Bahria University,

Karachi Campus



COURSE: CSC-221 DATA STRUCTURES AND ALGORITHM

TERM: FALL 2020, CLASS: BSE- 3 (A)

Submitted By:

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Submitted To:

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Signed Remarks: Score:

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| 02 | 09-10-20 | 02 | Linear Search & Sorting Algorithms |  |
| 03 | 13-10-20 | 03 | Recusrion |  |
| 04 | 30/10/2020 | 04 | Binary Search Algorithm |  |
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LAB EXPERIMENT NO.

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LIST OF TASKS

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| --- | --- |
| TASK NO | OBJECTIVE |
| 1 | Write a program which uses Iterative Binary Search algorithm to search age of the person using his/her name |
| 2 | Write a program which uses Recursive Binary Search algorithm to search the elements 35, and 78 and delete it.  NUMBERS = [7,12,33,35,49,56,57,60,74,98] |
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Submitted On:

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(Date: 31/10/20)

**Task No. 1: Write a program which uses Iterative Binary Search algorithm to search age of the person using his/her name**

**Solution:**

public static string binary(string[,]a,string name)

{

for (int i = 0; i < a.GetLength(0); i++)

{

for (int j = 0; j < a.GetLength(1); j++)

{

if (a[i, j] == name)

{

return a[i, j + 1];

}

}

}

return "Invalid name!!";

}

string name;

string [,]a = new string[,] { {"adil waheed","18","ali","20" },{"faizan","25","anjum","30" } };

Console.WriteLine("Display name");

for (int i = 0; i < a.GetLength(0); i++)

{

for (int j = 0; j < a.GetLength(1); j++)

{

Console.Write("{0}" ,a[i,j]+ "\t");

}

Console.WriteLine();

}

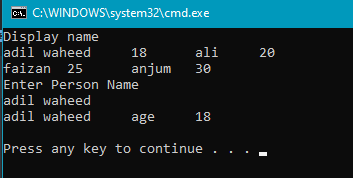
Console.WriteLine("Enter Person Name");

name = Convert.ToString(Console.ReadLine());

Console.WriteLine(name +"\t"+ "age"+"\t"+binary(a,name));

Console.WriteLine();

**OUTPUT**:



**Task No. 2: Write a program which uses Recursive Binary Search algorithm to search the elements 35, and 78 and delete it.**

**NUMBERS = [7,12,33,35,49,56,57,60,74,98]**

**Solution:**

public static int Binary(int[] array, int key, int min, int max)

{

int mid = (min + max) / 2;

if (min > max)

{

Console.WriteLine("this integer is not found in Array");

return -1;

}

else if (key == array[mid])

{

return mid;

}

else if (key < array[mid])

{

return Binary(array, key, min, mid - 1);

}

else if (key > array[mid])

{

return Binary(array, key, mid + 1, max);

}

else

{

return -1;

}

}

static void Main(string[] args)

{

int[] a = new int[]{ 7, 12, 33, 35, 49, 56, 57, 60, 74, 98 };

Console.WriteLine("We have an Array Shown Below.");

foreach (int nums in a)

{

Console.Write(nums + " ");

}

Console.WriteLine();

int min, max;

min = 0;

max = a.Length - 1;

// Binary(int[]array, int key, int min, int max)

Console.WriteLine("35 present at :" + Binary(a, 35, min, max));

Console.WriteLine("78 present at :" + Binary(a, 78, min, max)+ "(-1) means this integer is not found in Array");

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

{

if (a[i]==35||a[i]==78)

{

a = a.Except(new int[] { 35 }).ToArray();

a = a.Except(new int[] { 78 }).ToArray();

}

}

Console.WriteLine("After deletion");

Console.Write("New Array is=");

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

{

Console.Write(a[i] +" ");

}

Console.WriteLine();

**OUTPUT**:

