1. **Ques: Write a java program to sort array in ascending order**

**package** Assessmentques;

**public** **class** Sortarray {

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

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

**int** a[] = {1,3,4,2,5};

**int** s;

**for**(**int** l=0; l<a.length; l++ ) {

System.***out***.println("before sorting array is :"+ a[l]);

}

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

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

{

**if**(a[i]>a[j])

{ s = a[i];

a[i] = a[j];

a[j] = s;

}

}

}

System.***out***.println("After sorting operation performed in ascending order:");

**for**(**int** k =0; k<a.length;k++)

{

System.***out***.println("Sorted array is :"+ a[k]);

}

}

}

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1. **Ques: Write a java program to explain Inheritance and Polymorphism**

**package** Assessmentques;

**public** **class** InheritanceandPolymorphism **extends** car

{

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

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

InheritanceandPolymorphism c=**new** InheritanceandPolymorphism();

System.***out***.println("Inheritating the Super class method feature");

c.feature();

Vehicle v= **new** Vehicle();

v.Color();

}

}

**class** Vehicle **extends** car {

**void** Color()

{

System.***out***.println("Overridding the Color method of Super class");

System.***out***.println("Colors of Car is white");

}

}

**class** car{

**void** feature()

{

System.***out***.println("Car have following feature:");

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

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

System.***out***.println("Different type of designs ");

}

**void** Color()

{

System.***out***.println("Colors of car is red");

}

}

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1. **Write a java program to demonstrate recursion**

**package** Assessmentques;

**public** **class** Recursion {

**void** add() {

System.***out***.println("Hi...".concat("Good morning"));

add();

}

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

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

Recursion r = **new** Recursion();

r.add();

}

}

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1. Java program to find & print duplicate characters in a string and String Array in a single program

**package** Assessmentques;

**public** **class** DuplicateString {

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

String abc = "Good Afternoon all";

String[] car = {"Alto", "Wagonar", "Alto", "Renault", "Honda", "Innova"};

// Find and print duplicate characters in a string

*findAndPrintDuplicateCharacters*(abc);

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

// Find and print duplicate characters in a string array

**for** (String str : car) {

*findAndPrintDuplicateCharacters*(str);

}

}

**public** **static** **void** findAndPrintDuplicateCharacters(String input) {

// Convert the input string to lowercase to ignore case sensitivity

input = input.toLowerCase();

// Create an array to store the count of each character (assuming ASCII characters)

**int**[] charCount = **new** **int**[256];

// Iterate over each character in the input string

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

**char** ch = input.charAt(i);

// Increment the count for the corresponding character

charCount[ch]++;

}

System.***out***.print("Duplicate characters in '" + input + "': ");

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

**if** (charCount[i] > 1) {

System.***out***.print((**char**) i + " ");

}

}

}

}

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1. **Write a Java Program to extract numbers & special characters from a string given below using Regular Expression? Read this String from a text file and display the results in another text file.**

**wFvLrl2xQjyrWrxeNI21@#9w**

**package** Assessmentques;

**import** java.io.BufferedReader;

**import** java.io.BufferedWriter;

**import** java.io.FileReader;

**import** java.io.FileWriter;

**import** java.io.IOException;

**import** java.util.regex.Matcher;

**import** java.util.regex.Pattern;

**public** **class** ExtractFromString {

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

String inputFile = "C:\\Users\\amritak\\Desktop\\input.txt"; // Path to the input text file

String outputFile = "C:\\Users\\amritak\\Desktop\\output.txt"; // Path to the output text file

**try** {

String inputString = *readTextFile*(inputFile);

String result = *extractNumbersAndSpecialChars*(inputString);

*writeTextFile*(outputFile, result);

System.***out***.println("Extraction successful. Results written to " + outputFile);

} **catch** (IOException e) {

System.***out***.println("An error occurred: " + e.getMessage());

}

}

**public** **static** String extractNumbersAndSpecialChars(String input) {

// Regular expression pattern to match numbers and special characters

String regex = "[0-9@#]+";

// Create a pattern object

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

// Create a matcher object

Matcher matcher = pattern.matcher(input);

// StringBuilder to store the extracted numbers and special characters

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

// Find and append matches to the StringBuilder

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

sb.append(matcher.group()).append(" ");

}

**return** sb.toString().trim();

}

**public** **static** String readTextFile(String filePath) **throws** IOException {

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

BufferedReader reader = **new** BufferedReader(**new** FileReader(filePath));

String line;

**while** ((line = reader.readLine()) != **null**) {

sb.append(line);

}

reader.close();

**return** sb.toString();

}

**public** **static** **void** writeTextFile(String filePath, String content) **throws** IOException {

BufferedWriter writer = **new** BufferedWriter(**new** FileWriter(filePath));

writer.write(content);

writer.close();

}

}

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