

# Academy of Technology

Department of Computer Science & Engineering, Semester: 5<sup>TH</sup>

Paper Name: Object Oriented Programming Lab,

Paper Code: PCC-CS593

Laboratory Assignment: 3

## Question 1

Write a class program to accept two numbers as instance variables. Use the following functions for the given purposes:

Class Name — Calculate

void inputdata() — to input both the values

void calculate() — to find sum and difference

void outputdata() — to print sum and difference of both the numbers

Use a main method to call the functions.

## Question 2

Write a program in Java using a class with the following specifications:

Class name: Sort

Data members / instance variables: integer array for 10 numbers.

Member functions:

void arrange(): to display the list of sorted numbers using selection sort.

void search(): to search a given number in the sorted array by using Binary search technique.

## Question 3

Write a class program with the following specifications:

Class Name — Triplet

Data Members — int a, b, c

Member Methods:

void getdata() — to accept three numbers

void findprint() — to check and display whether the numbers are Pythagorean Triplets or not.

## Question 4

Define a class Employee having the following description:

Data Members	Purpose
int pan	To store personal account number
String name	To store name
double taxincome	To store annual taxable income
double tax	To store tax that is calculated
Member functions	Purpose
void input()	Store the pan number, name, taxable income
void cal()	Calculate tax on taxable income
void display()	Output details of an employee

Calculate tax based on the given conditions and display the output as per the given format.

Total Annual Taxable Income	Tax Rate
Up to ₹2,50,000	No tax
From ₹2,50,001 to ₹5,00,000	10% of the income exceeding ₹2,50,000

From ₹5,00,001 to ