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BSIT 1A

**COMPUTER PROGRAMMING 2**

Activity 1 (\*C#)

1. **Counting Duplicate Characters**

using System;

class CP2 {

public static void Main() {

        String str = "micaellagalindes"; printDups(str);

    }

    static int NO\_OF\_CHARS = 256;

    static void fillCharCounts(String str, int[] count)

    {

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

            count[str[i]]++;

    }

    static void printDups(String str)

    {

        int []count = new int[NO\_OF\_CHARS];

        fillCharCounts(str, count);

        for (int i = 0; i < NO\_OF\_CHARS; i++)

            if(count[i] > 1)

                Console.WriteLine((char)i + ", " + "count = " + count[i]);

    }

}

1. **Finding the first non-repeated character:**

using System;

using System.Globalization;

class CP2 {

static int NO\_OF\_CHARS = 256;

static char[] count = new char[NO\_OF\_CHARS];

static void getCharCountArray(string str)

{

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

count[str[i]]++;

}

static int firstNonRepeating(string str)

{

getCharCountArray(str);

int index = -1, i;

for (i = 0; i < str.Length; i++) {

if (count[str[i]] == 1) {

index = i;

break;

}

}

return index;

}

public static void Main()

{

string str = "micaellagalindes";

int index = firstNonRepeating(str);

Console.WriteLine(index == -1 ? "Either "

+ "all characters are repeating or string "

+ "is empty"

: "First non-repeating character"

+ " is " + str[index]);

}

}

1. **Checking whether a string contains only digits:**

using System;

using System.Linq;

class CP2 {

public static void Main()

{

string s = "1234";

if (!s.Any(c => c < '0' || c > '9')) {

Console.WriteLine("Given string contains only digits");

}

else {

Console.WriteLine("Given string do not contains only digits");

}

}

}

1. **Removing white space from a String:**

using System;

class CP2 {

static int removeSpaces(char []str)

{

int count = 0;

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

if (str[i] != ' ')

str[count++] = str[i];

return count;

}

public static void Main(String[] args)

{

char []str = "m i c a e l l a g a l i n d e s ".ToCharArray();

int i = removeSpaces(str);

Console.WriteLine(String.Join("", str).Substring(0, i));

}

}

1. **Checking whether two strings are anagram:**

using System;

using System.Collections;

class CP2 {

    public static bool areAnagram(ArrayList str1, ArrayList str2)

    {

        int n1 = str1.Count;

        int n2 = str2.Count;

        if (n1 != n2) {

            return false;

        }

        str1.Sort();

        str2.Sort();

        for (int i = 0; i < n1; i++) {

            if (str1[i] != str2[i]) {

                return false;

            }

        }

        return true;

    }

    public static void Main(string[] args)

    {

        ArrayList str1 = new ArrayList();

        str1.Add('m');

        str1.Add('i');

        str1.Add('c');

        str1.Add('a');

        ArrayList str2 = new ArrayList();

        str2.Add('e');

        str2.Add('l');

        str2.Add('l');

        str2.Add('a');

        if (areAnagram(str1, str2)) {

            Console.WriteLine("The two strings are"

                              + " anagram of each other");

        }

        else {

            Console.WriteLine("The two strings are not"

                              + " anagram of each other");

        }

}

}