**Java Assignment 01**

1. **String Coding Questions:**

**Que 01 – How to Print duplicate characters from String?**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class DuplicateCharactersString1{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string : ");

String s = sc.nextLine();

System.out.println("Duplicate elements are : ");

for(int i = 0; i < s.length(); i++){

for(int j = i+1; j < s.length(); j++){

if(s.charAt(i) == s.charAt(j)){

System.out.println(s.charAt(i));

}

}

}

}

}

**==============================================================**

**Que 02 –** For example, if String is "Java" then the program should print "a"

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class AnagramsString2{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string 1 : ");

String s1 = sc.nextLine();

System.out.println("Enter the string 2 :");

String s2 = sc.nextLine();

s1 = s1.toLowerCase();

s2 = s2.toLowerCase();

char array1[] = s1.toCharArray();

char array2[] = s2.toCharArray();

Arrays.sort(array1);

Arrays.sort(array2);

boolean res = Arrays.equals(array1, array2);

if(res){

System.out.println("Two strings are anagrams");

}

else{

System.out.println("Two strings are not anagrams");

}

}

}

**==============================================================**

**Que 03 – How to check if two Strings are anagrams of each other?**

**Ans🡪**

import java.util.\*;

class AnagramString2

{

public static void main(String args [])

{

//taking input of two strings to be compared from user

//ans storing it into two String data type variable

//Scanner sc = new Scanner (System.in);

//System.out.println("Enter first string");

//String str1 = sc.nextLine();

//System.out.println("Enter second string");

//String str2 = sc.nextLine();

String str1 = "reverse";

String str2 = "reserve";

str1 = str1.toLowerCase();

str2 = str2.toLowerCase();

if(str1.length() == str2.length())

{

char [] charArray1 = str1.toCharArray();

char [] charArray2 = str2.toCharArray();

//converting two character arrays into two sorted arrays

Arrays.sort(charArray1);

Arrays.sort(charArray2);

//Arrays.equal() - checks if the sorted char arrays are

//equal or not

boolean result = Arrays.equals(charArray1,charArray2);

if(result)

{

System.out.println(str1+ " and " +str2+ " are Anagrams");

}

else

{

System.out.println(str1+ " and " +str2+ " are Not Anagrams");

}

}

else

{

System.out.println(str1+ " and " +str2+ " are Not Anagrams");

}

}

}

**==============================================================**

**Que 04 – How to program to print the first non repeated character from String?**

**Ans🡪**

import java.util.\*;

class NonRepeatedString

{

public static void main (String args [])

{

//Scanner sc = new Scanner (System.in);

//String str = sc.nextLine();

String str = "foreverfo";

System.out.println("the string is "+str);

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

{

boolean flag = true;

//for(int j=0;j<str.length();j++){

//if(i!=j && str.charAt(i)== str.charAt(j))

for(int j=i+1;j<str.length();j++)

{

if(str.charAt(i)==str.charAt(j))

{

flag = false;

break;

}

}

if(flag)

{

System.out.println("the first non repeated character in string is "+str.charAt(i) );

break;

}

}

}

}

**==============================================================**

**Que 05 – How to check if a String contains only digits?**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class DigitsInString5{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string : ");

String s = sc.nextLine();

s = s.toLowerCase();

char s1[] = s.toCharArray();

int count = 0;

for(int i = 0; i < s1.length; i++){

if(Character.isDigit(s1[i])){

count++;

}

}

if(count == s1.length){

System.out.println("String contains only digits");

}

else{

System.out.println("String contains charater ");

}

}

}

**==============================================================**

**Que 06 – How to find duplicate characters in a String?**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class DuplicateCharacterWithCount7{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string : ");

String s = sc.nextLine();

for(int i = 0; i < s.length(); i++){

int count = 1;

for(int j = i+1; j < s.length(); j++){

if(s.charAt(i) == s.charAt(j)){

count++;

if(count > 1){

System.out.println(s.charAt(i)+" : "+count);

}

}

}

}

}

}

**==============================================================**

**Que 07 – You need to write a program to print all duplicate character and their count in Java. For example, if given String is "Programming" then your program should print**

**g : 2**

**r : 2**

**m : 2**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class DuplicateCharacterWithCount7{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string : ");

String s = sc.nextLine();

for(int i = 0; i < s.length(); i++){

int count = 1;

for(int j = i+1; j < s.length(); j++){

if(s.charAt(i) == s.charAt(j)){

count++;

if(count > 1){

System.out.println(s.charAt(i)+" : "+count);

}

}

}

}

}

}

**==============================================================**

**Que 08 – How to count the occurrence of a given character in String?**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class OccuranceOfCharacter8{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the String : ");

String s = sc.nextLine();

System.out.println("Enter the character you want to find : ");

char ch = sc.next().charAt(0);

int count = 0;

for(int i = 0; i < s.length(); i++){

if(s.charAt(i) == ch){

count++;

}

}

System.out.println(ch+" occured in the string "+count+" times.");

}

}

**==============================================================**

**Que 09 – How to convert numeric String to an int?**

**Ans🡪**

/\*-->Java Program to Convert a String to Int

-->Variants of parseInt() Method

There are two variants of this method:

1-->parseInt(String s): This function parses the string argument as a signed decimal integer.

