

Java Assignments

Assignment 1:

1. Create a class named "Average". Create 4 variables "n1", "n2", "n3", and "n4" and assign different values to them. Print the sum of the 4 numbers and the average of them.

Sample output:

n1 = 5

n2 = 9

n3 = 11

n4 = 1

Sum = 26

Average = 6.5

2. Create a class named "AreaCircle". Create a variable named "r" and assign a value to it. Print the radius, circumference and area of the circle using the assigned value (Area = 3.14 * r * r).

Sample output:

Radius = 6

Circumference = 37.68 units

Area = 113.04 sq. units.

3. Create a class named "AreaTriange". Create variables "s1", "s2", and "s3". Assign them different floating point values. Calculate the semi-perimeter of the triangle using the values ($s = (s1+s2+s3)/2$). Then calculate the area and print it using the heron's formula ($area = \sqrt{s(s - s1)(s - s2)(s - s3)}$).

Sample output:

Side 1: 21.87

Side 2: 17.39

Side 3: 14.11

Semi perimeter = 26.69

Area = 122.68 sq. units.

Assignment 2:

1. Create a class named "simpleInterest". It will have data members like int principal, float rate, int period, and float si. Assign values to the variables principal, rate and period. Have a member function "display()", it displays the values of the member functions. The member function "calculate()", calculates the simple interest and the member function "displaySI()" to display the calculated simple interest.

Sample output:

Principal = Rs. 500000

Rate = 8.85%

Period = 10 years

Simple interest = Rs. 442500

2. Create a class named "arithmeticOperators". It would have data members like int divisor, int dividend, int quotient and int remainder. Put default values to divisor and dividend. Have a member function "calculate()" to calculate the quotient and remainder. Have a member function "display()" to display the values of the data members.

Sample output:

Divisor = 13

Dividend = 111

Quotient ("/") = 8

Remainder ("%") = 7

3. Create a class named "myDiscount". It would have data members like float dressCost = 1200.50, float shoeCost = 650.00, and float bagCost = 855.25. Assign a fractional value to these data members as the cost of the item. It will also have data members like int dressCount, int shoeCount and int bagCount. Assign integer values to these data members as the count of each item purchased.

Create a member function "showList()" which displays the cost of each item and the count of each item side by side. Create a member function "calculateDiscount()" which calculates the total cost, combining the cost of all dresses, shoes and bags, and calculates the discount based on the criteria mentioned below.

If total_cost less than 2500, then no discount;

If total_cost between 2500 and 4000, then 5% discount,

If total_cost between 4000 and 6000, then 7.75% discount,

If total_cost more than 6000, then 10.55% discount

Create a member function "showCost()" which displays the total cost for dresses, shoes and bags. And also displays the total cost combining that of dresses, shoes and bags, the total discount availed and the net cost after the discount is applied.

Sample output:

Dress cost: Rs. 1200.5

Count: 2

Shoe cost: Rs. 650.00 Count: 1
Bag count: Rs. 855.25 Count: 2

Total Dress cost: Rs. 2401.00
Total Shoe cost = Rs. 650.00
Total Bag cost = Rs. 1710.50

Total cost: Rs. 4761.5
Discount = Rs. 369.03
Net Cost = Rs. 4392.47