CSE1007 Java Programming. Fall Semester. 21-August-2021

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Lab Activity 1

Questions:

Write a java program for the following operations.
(i) Read the inputs using command line arguments/scanner class to form two dimensional String jagged array.
(ii) Use any ten String inbuilt functions to make your java code into meaningful real time string application.
(iii) Implement any five String inbuilt functions which you used in part-ii, to test the real time application.

Solutions:

part(i):

```
import java.util.Scanner;

public class part1
{
    public static void main(String[] args) throws Exception
    {
        Scanner sc=new Scanner(System.in);
        String A[][]= new String[4][];// 4 rows initialised but not specified number of
columns
        A[0]=new String[3];//specifying number of elements in row 1
        A[1]=new String[2];//specifying number of elements in row 2
        A[2]=new String[2];//specifying number of elements in row 3
        A[3]=new String[1];//specifying number of elements in row 4
        for(int i=0;i<A.length;i++)
        {
            for(int j=0;j<A[i].length;j++)
            {
                System.out.println("Enter the String");
                A[i][j]=sc.next();
            }
        }
        System.out.println("The elements of the 2D jagged array are:");
        for(int i=0;i<A.length;i++)
        {
            for(int j=0;j<A[i].length;j++)
            {
                System.out.print(A[i][j]+" ");
            }
            System.out.println();
        }
    }
}
```

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part1 - Notepad

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```
import java.util.Scanner;

public class part1
{
    public static void main(String[] args) throws Exception
    {
        Scanner sc=new Scanner(System.in);
        String A[][]= new String[4][];// 4 rows initialised but not specified number of columns
        A[0]=new String[3];//specifying number of elements in row 1
        A[1]=new String[2];//specifying number of elements in row 2
        A[2]=new String[2];//specifying number of elements in row 3
        A[3]=new String[1];//specifying number of elements in row 4
        for(int i=0;i<A.length;i++)
        {
            for(int j=0;j<A[i].length;j++)
            {
                System.out.println("Enter the String");
                A[i][j]=sc.next();
            }
        }
        System.out.println("The elements of the 2D jagged array are:");
        for(int i=0;i<A.length;i++)
        {
            for(int j=0;j<A[i].length;j++)
            {
                System.out.print(A[i][j]+" ");
            }
            System.out.println();
        }
    }
}
```

Select Command Prompt

```
Microsoft Windows [Version 10.0.19043.1165]
(c) Microsoft Corporation. All rights reserved.

C:\Users\shara>cd onedrive

C:\Users\shara\OneDrive>cd desktop

C:\Users\shara\OneDrive\Desktop>cd javavit

C:\Users\shara\OneDrive\Desktop\javavit>cd labactivity1

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>javac part1.java

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>java part1
Enter the String
abc
Enter the String
kql
Enter the String
ohho
Enter the String
noice
Enter the String
alright
Enter the String
surething
Enter the String
good
Enter the String
stuff
The elements of the 2D jagged array are:
abc kql ohho
noice alright
surething good
stuff

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>
```

part(ii):

