C# Array:

Int a:

Variable is used to dynamic allocation property

Array = b ( 10, 20, 30)

1. Array is liner type data structure and create sequential memory allocation.
2. In C# array is used to memory allocation operator (new).
3. Types of allocation.
4. Int a; //design time allocation
5. Run time allocation(static or dynamic allocation)

Variable property override.

Property of array:

Collection of similar type data element.

A (10, 20, 30) is called array.

B (10, a, b) B not in array.

Function separator- [] is called array separator

Error representation:

1. Variable is returning undefined error.
2. Array is returning garbage error (memory not required).

How to create array in C#?

C programming – int a[5] value inside square bracket is called subscript value.

Ans. Syntax –

Datatype[] array\_name = new datatype[subscript\_value];

Ex-

Int[] a = new int[5];

How to store data element in array?

Ans. Using subscript method

Iteration

Type of loop in array:

There two types of loops

1. Input loop
2. Output loop – all type of logic implement inside output loop

/---------------------------------------/

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace input\_array

{

class Program

{

static void Main(string[] args)

{

int[] a = new int[5];

int i;

//input loop

for(i = 0; i < a.Length; i++)

{

Console.WriteLine("Enter any number : ");

a[i] = int.Parse(Console.ReadLine());

}

Console.WriteLine("\nGiven number : ");

//outpuy loop

for(i = 0; i < a.Length; i++)

{

Console.WriteLine(a[i]);

}

Console.ReadKey();

}

}

}

/-----------------------------------------------/

Assignment 1 Sum of array elements

Even number of array elements

Odd number of array elements

Greater number of array elements

Smaller number of array elements

How to find length of array?

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace input\_array

{

class Program

{

static void Main(string[] args)

{

int[] a = new int[5];

int i;

//input loop

for(i = 0; i < a.Length; i++)

{

Console.WriteLine("Enter any number : ");

a[i] = int.Parse(Console.ReadLine());

}

Console.WriteLine("\nGiven number : ");

//outpuy loop

for(i = 0; i < a.Length; i++)

{

Console.WriteLine(a[i]);

}

Console.ReadKey();

}

}

}

Assignment 2.

Generate the following result

Input subscript value form the user and store data elements as per subscript value.

Result – Enter your subscript value – 7

Input 7 elements

10, 20, 30, 40, 50, 60, 70

Array initialization:

Datatype[] array\_name = {};

Ex – int[] a = {1,2,3,4,5};

Array Methods:

1. Max method
2. Min method
3. Sum method
4. Sort method

/-----------------------------/

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Array\_in

{

class Program

{

static void Main(string[] args)

{

//array initialization

int[] a = { 1, 2, 3, 4, 5 };

Console.WriteLine(a.Max());

Console.WriteLine(a.Min());

Console.WriteLine(a.Sum());

Console.ReadKey();

}

}

}

/-----------------------------/

Array sorting using sort function.

Syntax – Array.Sort(array\_name)

Sort method is used to foreach loop

For\_each Loop:

1. For\_each is used to object looping.
2. For\_each cannot use (>,<,>=,<=).

Syntax –

foreach(variable in object)

{

}

Assignment 3:

Generate the following result

Create user define array and perform following operation in user choice

1. Sum
2. Min
3. Max
4. Sort

Double dimension array (row, col):

Syntax:

Data\_type[,] array\_name = new data\_type[r,c];

Ex – int [,] a = new int[3,3];

1 2 3 sum

4 5 6 sum

7 8 9 sum

Console.write(“/t”);

Assignment 4:

Find even number

Find odd number

Find sum

1 2 3 sum

4 5 6 sum

7 8 9 sum

1 2 3

4 5 6

7 8 9

Sum sum sum

C# structure:

1. Structure is collection of different type data element.

Ex – a(int,string,double)

1. Structure is to be created (struct) keyword

Struct name

{

Member

};

Ex-

Struct student

{

Int roll;

String name;

Double percentage;

};

1. Structure is to be create before the main class.
2. By default all structure member is private.

How to access structure member?

Ans. Structure is to access with the help of object (inside the main body).

Syntax –

Structure\_name obj\_name;

Student s1;

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace structure\_prog

{

//create structure

struct student

{

public int roll;

public string name;

};

class Program

{

static void Main(string[] args)

{

//create struct object

student s1;

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

s1.roll = int.Parse(Console.ReadLine());

Console.WriteLine("Enter Name : ");

s1.name = Console.ReadLine();

Console.WriteLine("\nroll no : " + s1.roll + "\nName : " + s1.name);

Console.ReadKey();

}

}

}

int roll, id, cardno, reciptNo, admissionno, per, totoal;

string name, city, emp\_name, emp\_city, college, branch, semester, sub, division, dest, company, hr;

struct student

{

Roll,name, city,state

Per,branch,sem;

}

Struct emp

{

Name, dest, comp, hr;

}

*Types of code*

1. *Organised*
2. *Unorganised*

Create organised code in a program with help of structure.

Assignment

Create a class – college

Create a method – input ()

Parameter name – roll, name, city, branch, percentage

Create a structure – student

Create a member – roll, name, city, branch, per

Logic 1. Input all the parameter by the user (structure member).

Logic 2. Pass all parameter (input method) using structure member.

Logic 3. In parameter concept using named parameter.

Generate the following condition

Per > 60 – first division

Per > 50 && per < 60 – second division

Per > 40 && per < 50 – third division

Otherwise fail

Array

Structure

*C# Collection*

1. Collection is a special type of library is use to manage group of data element.
2. All collection method is store inside collection library.
3. Include collection library with the help of using statement

Ex- using system.collection

Collection Method:

1. ArrayList
2. Stack
3. HashTable
4. SortedList

ArrayList

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Collections;

namespace collectionin

{

class Program

{

static void Main(string[] args)

{

//create arraylist

ArrayList a1 = new ArrayList();

//store data in arraylist

a1.Add(20);

a1.Add(60);

a1.Add(40);

a1.Add(90);

a1.Add(30);

//display count of ArrayList

Console.WriteLine("\n"+a1.Count);

// display ArrayList element

foreach(int i in a1)

{

Console.WriteLine(i);

}

//how to Sort array element

a1.Sort();

Console.WriteLine("\nSorted : ");

foreach (int i in a1)

{

Console.WriteLine(i);

}

//how to remove specific date vale in data list

a1.Remove(20);

Console.WriteLine("After remove element : ");

foreach (int i in a1)

{

Console.WriteLine(i);

}

//how to remove with index value

a1.RemoveAt(3);

Console.WriteLine("After remove element : ");

foreach (int i in a1)

{

Console.WriteLine(i);

}

Console.ReadKey();

}

}

}

Task1 – input five element form the user and store in a ArrayList

Perform following operation(user choice)

1. Count
2. Sort
3. Display
4. Remove (Enter Digit: )
5. Remove with index