SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

CSE1007 Java PROGRAMMING LAB

Winter Semester 2020-21

Term End LAB

DATE: 03/06/21

Instruction

a. Write Your Register Number, Name, Course Code, Course Title and Slot in Answer Sheet.

COURSE CODE	COURSE TITLE	CLASS NBR	SLOT
CSE1007	**Java Programming**	VL2020210504182	**L53+L54**

Upload File should contains: (filename: regno_questionno)

- Question
- Source code
- Various Test Cases -Output screen shot

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1. (a) Let be an array A is of positive integers. The task is to find the leaders in the array. An element of array is leader if it is greater than or equal to all the elements to its right side. The rightmost element is always a leader.

Input:

n = 6

A[] = {16,17,4,3,5,2}

Output: 17 5 2

Explanation: The first leader is 17 as it is greater than all the elements to its right. Similarly, the next leader is 5. The right most element is always a leader so it is also included.

Example 2:

Input:

n = 5

A[] = {1,2,3,4,0}

Output: 4 0

(b) Given a sorted array of positive integers. The task is to rearrange the array elements alternatively i.e first element should be max value, second should be min value, third should be second max, fourth should be second min and so on.

Example 1:

Input:

N = 6

arr[] = {1,2,3,4,5,6}

Output: 6 1 5 2 4 3

Explanation: Max element = 6, min = 1, second max = 5, second min = 2, and so on... Modified array is : 6 1 5 2 4 3.

Example 2:

Input:

N = 11

arr[]={10,20,30,40,50,60,70,80,90,100,110}

Output:110 10 100 20 90 30 80 40 70 50 60

Explanation: Max element = 110, min = 10, second max = 100, second min = 20, and so on... Modified array is : 110 10 100 20 90 30 80 40 70 50 60.

2. Write a java code to count and show the Magic numbers of given array of integer numbers
(i) Sort(ascending) the given array by ignoring the numbers which contains zero's(Ex: 12030 -number contains two zero's, so ignore this number)
(ii) Sort(ascending) the given array after remove the odd digits in each items. If number contains more than two digits, then only remove odd digits otherwise ignore that particular number(Ex1- 1235867 - after removed odd digits from 1235867 you will get 256. Ex2- 33 no need to remove any digits from this number)
Magic Number: If any index item has not changed its original inputted index item after performed (i) and (ii) operation.
Note: Implement the above operations using package concepts.

Final Output:
Your array contains one magic number
1 is the magic number

3. Develop a java program to create three threads [EvenThread(set thread priority as 10 to print even numbers between 1 to n), OddThread(set thread priority as 6 to print odd numbers

between 1 to n) and PrimeThread(set priority as 8 to print prime numbers between 0 to n)] using Runnable interface to perform the following.

(i) Get n value from the user to concurrently print even numbers, odd numbers and prime numbers using its respective threads.

(ii) Get n value from the user to concurrently print first two highest priority thread's operations.

Sample Input and Output:

(i)
n=10
even 2S
odd 1
prime 3
odd 3
prime 5
even 4
…….
(ii)
n=10
even 2
prime 3
prime 5
even 4
……..

4.a). Create a package named Palindrome. It should have two classes namely String_palindrome and Number_palindrome. Both the class should have method to perform check_palindrome. Depends on the input received from the user, pass argument to the method check_palindrome of String_palindrome if input is string, otherwise pass argument to the number_palindrome . Write a java application program which make use of the above method.

b) Write a Java program using JavaFX in which user enters a number and clicks a button to check whether last digit is even or odd. Display the result in another text field.

5. (a)Design and implement an application *Password.java* that produces and prints a random password. The password is composed of random digits 0-9 and characters a-z. The first element is a character, the second is a digit, then a character, a digit, a character, a digit, a character, and a digit (8 elements in total). An example is: e5c8a0b6

b. Create a JavaFx application to enter a building name in our university. When a user clicks a button, display (in new text field) school names located in the building.

6 Create a package named alphabets. It should have two classes namely Vowels and Consonants. Both the class should have method to perform alphabet_type. Depends on the input received from the user, pass argument to the method alphabet_type of Vowels to print only vowels from the given string, otherwise pass argument to the Consonants. Write a java application program which make use of the above method.

b) Write a Java program using JavaFX in which user enters a number and clicks a button to check whether given number is palindrome or not. Display the result in another text field.