```
import java.util.Scanner;
//converting lowercase to uppercase and the checking for palindrome string
public class part2
{
    public static void main(String[] args) throws Exception
    {
        Scanner sc=new Scanner(System.in);
        String A,rev="";
        System.out.println("Enter the String");
        A=sc.next();
        String K=A;
        int sum=0;
        for(int i=0;i<A.length();i++)
        {
            sum+=i;
            Character c=A.charAt(i);
            if(Character.isUpperCase(c))
            {
                K=K.replace(c,Character.toLowerCase(c));
            }
            else
            {
                K=K.replace(c,Character.toUpperCase(c));
            }
        }
        System.out.println("Converted String is: "+K);
        for(int i=A.length()-1;i>=0;i--)
        {
             rev=rev+A.charAt(i);
        }
        if(A.equalsIgnoreCase(rev))
        {
            System.out.println("Palindrome String");
        }
        else
        {
            System.out.println("Not a Palindrome String");
        }
    }
}
```

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part2 - Notepad

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```
import java.util.Scanner;
//converting lowercase to uppercase and the checking for palindrome string
public class part2
{
    public static void main(String[] args) throws Exception
    {
        Scanner sc=new Scanner(System.in);
        String A,rev="";
        System.out.println("Enter the String");
        A=sc.next();
        String K=A;
        int sum=0;
        for(int i=0;i<A.length();i++)
        {
            sum+=i;
            Character c=A.charAt(i);
            if(Character.isUpperCase(c))
            {
                K=K.replace(c,Character.toLowerCase(c));
            }
            else
            {
                K=K.replace(c,Character.toUpperCase(c));
            }
        }
        System.out.println("Converted String is: "+K);
        for(int i=A.length()-1;i>=0;i--)
        {
             rev=rev+A.charAt(i);
        }
        if(A.equalsIgnoreCase(rev))
        {
            System.out.println("Palindrome String");
        }
        else
        {
            System.out.println("Not a Palindrome String");
        }
    }
}
```

Command Prompt

```
C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>javac part2.java

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>java part2
Enter the String
brexit
Converted String is: BREXIT
Not a Palindrome String

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>javac part2.java

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>java part2
Enter the String
racecar
Converted String is: RACECAR
Palindrome String

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>
```

part(iii):

```
import java.util.Scanner;
//converting lowercase to uppercase and the checking for palindrome string
public class part3
{
    public static void main(String[] args) throws Exception
    {
        Scanner sc=new Scanner(System.in);
        String A,rev="";
        System.out.println("Enter the String");
        A=sc.next();
        char K[]=A.toCharArray();
        char t[]=A.toCharArray();
        for(int i=0;i<K.length;i++)
        {
            if(K[i]>='a'&& K[i]<='z')
            {
                K[i]=(char)((int)K[i]-
32);//difference in uppercase and lowercase in ASCII is 32
            }
            else
            {
                K[i]=(char)((int)K[i]+32);
            }

        }
        System.out.println("Converted String is: ");
        for(int i=0;i<K.length;i++)
        {
            System.out.print(K[i]+"");
        }
        System.out.println();
         for(int i=t.length-1;i>=0;i--)
        {
              rev=rev+t[i];
        }

        if(A.equalsIgnoreCase(rev))
        {
             System.out.println("Palindrome String");
        }
        else
         {
             System.out.println("Not a Palindrome String");
         }
    }
}
```

part3 - Notepad

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```
import java.util.Scanner;
//converting lowercase to uppercase and the checking for palindrome string
public class part3
{
    public static void main(String[] args) throws Exception
    {
        Scanner sc=new Scanner(System.in);
        String A,rev="";
        System.out.println("Enter the String");
        A=sc.next();
        char K[]=A.toCharArray();
        char t[]=A.toCharArray();
        for(int i=0;i<K.length;i++)
        {
            if(K[i]>='a'&& K[i]<='z')
            {
                K[i]=(char)((int)K[i]-32);//difference in uppercase and lowercase in ASCII is 32
            }
            else
            {
                K[i]=(char)((int)K[i]+32);
            }

        }
        System.out.println("Converted String is: ");
        for(int i=0;i<K.length;i++)
        {
            System.out.print(K[i]+"");
        }
        System.out.println();
         for(int i=t.length-1;i>=0;i--)
        {
              rev=rev+t[i];
        }

        if(A.equalsIgnoreCase(rev))
        {
             System.out.println("Palindrome String");
        }
        else
         {
             System.out.println("Not a Palindrome String");
```

Command Prompt

```
C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>javac part3.java

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>java part3
Enter the String
abcdefghanistan
Converted String is:
ABCDEFGHANISTAN
Not a Palindrome String

C:\Users\shara\OneDrive\Desktop\javavit\LabActivity1>
```