Syntax: public static int parseInt(String s) throws NumberFormatException

2-->parseInt(String s, int radix): This function parses the string argument as a signed integer in the radix specified by the second argument.

Syntax: public static int parseInt(String s, int radix) throws NumberFormatException \*/

public class Que09\_String\_to\_Integer {

// Main driver method

public static void main(String args[])

{

// Custom wide-varied inputs to illustrate usage of valueOf() method

int decimalExample = Integer.parseInt("20");

int signedPositiveExample = Integer.parseInt("+20");

int signedNegativeExample = Integer.parseInt("-20");

int radixExample = Integer.parseInt("20", 16);

int stringExample = Integer.parseInt("geeks", 29);

// Print commands on console

System.out.println("decimalExample:"+decimalExample);

System.out.println("signedPositiveExample: "+signedPositiveExample);

System.out.println("signedNegativeExample:"+signedNegativeExample);

System.out.println("radixExample: "+radixExample);

System.out.println("stringExample "+stringExample);

}

}

**/\*OUTPUT - STRING TO INTEGER CONVERSION**

F:\CDAC\CDAC\_Lab\Diwali Homework\String Coding Questions>java Que09\_String\_to\_Integer

decimalExample:20

signedPositiveExample: 20

signedNegativeExample:-20

radixExample: 32

stringExample 11670324

\*/

**==============================================================**

**Que 10 – For example, if you pass "67263" to the program then it should return 67263.**

**Ans🡪**

// Java program to demonstrate working parseInt() & replace() method

// Where No NumberFormatException is Thrown

// Main class

import java.util.Scanner;

import java.io.\*;

public class Que10\_NumericString\_to\_Integer {

// Main driver method

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

System.out.println("Enter the Numeric String:");

String string = sc.nextLine();

// String string = "\"67263\""; // passing manual inputstring :"67263"

System.out.println("Input String:"+string);

int decimalExample = -1;

// Custom wide-varied inputs to illustrate

// usage of valueOf() method

try{

//replace/remove "double quote"

String str = string.replace("\"","");

// int decimalExample = Integer.parseInt("20");

decimalExample = Integer.parseInt(str);

}

catch(NumberFormatException ne)

{

//ne.printStackTrace();

System.out.println("NumberFormatException:"+ne.getMessage());

}

// Print commands on console

System.out.println("String-"+string+" numeric representation -:"+decimalExample);

}

}

/\***OUTPUT-**

F:\CDAC\CDAC\_Lab\Diwali Homework\String Coding Questions>java Que10\_NumericString\_to\_Integer

Enter the Numeric String:

Input String:"67263"

String-"67263" numeric representation -:67263

F:\CDAC\CDAC\_Lab\Diwali Homework\String Coding Questions>

OUTPUT 02-

F:\CDAC\CDAC\_Lab\Diwali Homework\String Coding Questions>java Que10\_NumericString\_to\_Integer

Enter the Numeric String:

"1234"CDAC

Input String:"1234"CDAC

NumberFormatException:For input string: "1234CDAC"

String-"1234"CDAC numeric representation -:-1

F:\CDAC\CDAC\_Lab\Diwali Homework\String Coding Questions>\*/

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**Que 11 – How to replace each given character to other e.g. blank with %20?**

**For example, if the input is "Java is Great" and asked to replace space with %20 then it**

**should be "Java%20is%20Great".**

**Ans🡪**

public class ReplaceAllSpaces {

public void replace(String s1, int length) {

char[] chars = s1.toCharArray();

int spaceCount = 0;

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

if (chars[i] == ' ') {

spaceCount++;

}

}

int newLength = length + 2 \* spaceCount;

char [] charsNew = new char [newLength];

for (int i = length - 1; i >= 0; i--) {

if (chars[i] == ' ') {

charsNew[newLength - 1] = '0';

charsNew[newLength - 2] = '2';

charsNew[newLength - 3] = '%';

newLength = newLength - 3;

} else {

// System.out.println(chars[i]);

charsNew[newLength - 1] = chars[i];

newLength = newLength - 1;

}

}

System.out.println("Output String : " + String.valueOf(charsNew));

