**MODULE 1 :**

Program1

# Write a program that compares two strings and checks for substring presence.

**package** module1;

**public class** Comapre {

**public static void** main(String[] args) {

// **TODO** Auto-generated method stub String str1="Hello World";

String str2="Hello World";

String str3=**new** String("Hello World"); String str4="World";

String str5="hello world";

**if**(str1==str2) {

System.***out***.println("Using ==: String are equal");

} **else** {

System.***out***.println("Using ==: Strings are not equal");

}

**if**(str1.equals(str2)) {

System.***out***.println("Using equals: Strings are equal");

} **else** {

System.***out***.println("Using equals: Strings are not equal");

}

**if** (str1.equals(str5)) {

System.***out***.println("Using eic: Strings are equal");

}**else** {

System.***out***.println("Using eic: Strings are not equal");

than 2");

than 1");

}

**int** res=str1.compareTo(str2);

**if**(res==0){

System.***out***.println("Using copmareTo: Strings are equal");

}**else if** (res>0) {

System.***out***.println("Using compareTo: String 1 is greater

}**else** { **if** (res<0) {

System.***out***.println("Using compareTo: String 2 is greater

string");

}

**if**(str1.contains(str4)) {

System.***out***.println("Second string is substring of 1st

} **else** {

System.***out***.println("Not submiting");

}

}

}

}

Output:-

# Program to encode characters to their Unicode representations and decode them back.

**package** module1;

**import** java.nio.charset.StandardCharsets;

**import** java.util.Scanner;

**public class** unicode\_2 {

**public static void** main(String[] args) {

// **TODO** Auto-generated method stub Scanner sc=**new** Scanner("System.in"); System.***out***.println("Enter the String");

String data=sc.nextLine();

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

**int** codePoint=data.codePointAt(i); System.***out***.println("Character="+data.charAt(i)+ "Its unicode="+codePoint);

}

System.***out***.println(" Encoding ");

//Encoding

**byte**[] utf8Data=data.getBytes(StandardCharsets.***UTF\_8***); System.***out***.println("UTF-8 encoding of String:");

**for** (**byte** b:utf8Data) { System.***out***.println("Byte:"+b+"\n");

}

System.***out***.println(" Decoding ");

//Decoding

String decodeData= **new** String(utf8Data,StandardCharsets.***UTF\_8***); System.***out***.println("\n Decode String="+decodeData);

}

}

Output:-

# Write a program that takes user input for multiple strings and appends them using StringBuilder.

**package** module1;

**import** java.util.Scanner;

**public class** Builder\_3 {

**public static void** main(String[] args) {

// **TODO** Auto-generated method stub Scanner sc=**new** Scanner (System.***in***); System.***out***.println("adsf");

StringBuilder sb=**new** StringBuilder();

System.***out***.println("Enter Strings to oncatenate(type'exit' to stop)");

**while**(**true**) {

String input=sc.nextLine();

**if**(input.equalsIgnoreCase("exit")) {

**break**;

}

sb.append(input).append(" ");

}

System.***out***.println("Concatenated String="+sb.toString()); sc.close();

}

}

Output:-

## Write a program to split a paragraph into individual sentences.

**package** module1;

**public class** Split\_4 {

**public static void** main(String[] args) {

// **TODO** Auto-generated method stub

String str1="This is first sentence.Is this the second sentence?Yes!It is the third one";

String[] sentences=str1.split("[|,?]"); System.***out***.println("asdf"); **for**(String s:sentences) {

System.***out***.println(s);

}

}

}

Output:-

## Write a program to convert a date object to a string in a specific format.

Code:-

**package** mod1;

**import** java.text.SimpleDateFormat;

**import** java.util.\*;

**public class** Date\_Conversion\_5 {

**public static void** main(String[] args) {

// **TODO** Auto-generated method stub Date currentDate=**new** Date();

SimpleDateFormat formatter=**new** SimpleDateFormat("dd/MM/yyyy");

