1. Create arrayList, add the integer elements in arrayList using asList().Remove the duplicate values and return a arrayList containing unique values. Implement the logic inside removeDuplicates() method. Test the functionalities using the main () method of the Tester class.

**Sample Input and Output**---------10, 20, 10, 15,40,15,40 --- 10,20,15,40

1. Given two lists, concatenate the second list in reverse order to the end of the first list and return the concatenated list. Implement the logic inside concatenateLists() method.

listOne = Hello 102 200.8 25

listTwo = 150 40.8 welcome A

**output:** Hello 102 200.8 25 A welcome 40.8 150

1. Find and return the average salary, number of salaries greater than the average salary and number of salaries lesser than the average salary from the salary array passed to the findDetails() method. Method should return a double array containing average salary in index position 0, number of salaries greater than the average salary in index position 1 and number of salaries lesser than the average salary in index position 2. Implement the logic inside findDetails() method. Test the functionalities using the main method of the Tester class. **sample Input:** {23500.0 , 25080.0 , 28760.0 , 22340.0 , 19890.0}

**output:** Average salary: 23914.0

Number of salaries greater than the average salary: 2.0

Number of salaries lesser than the average salary: 3.0

1. Write a Java Program to-
   1. Check that given number is Armstrong or not
   2. Check that given number is palindrome or not
   3. Check that given number is odd or even
   4. Print reverse of a number
2. An educational institution provides stipends for post-graduate students every year. For calculating the stipend, the institution has fixed a base amount of $100 which is provided to all the students. The students who perform exceptionally well during the academics get an extra amount based on their performance. You need to help the institution in developing an application for calculating the stipend by implementing the class using info given below. **Note:** STIPEND is a final variable.

**calculateTotalStipend():-**Calculate and return the total stipend amount based on the aggregate marks of the student using the below table. Implement the getter and setter methods appropriately.

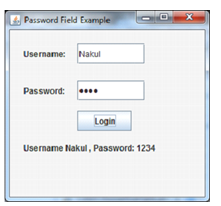
i) Aggregate marks>=85 and <90 then bonus stipend amt is $10

ii) Aggregate marks>=90 and <95 then bonus stipend amt is $15

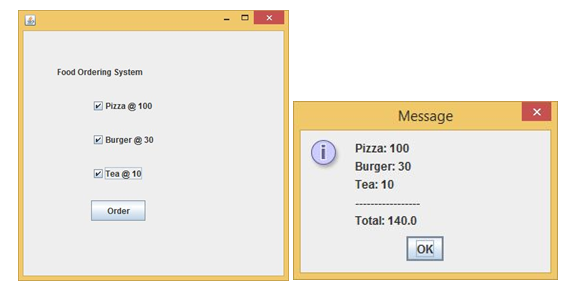
iii) Aggregate marks>=95 and <100 then bonus stipend amt is $20

**sample input:** student ID:1212 aggregate marks :93 **output:** the final stipend of 1212 is $115.0

1. Create Java GUI using Swing. When click on login button, it shows the credential in label as shown in the figure.



1. Create Java GUI using Swing. When click on order button, it shows order details with bill amount in message box as shown in the figure.



1. Write a Java Program to count the number of words in a string using HashMap.

**Input**: Enter String: " This this is is done by Saket Saket ";

{Saket=2, by=1, this=1, This=1, is=2, done=1}

1. a) Write a program to take the input array element and convert all the elements into next prime numbers and display the changed array.

b) Write a java program that takes two positive integers as command-line arguments and prints true if either evenly divides the other.

1. Write a Java Program to iterate ArrayList using for-loop, iterator, and advance for-loop. Insert 3 Array List. **Input** : 20 30 40

**Output:**

**Iterator Loop:** 20 30 40 **Advanced For Loop:** 20 30 40 **for Loop:** 20 30 40

1. a) Write a program that takes three double values X0, V0, and t from the user and prints the valuehttp://thetechpoint.in/img/question/assignment26.PNG, where g is the constant 9.78033. This value is the displacement in meters after t seconds when an object is thrown straight up from initial position x0 at velocity v0 meters per second.

**Sample Output:** Enter the value of X0, V0, and t: 0 2 2

Note: The displacement in meters after t seconds when an object is thrown straight up from initial position X0 at velocity V0 meters per second is: 23.56066

b) Write a program that takes two int values m and d from the command line and prints true if day d of month m is between 3/20 and 6/20, false otherwise.

1. a) Write a program to check if the two strings entered by user are anagrams or not. Two words are said to be anagrams if the letters of one word can be rearranged to form the other word. For example, jaxa and ajax are anagrams of each other.

b) Check whether the string is palindrome without using string methods.

1. Write a Java program to calculate the Factorial of an integer number using both iterative and recursive solutions.
2. Write a program that reads from the user four integers representing the numerators and denominators of two fractions calculates the results of the two fractions and displays the values of the fractions sum, subtraction, multiplication and division. Display output up to two decimal places.

**Sample Input**: Enter the numerator and denominator of the first fraction: 6 4

Enter the numerator and denominator of the second fraction: 8 5

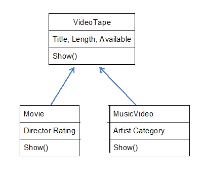
**Output**: The sum is: 3.10

The subtraction is: -0.10

The multiplication is: 2.40

The division is: 0.93

1. Write a program to implement following inheritance. Accept data for 5 persons and display the name of employee having salary greater than 5000. Class Name: Person Member variables: Name, age Class Name: Employee Member variables: Designation, salary.
2. Implementing “Multiple Inheritance”. Create a two interfaces Account containing methods set () and display () And interface Person containing methods store () and disp(). Derive a class Customer from Person and Account. Accept the name, account number, balance and display all the information related to account along with the interest.
3. Write a program to read 10 strings from console and then print the sorted strings on console (Use String Class).2) combine two string 3) reverse first string and display it.
4. Write a program, to implement the following hierarchy. Displays information of each class the rectangle represents the classes. The classes Movie and MusicVideo inherit all the members of the class VideoTape.