}

public static void main(String args[]) {

String s1 = "Java is Great";

int trueLength = s1.length();

System.out.println("Input String : " + s1);

ReplaceAllSpaces r = new ReplaceAllSpaces();

r.replace(s1, trueLength);

}

}

**==============================================================**

**Que 12 – For example, if the input is "Java is Great" and asked to replace space with %20 then it should be "Java%20is%20Great".**

**Ans🡪**

**==============================================================**

**Que 13 – How to find all permutations of String?**

**Ans🡪**

class Q13Permutation

{

void permute(String str, int l, int r)

{

if(l==r)

System.out.println(str);

else

{

for(int i=l; i<=r; i++)

{

str=swap(str,l,i);

permute(str,l+1,r);

str=swap(str,l,i);

}

}

}

public String swap(String a, int i, int j)

{

char temp;

char[] charArray = a.toCharArray();

temp = charArray[i] ;

charArray[i] = charArray[j];

charArray[j] = temp;

return String.valueOf(charArray);

}

public static void main(String args[])

{

String str="ABC";

int n=str.length();

Q13Permutation pobj=new Q13Permutation();

pobj.permute(str,0,n-1);

}

}

**==============================================================**

**Que 14 – How to reverse words in a sentence without using a library method?**

**Ans🡪**

class Q14

{

public static void main(String args[])

{

String str="i like this program very much";

String s[]=str.split(" ");

String ans="";

for(int i=s.length-1; i>=0; i--)

{

ans=ans+s[i]+ " ";

}

System.out.println("Reversed String :");

System.out.println(ans);

}

}

**==============================================================**

**Que 15 – How to remove duplicate characters from String?**

**Ans🡪**

import java.util.\*;

class String15

{

static String removeDuplicate(char str[], int n)

{

int index = 0;

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

{

int j;

for (j = 0; j < i; j++)

{

if (str[i] == str[j])

{

break;

}

}

if (j == i)

{

str[index++] = str[i];

}

}

return String.valueOf(Arrays.copyOf(str, index));

}

public static void main(String[] args)

{

char str[] = "helloworldhello".toCharArray();

int n = str.length;

System.out.println(removeDuplicate(str, n));

}

}

**==============================================================**

**Que 16 – For example, if the input is ‘bananas’ the output will be ‘bans’**

**Ans🡪**

import java.util.\*;

class String16

{

static void removeDuplicate(char str[],int length)

{

int index = 0;

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

{

int j;

for(j = 0;j<i;j++)

{

if(str[i]==str[j])

{

break;

}

}

if(j==i)

{

str[index++]=str[i];

}

}

System.out.println(String.valueOf(Arrays.copyOf(str,index)));

}

public static void main(String[] args)

{

String info="bananas";

char str[]=info.toCharArray();

int len =str.length;

removeDuplicate(str,len);

}

}

**==============================================================**

**Que 17 – How to check if a String is a valid shuffle of two String?**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class ValidShuffleOfStrings17{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string 1 : ");

String s1 = sc.nextLine();

System.out.println("Enter the string 2 : ");

String s2 = sc.nextLine();

System.out.println("Enter the string to check : ");

String s3 = sc.nextLine();

String s4 = s1 + s2;

s3 = s3.toLowerCase();

s4 = s4.toLowerCase();

char array1[] = s3.toCharArray();

char array2[] = s4.toCharArray();

Arrays.sort(array1);

Arrays.sort(array2);

boolean res = Arrays.equals(array1, array2);

if(res){

System.out.println("String is valid shuffle of two strings");

}

else{

System.out.println("String is not a valid shuffle of two string");

}

}

}

**==============================================================**

**Que 18 – For example, given first = "abc" and second = "def", third = "dabecf" is a valid shuffle since it preserves the character ordering of the two strings.**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class HighestOccuredCharacter18{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string : ");

String s = sc.nextLine();

int c[] = new int[s.length()];

for(int i = 0; i < s.length(); i++){

int count = 1;

for(int j = 0; j < s.length(); j++){

if(s.charAt(i) == s.charAt(j)){

c[i] = count++;

}

}

}

int large = c[0];

for(int i = 1; i < c.length; i++){

if(c[i] > large){

large = c[i];

}

}

char ch = ' ';

for(int i = 0; i < s.length(); i++){

if(c[i] == large){

ch = s.charAt(i);

}

}

System.out.println("Highest occured character in the string is : "+ch);

}

}

**==============================================================**

**Que 19 – How to return the highest occurred character in a String?**

For example if input is "aaaaaaaaaaaaaaaaabbbbcddddeeeeee" it should return "a".

