List of Programs

Subject Code: PCS-408 Subject: Java Programming Lab

1. Write a program to demonstrate static variables, methods, and blocks.

2. Create a Java program to perform survey on four different model of Maruti (Maruti -K10, Zen-Astelo, Wagnor, Maruti- SX4) owned by person living in four metro cities(Delhi, Mumbai, Chennai & Kolkatta). Display tabulated report like format given below:

	Maruti-K10	Zen-Astelo	Wagnor	Maruti-SX4
Delhi				
Mumbai				
Cheenai				
Kolkatta				

Calculate numbers of cars of different model in each metro city.

3. Calculate the sum of rows & columns of matrix having size 5x5 in the format given below:

	Quarter1	Quarter2	Quarter3	Quarter4	Total
Salesman1	2	3	4	5	14
Salesman2	1	1	1	1	4
Salesman3	2	2	2	2	8
Salesman4	3	3	3	3	12
Total	8	9	10	11	38

4. The daily maximum temperatures recorded in 5 cities during the month of April (for first 10 days) have been tabulated as follows:

Cities

Day	Delhi	Mumbai	Kolkatta	Chennai	Dehradun
1	28	29	27	30	32
2	32	30	27	**22**	28
3…	26	38	40	36	33
10	32	34	39	29	**42**

Sample Output:

