructors.

\*/

using System;

public class Student

{

int Ma1, Ma2, Ma3;

string roll, Sname;

public Student(string r, string name, int m1, int m2, int m3)

{

roll = r;

Sname = name;

Ma1 = m1;

Ma2 = m2;

Ma3 = m3;

}

public static void Main(string[] args)

{

Console.WriteLine("Enter your Roll Number: ");

string a = Console.ReadLine();

Console.WriteLine("Enter your Name: ");

string n = Console.ReadLine();

Console.WriteLine("Enter Mark1: ");

int b = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Enter Mark2: ");

int c = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Enter Mark3: ");

int d = Convert.ToInt32(Console.ReadLine());

Student s = new Student(a, n, b, c, d);

s.average();

}

public void average()

{

double ave = 0;

Console.WriteLine("Roll Number: " + roll);

Console.WriteLine("Name: "+Sname);

if(Ma1>Ma2 && Ma2 > Ma3)

{

ave=(Ma1+Ma2)/2.0;

}

else if(Ma1>Ma3 && Ma3 > Ma2)

{

ave = (Ma1 + Ma3) / 2.0;

}

else

{

ave = (Ma2 + Ma3) / 2.0;

}

Console.WriteLine("Average of best two marks: "+ave);

}

}

Ex No.: 4

Roll No.: 20ucs088

Program: C# program to compute the employee salary using multiple inheritances. Use the following specification for implementation.

namespace name

{

interface Gross

{

public void Gross\_sal();

double TA

{

get;

set;

}

double DA

{

get;

set;

}

}

class Employee

{

public string name;

public int basic;

public double ta, da;

public Employee(string name, int sal)

{

this.name = name;

this.basic = sal;

}

public double DA

{

set

{

da = value;

}

get

{

return da;

}

}

public double TA

{

set

{

ta = value;

}

get

{

return ta;

}

}

public void basic\_sal()

{

}

}

class salary : Employee, Gross

{

public int HRA;

public double gross\_sal;

public salary(string name, int HRA, int salary) : base(name, salary)

{

this.HRA = HRA;

}

public void Gross\_sal()

{

gross\_sal = basic + HRA + TA + DA;

}

public void Disp\_sal()

{

Console.WriteLine("Name: " + name);

Console.WriteLine("Employees gross salary is " + gross\_sal);

}

}

class main\_class

{

static void Main(string[] args)

{

Console.Write("Enter the Employee name:");

string name = Console.ReadLine();

Console.Write("Enter the Basic pay:");

int sal = Convert.ToInt32(Console.ReadLine());

Console.Write("Enter the HRA:");

int hra = Convert.ToInt32(Console.ReadLine());

salary emp = new salary(name, hra, sal);

emp.DA = sal \* 0.1;

emp.TA = 3600 + (3600 \* 17) / 100;

emp.Gross\_sal();

emp.Disp\_sal();

}

}

}

Ex No.: 5(a)

Roll No.: 20ucs088

Program: C# program to find the sum of integer and float array of numbers using generic class.

class Program

{

static void Main()

{

Console.WriteLine("Enter no. of integer number:");

int n = Convert.ToInt32(Console.ReadLine());

int[] arr = new int[n];

List<int> list = new List<int>();

for (int i = 0; i < n; i++)

{

Console.Write("Number {0}: ", i + 1);

arr[i] = Convert.ToInt32(Console.ReadLine());

list.Add(arr[i]);

}

ProcessItems<int>(arr);

Console.WriteLine("Enter no. of float number:");

int Fn = Convert.ToInt32(Console.ReadLine());

double[] arrFloat = new double[Fn];

List<double> listFloat = new List<double>();

for (int i = 0; i < Fn; i++)

{

Console.Write("Number {0}: ", i + 1);

arrFloat[i] = Convert.ToDouble(Console.ReadLine());

listFloat.Add(arrFloat[i]);

}

ProcessItems<double>(arrFloat);

}

static void ProcessItems<T>(IList<T> coll)

{

dynamic sum = 0;

foreach (T item in coll)

{

sum += item;

}

System.Console.WriteLine(sum);

}

}

Ex No.: 5(b)

Roll No.: 20ucs088

Program: Exception handling

namespace ExceptionHandling

{

class InvalidHourException : Exception

{

internal InvalidHourException(String message) : base(message)

{

}

}

class InvalidMinuteException : Exception

{

internal InvalidMinuteException(String message) : base(message)

{

}

}

class InvalidSecondException : Exception

{

internal InvalidSecondException(String message)

: base(message)

{

}

}

internal class Time

{

byte hours, minutes, seconds;

void Get()

{

Console.Write("Enter the hour: ");

hours = Convert.ToByte(Console.ReadLine());

if (hours > 12)

{

throw new InvalidHourException("Invalid hour!");

}

Console.Write("Enter the minute: ");

minutes = Convert.ToByte(Console.ReadLine()); ;

if (minutes > 60)

{

throw new InvalidMinuteException("Invalid minute!");

}

Console.Write("Enter the second: ");

seconds = Convert.ToByte(Console.ReadLine()); ;

if (seconds > 60)

{

throw new InvalidSecondException("Invalid second!");

}

}

void Display()

{

Console.WriteLine($"{hours}:{minutes}:{seconds}");

}

static void Main(string[] args)

{

Time time = new Time();

time.Get();

time.Display();

}

}

}

Ex No.: 6a

Roll No.: 20ucs088

Program: Delegates

namespace ex6\_delegates

{

class TrafficSignal

{

public static void Yellow()

{

Console.WriteLine("Yellow Light Signal To Get Ready");

}

public static void Green()

{

Console.WriteLine("Green Light Signal To Get Go");

}

public static void Red()

{

Console.WriteLine("Red Light Signal To Get Stop");

}

delegate void TrafficDel();

TrafficDel[] Signal = new TrafficDel[3];

internal void IdentifySignal()

{

Signal[0] = new TrafficDel(Yellow);

Signal[1] = new TrafficDel(Green);

Signal[2] = new TrafficDel(Red);

}

internal void show()

{

Signal[0]();

Signal[1]();

Signal[2]();

}

}

internal class Program

{

static void Main(string[] args)

{

TrafficSignal trafficSignal = new TrafficSignal();

trafficSignal.IdentifySignal();

trafficSignal.show();

}

}

}

Ex No.: 6(b)

Roll No.: 20ucs088

Program: Event handling

namespace Ex6\_EventHandling

{

class Event

{

delegate void EventDelegate();

event EventDelegate sumEvent;

public Event()

{

sumEvent += new EventDelegate(oddEvent);

}

void oddEvent()

{

Console.WriteLine("Sum is odd!");

}

static int sum(int num1, int num2)

{

return num1 + num2;

}

static void Main(string[] args)

{

int num1 = Convert.ToInt32(Console.ReadLine());

int num2 = Convert.ToInt32(Console.ReadLine());

if (sum(num1, num2) % 2 != 0)

{

Event e = new Event();

e.sumEvent();

}

}

}

}