String formatedDate=formatter.format(currentDate); System.***out***.println("asdf"); System.***out***.println("Current Date:"+currentDate); System.***out***.println("Formatted Date:"+formatedDate);

}

}

Output:-

## Write a program to insert a substring into a string at a specific position using StringBuilder.

### Code:-

**package** mod1;

**public class** StringBuilder\_6 {

**public static void** main(String[] args) {

// **TODO** Auto-generated method stub String originalString="Hello World";

**int** position=6;

StringBuilder sb=**new** StringBuilder(originalString); sb.insert(position,"Beautiful");

System.***out***.println("asdf"); System.***out***.println("Resulting String:"+sb.toString());

}

}

Output:-

## Write a program to remove null values from an array of strings

Code:-

**package** mod1;

**import** java.util.ArrayList;

**public class** Remove\_null\_7 {

**public static void** main(String[] args) {

String[] originalArray= {"Apple",**null**,"Banana",**null**,"Grapes",**null**}; ArrayList<String> notNullList=**new** ArrayList<String>();

**for**(String element:originalArray) {

**if**(element!=**null**) {

notNullList.add(element);

}

}

String[]notNullArray=notNullList.toArray(**new** String[0]); System.***out***.println("asdf"); System.***out***.println("Array after removing nulls"); **for**(String element:notNullArray) {

System.***out***.println(element);

}

}

}

Output:-

## Write a program to find all occurrences of a pattern in a string using Pattern and Matcher.

Code:-

**package** mod1;

**import** java.util.regex.Matcher; **import** java.util.regex.Pattern; **public class** Pattern\_Matcher\_8 {

**public static void** main(String[] args) {

// **TODO** Auto-generated method stub

String patternString="ll"; String inputString="HelloWorld";

Pattern pattern=Pattern.*compile*(patternString);

Matcher matcher=pattern.matcher(inputString); System.***out***.println("asdf"); System.***out***.println("Pattern found at the Following position ");

**while**(matcher.find()) {

System.***out***.println("Start index:"+matcher.start()+",End index:"+matcher.end());

}

}

}

Output:-

## Write a program to count the number of vowels in a string using the Character class

Code:-

**package** mod1;

**public class** Vowel\_9 {

**public static void** main(String[] args) {

String inputString="HelloWorld";

**int** vowelcount=0; inputString=inputString.toLowerCase();

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

**char** currentcharacter=inputString.charAt(i);

**if**(Character.*isLetter*(currentcharacter)&&

*isVowel*(currentcharacter)) {

}

}

System.***out***.println("asdf"); System.***out***.println("Vowel count:"+vowelcount);

}

**private static boolean** isVowel(**char** c) {

**return** c=='a' || c=='e'||c=='o'||c=='u';

}

}

Output:

## Write a program to check whether a given string is a palindrome or not by using: A.StringBuffer Class

### Code:

**package** module1;

**public class** Bufferclass {

**public static void** main(String[] args) { System.***out***.println("asdf");

String input = "Racecar";

**boolean** result = *isPalindromeUsingBuffer*(input); System.***out***.println("Is the string a palindrome? " + result);

}

**private static boolean** isPalindromeUsingBuffer(String str) {

String cleaned = str.replaceAll("[^a-zA-Z0-9]", "").toLowerCase(); StringBuffer reversed = **new** StringBuffer(cleaned);

**return** cleaned.equals(reversed.reverse().toString());

}

}

Output:-

## B.String Class

### Code:-

**package** module1;

**public class** Stringclass {

**public static void** main(String[] args) { System.***out***.println("asdf");

String input = "A man, a plan!";

**boolean** result = *isPalindromeUsingString*(input); System.***out***.println("Is the string a palindrome? " + result);

}

**private static boolean** isPalindromeUsingString(String str) {

String cleaned = str.replaceAll("[^a-zA-Z0-9]", "").toLowerCase(); String reversed = **new** StringBuilder(cleaned).reverse().toString();

**return** cleaned.equals(reversed);

}

}

Output:-