Maximum Temperature is ***42*** on ***10*** Day of this month in ***Dehradun***

Minimum Temperature is ***22*** on ***2*** Day of this month in Chennai

5. Write a Java program to print all permutations of a given string with repetition.

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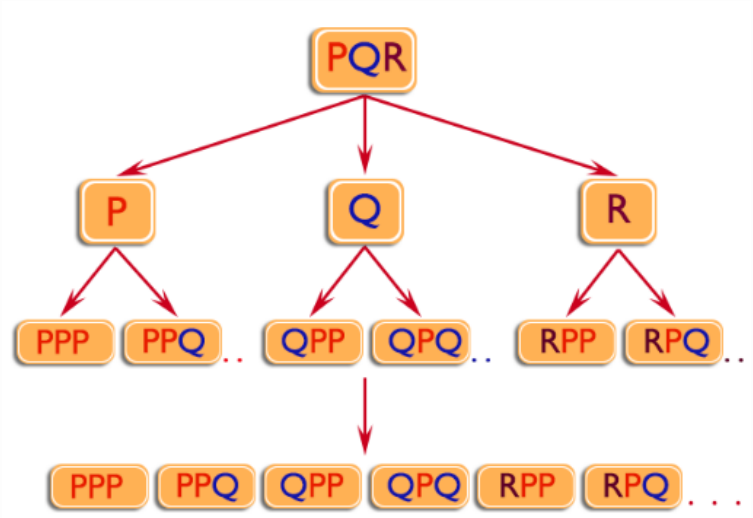
The given string is: PQR
The permuted strings are:
PPP
PPQ
PPR
...
RRP
RRQ
RRR
```



6. Write a java program to reverse each word of string.
e.g. Input- I love my India Output – I evol ym aidnI)

7. Write a java program to find the duplicate words characters in the given paragraph using either String or StringBuffer class methods.

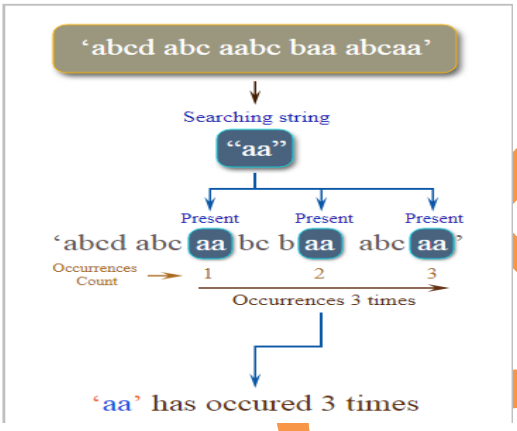
Sample Output:

The given String is : **Graphic Era**
After removing duplicates characters the new string is : **GraphicE**

8. Write a Java program to count the occurrences of a given string in another given string.

Sample Output:

aa' has occured 3 times in 'abcd abc aabc baa abcaa'



9. Write a program that allows the user to enter the names of five candidates in a local election and

the number of votes received by each candidate. The program should then produce the following

output:

(i) Each candidate's name, the number of votes received.

(ii) The percentage of total votes received by each candidates

(iii) Display the Winner of the election.

Sample Output

Candidate Name	Votes Received	Percentage of Total Votes Received
Amit	6000	30%
Anil	7500	33%
Praveen	5500	26%
Sushant	4000	20%
Suhani	2700	10.7%

The Winner Candidate name is : Anil

10. A class **Telcall** calculates the monthly phone bill of a consumer. Some of the members of the class are given below:

Class name:

Data members/instance variable : phno(phone Number), sname(subscriber Name) n(number of calls made) and amt (bill amount).

Member function/methods:

TelCall() : Parameterized constructor to assign values to data members.
Void compute( ) : to calculate the phone bill amount base on the slabs given below.
Void display( ) : to display the details in the specified format.

Number of calls	**Rate**
1 – 100	Rs. 500/- rental charge only
101 – 200	Rs 1.00 per call + rental charge
201-300	Rs. 1.20 per call + rental charge
Above 300	Rs. 1.50 per call + rental charge

11. Design a class to represent bank account. Includes the following members:

- Name of depositor
- Account number
- Type of account
- Balance amount in the account

Methods:

- To assign initial values
- To deposit an amount
- To withdraw an amount after checking balance.
- To display the name and balance.

Write a program to incorporate the constructor to provide initial values, use **this** keyword and also instantiate its object.

12. Write a program to display the information about the student in tabulated form using an array of objects.

13. Package act as a container for classes & other subordinate packages. Because of the interplay between packages & classes, JAVA addresses four categories of visibility for class members given below. What are these categories. Also demonstrate each category with example.

Member Type	**Inside own class**	**Inside subclasses**		**Inside non-subclasses**	
		In the same package	**In other package**	**In the same package**	**In other package**
public	**Y**	**Y**	**Y**	**Y**	**Y**
protected	**Y**	**Y**	**Y**	**Y**	**N**
Default	**Y**	**Y**	**N**	**Y**	**N**
Private	**Y**	**N**	**N**	**N**	**N**

14. Demonstrate all possible use of super keyword in a single program.

15. Write a program to create a class named shape. In this class we have three sub classes circle, triangle and square each class has two member function named draw () and erase (). Create these using runtime polymorphism concepts.

16. Solve the following problem by using runtime polymorphism:

Following tables outlines the major credit cards you might want to validate, along with their allowed prefixes and lengths. Major Credit Cards, Their Prefixes, and Lengths

Card Type	**Prefixes**	**Length**
MasterCard	51–55	16
Visa	4	13,16
American Express	34,37	15

Sample Well-Formed Credit Card Numbers

Card Type	**Sample Number**
MasterCard	5500 0000 0000 0004
Visa	4111 1111 1111 1111
American Express	3400 0000 0000 009

17. Define an exception class called "MyNationException" that is thrown when a string is not equal to "jai hind" or "JAI HIND". Write a program that implements this exception.

18. Demonstrate Checked & Unchecked Exception Propagation.

19. Write a program to calculate the sum of command line argument and also find the invalid integers entered.

20. Create a program to generate two threads, one thread will print odd numbers and second thread will print even numbers between 1 to 20 numbers.

21. Demonstrate the Producer-Consumer problem using the concept of inter thread communication (i.e. multi-threading).

22. Write a program to solve the following problem:
Suppose only one berth is available in a train and two passengers are asking for that berth in two different counters. The clerks at different counters sent a request to the server to allot that berth to their passengers. And only one passenger is eligible to get the berth in a train, another passenger get a message "Sorry Berth unavailable". Solve this problem using **synchronized** keyword.

23. Write a program to create a dictionary from a string. Track the count of the letters from the string.
Sample string : dehradun
Expected output: {"a":1, "d":2,"e":1,"h":1,"n":1,"u":1}

24. Write a program to get the top three items in a shop. Go to the editor

Sample data: {'item1': 45.50, 'item2':35, 'item3': 41.30, 'item4':55, 'item5': 24}
Expected Output:
item4 55
item1 45.5
item3 41.3

25. Write a program to remove duplicates from a list
Sample Input : {**10**,**20**,30,**20**,**10**,50,60}
Expected Output: 10,20,30,50,60

26. Create a Login form having User-Id and Password fields. After submitting the form matches the user-id and password with existing user-id and password. If user-id and password match a welcome message should be appear.

27. Store some country names and their capitals. Ask the user to select a country and its capital from given two lists. If the match is correct, display "Correct answer", otherwise display error message and tell the correct answer.

28. Create a program to count number of character, words and lines in a file.

29. Create a Program to demonstrate Object Serialization and Object De-serialization.

30. Create a program to display the records from employees table who were working in the department as entered by the user.

31. Design an application that display all the records of Department table (DEPT) one by one. As per the snapshot given below: