CSE1001 – Problem Solving Using JAVA

LAB SHEET – 3

Module: 3: Arrays, String and String buffer

1. Mr. John went to super market with a basket of holding 5 kg. He purchased 1 kg of apple, 1kg of orange, 1 kg of grapes, 1 kg of pomegranates and 1 kg of kiwi fruit. He puts all the fruits in his basket and at home he wants to check what he has bought from the market.

2. A university maintains a Library applications which keep track of the books or magazines the students read in every month using matrix form. A student visits the university library in the month of June, July, and August. He reads fiction, non-fiction books and magazines, both in paper copies and online. The library application shows how many different types of books and magazines the student read. Use the information given below for better understanding:

June	PAPER	ONLINE
Fiction	2	4
Non-fiction	3	1
Magazines	4	5

July	PAPER	ONLINE
Fiction	3	2
Non-fiction	1	1
Magazines	5	3

August	PAPER	ONLINE
Fiction	1	3
Non-fiction	2	3
Magazines	4	6

3. Mr. John has joined the Company as Database Administrator and his major role is to maintain the Employee database which includes Employee Id, Employee Name, Age and Employee Salary. The criteria for maintaining is that, he need to store all the records in one single table. How the John is going to access all the records which he has stored?

4. Create two Strings str1 and str2, using String functions find the

    a. Character at index 5 for str1

    b. Check if the str2 starts with "k"

    c. Find the length of str1 and str2

    d. Find if str1 and str2 are equal

    e. Find the substring of str1 for index 1:4

    f. Create a character array called dst, store dst[0]='a' and dst[1]='b' respectively and display it.

    g. Use getchars function to add characters to a character array dst and display it.

    h. Concatenate str2 with presidency University

5. Create a String "ScienceTechnology" using StringBuffer, Perform the following operations
    a. insert string "for" at location 7
    b. insert 0 at location 2
    c. insert "true" at location 3
    d. insert a character array

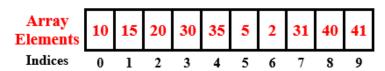# Record Writing   Self-Study

Note: Solve the given scenario following the record instructions and submit the record on or before the due date.

1. The Linear search or Sequential search is a method to find an element within a given array/List. Linear search or Sequential search is usually very simple to implement and is practical when the list has only a few elements, or when performing a single search in an unordered list. Sequential search to find an element in a given Array.

   Steps to be followed:

   1. Take the Search element from user
   2. Compare the search element to every element of an array starting from first element to till the end of the array.
   3. If the element if found display its position with suitable message
   4. Else display the unsuccessful message.

   Example: Assume that the following is an array of integer elements:

Array Elements	10	15	20	30	35	5	2	31	40	41
Indices	0	1	2	3	4	5	6	7	8	9

   Then,

   Sample 1:
       Input:
       Enter search element:
       2
       Output:
       The element 2 found at position 7.

   Sample 2:
           Input:
           Enter search element:
           45
           Output:
           Sorry, the element 45 is not found.

2. There are many companies advertises their brand by sponsoring on sports events like T-shirts to players, the equipment's needed to play the game and so on. Likewise, the two softball teams submitted their equipment lists to their sponsors. The equipment lists, its costs for Team A and Team B are as follows. As a programmer help the sponsors to calculate the total cost of the equipment's for each team they are spending for their branding.

Teams	Balls	Bats	Gloves
Team -A	12	45	15
Team -B	15	38	17

Equipment Name	Cost in Rs.
Balls	9
Bats	80
Gloves	60

3. In this modern era, naming the child passionately becoming common, like keeping the child name as a combination of the child's mother and father's names. Think you as application developer having interest in building such applications which takes the names of the father and mother and suggest the Name of the child by combining the names of the parents.

TEST YOUR SKILLS

Sl. No.	Questions
Q1	On which memory arrays are created in Java?
Q2	Can we call the main() method of a class from another class?
Q3	Is it possible to declare array size as negative?
Q4	What is the default value of the array?
Q4	What will be the output of below statements? String s1 = "Cat"; String s2 = "Cat"; String s3 = new String("Cat"); System.out.print(s1 == s2); System.out.print(s1 == s3);
Q5	What will be the output of below statements? String s1 = "abc"; String s2 = "def"; System.out.println(s1.compareTo(s2));

Q6	What will be the output of below program?
	public class Test {
	    public static void main(String[] args) {
	        String x = "abc";
	        String y = "abc";
	        x.concat(y);
	        System.out.print(x);
	    }
	}

Q7	What will be the output of below statements? String s = "Java"+1+2+"Quiz"+""+(3+4); System.out.println(s);
Q8	What are the drawbacks of the arrays in java?
Q9	What are the different ways to copy one Array from another Array?
Q10	Can we add or delete an element after assigning an array?