1. Create two arrayLists ,add the String elements in arrayList using add().
   1. Add one arraylist into the other from index 1 using appropriate method.
   2. Print the two added list.
   3. Print the index of "Are".
   4. Remove the 4th element from arraylist1
   5. Replace 4 element of arraylist2 as "U"

Test the functionalities using the main() method of the Tester class.

**Sample Input: str1 - ("**Hello", "How", "Are", "You") **str2 - ("**Hi" , "How", "Are" ,You") **Sample Output:** [Hello, Hi, How, Are, You, How, Are, You]

1. Create a new class Order in the Java project with the instance variables and methods mentioned below. **orderId: int , orderedFoods: String, totalPrice: double, status: String , calculateTotalPrice(int unitPrice): double**. Calculate the total price by applying a service charge of 5% on the food item ordered and store it in the instance variable totalPrice. Return the calculated total price. Create an object of the Order class, initialize the instance variables using parameterized constructor, invoke the calculateTotalPrice() method and display the values of the instance variables in the main() method of the Tester class. Use static block to print status "Ordered".

**Sample Output: Order Details:**

Order Id: 101

Ordered Food: Burger

Order status: Ordered

Total Price: 35

1. Create GUI using Swing. As shown in the figure. Write a program to print the text entered in the text field-1 into text field-2 after button click. Display entered text in label below button also.
2. Write a program to handle the custom exception when the number entered by user through keyboard is odd. Use throw and throws keywords. Exception name is OddNumberException. If the number is odd print message "Number is Odd" else print "Number is Even".
3. Calculate and return the sum of all the even numbers present in the numbers array passed to the method calculateSumOfEvenNumbers. Implement the logic inside calculateSumOfEvenNumbers() method. Test the functionalities using the main() method of the Tester class.

**Sample Input :** {68,79,86,99,23,2,41,100} **Sample Output**: 256

**Sample Input :** {1,2,3,4,5,6,7,8,9,10} **Sample Output:** 30

1. Two classes - Camera and DigitalCamera are provided to you. DigitalCamera extends Camera class. Both classes have their parameterized constructors.

Camera Class: private String brand; private double cost;

DigitalCamera Class: private int memory;

Create a instance of child class and display the output as shown below.

**Sample Output:** Nikon, 100$, 16GB

1. Create Calculator GUI using Swing. Use Grid Layout. Add buttons for numbers 0-9 , operators +, -, x, /, =, AC. Display output of operations in textbox.
2. 1) Write a Java program to find the maximum and minimum value of an array

2) Write a Java program to find the second largest element in an array.

3) Take 10 integer inputs from user and store them in an array. Now, copy all the elements in another array but in reverse order.

1. 1) Find Subarray with given sum

**Input:** arr[] = {1, 4, 20, 3, 10, 5}, sum = 33

**Output:** Sum found between indexes 2 and 4

**Explanation:** Sum of elements between indices 2 and 4 is 20 + 3 + 10 = 33

**Input:** arr[] = {1, 4}, sum = 0

**Output:** No subarray found

**Explanation:** There is no subarray with 0 sum

2) Count number of occurrences (or frequency) in a sorted array

**Input:** arr[] = {1, 1, 2, 2, 2, 2, 3,}, x = 1

**Output:** 2

**Input:** arr[] = {1, 1, 2, 2, 2, 2, 3,}, x = 4

**Output:** -1 // 4 doesn't occur in arr[]

1. Create a GUI that has two buttons on it. When clicked, each button creates a new window. The first button creates a window that has a single button on it. Pressing that button will change the window’s background color back and forth between red and green. The second button creates a window that has two buttons. Pressing the first button of these two buttons will change the window’s background color to black. Pressing the second button will change the background color to white. Make sure that your windows will just dispose of themselves when they are closed.
2. Create an abstract class 'Bank' with an abstract method 'getBalance'. $100, $150 and $200 are deposited in banks A, B and C respectively. 'BankA', 'BankB' and 'BankC' are subclasses of class 'Bank', each having a method named 'getBalance'. Call this method by creating an object of each of the three classes.
3. All the banks operating in India are controlled by RBI. RBI has set a well defined guideline (e.g. minimum interest rate, minimum balance allowed, maximum withdrawal limit etc) which all banks must follow. For example, suppose RBI has set minimum interest rate applicable to a saving bank account to be 4% annually; however, banks are free to use 4% interest rate or to set any rates above it.

Write a JAVA program to implement bank functionality in the above scenario and demonstrate the dynamic polymorphism concept. **Note:** Create few classes namely Customer, Account, RBI (Base Class) and few derived classes (SBI, ICICI, PNB etc). Assume and implement required member variables and functions in each class.

**Hint:** Class Customer {

//Personal Details ... // Few functions ...

}

Class Account {

// Account Detail ... // Few functions ...

}

Class RBI { Customer c; //hasA relationship Account a;

//hasA relationship ..

Public double GetInterestRate() { }

Public double GetWithdrawalLimit() { }

}

Class SBI: public RBI {

//Use RBI functionality or define own functionality.

}

Class ICICI: public RBI { //Use RBI functionality or define own functionality. }