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class HighestOccuredCharacter{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string : ");

String s = sc.nextLine();

int c[] = new int[s.length()];

for(int i = 0; i < s.length(); i++){

int count = 1;

for(int j = 0; j < s.length(); j++){

if(s.charAt(i) == s.charAt(j)){

c[i] = count++;

}

}

}

int large = c[0];

for(int i = 1; i < c.length; i++){

if(c[i] > large){

large = c[i];

}

}

char ch = ' ';

for(int i = 0; i < s.length(); i++){

if(c[i] == large){

ch = s.charAt(i);

}

}

System.out.println("Highest occured character in the string is : "+ch);

}

}

**==============================================================**

**Que 20 – Write a program to remove a given character from String?**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class RemoveGivenCharacter20{

public static void removeCharacter(String res, char c){

int x = res.indexOf(c);

StringBuffer str = new StringBuffer(res);

str.delete(x, x+1);

System.out.println("String after deletion of given character is : "+str);

}

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string : ");

String s = sc.nextLine();

System.out.println("Enter the character you want to remove : ");

char ch = sc.next().charAt(0);

removeCharacter(s, ch);

}

}

**==============================================================**

**Que 21 – You need to write a Java method that will accept a String and a character to be removed and return a String, which doesn't has that character e.g remove(String word, char ch).**

**Ans🡪**

**==============================================================**

**Que 22 – Write a program to find the longest palindrome in a string?**

**Ans🡪**

// Java implementation of O(n^2)

// time and O(1) space method

// to find the longest palindromic substring

public class Q22 {

// This function prints the

// longest palindrome substring

// (LPS) of str[]. It also

// returns the length of the

// longest palindrome

static int longestPalSubstr(String str)

{

int n = str.length(); // calculating size of string

if (n < 2)

return n; // if string is empty then size will be 0.

// if n==1 then, answer will be 1(single

// character will always palindrome)

int maxLength = 1,start=0;

int low, high;

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

low = i - 1;

high = i + 1;

while ( high < n && str.charAt(high) == str.charAt(i)) //increment 'high'

high++;

while ( low >= 0 && str.charAt(low) == str.charAt(i)) // decrement 'low'

low--;

while (low >= 0 && high < n && str.charAt(low) == str.charAt(high) ){

low--;

high++;

}

int length = high - low - 1;

if (maxLength < length){

maxLength = length;

start=low+1;

}

}

System.out.print("Longest palindrome substring is: ");

System.out.println(str.substring(start, start + maxLength ));

return maxLength;

}

// Driver program to test above function

public static void main(String[] args)

{

String str = "forgeeksskeegfor";

System.out.println("Length is: "

+ longestPalSubstr(str));

}

}

**==============================================================**

**Que 23 – How to sort String on their length in Java?**

**Ans🡪**

import java.util.\*;

class String23

{

static void sort(String []s, int n)

{

for(int i=1;i<n;i++)

{

String temp = s[i];

int j = i - 1;

while (j >= 0 && temp.length() < s[j].length())

{

s[j+1] = s[j];

j--;

}

s[j+1] = temp;

}

}

static void printArraystring(String str[], int n)

{

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

System.out.print(str[i]+" ");

}

public static void main(String args[])

{

String []arr = {" Jalgaon","I","from","am"};

int n = arr.length;

sort(arr,n);

printArraystring(arr,n);

}

}

**==============================================================**

**Que 24 – Write a Program to sort String on their length in Java? Your method should accept an array of String and return a sorted array based upon the length of String. Don't forget to write unit tests for your solution.**

**Ans🡪**

import java.util.\*;

class solution

{

static void sort(String []s, int n)

{

for (int i=1 ;i<n; i++)

{

String temp = s[i];

int j = i - 1;

while (j >= 0 && temp.length() < s[j].length())

{

s[j+1] = s[j];

j--;

}

s[j+1] = temp;

}

}

static void printArraystring(String str[], int n)

{

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

System.out.print(str[i]+" ");

}

public static void main(String args[])

{

String []arr = {"GeeksforGeeks", "I", "from", "am"};

int n = arr.length;

sort(arr,n);

printArraystring(arr, n);

}

}

**==============================================================**

**Que 25 – This question is asked by Facebook. Given a string, return whether or not it forms a palindrome ignoring case and non-alphabetical characters.**

**Ans🡪**

import java.lang.\*;

import java.util.\*;

class PalindromeString25{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the string : ");

String s1 = sc.nextLine();

s1 = s1.toLowerCase();

String s2 = "";

for(int i = s1.length()-1; i >= 0; i--){

s2 = s2+s1.charAt(i);

}

if(s2.equals(s1)){

System.out.println("String is palindrome");

}

else{

System.out.println("String is not palindrome");

}

}

}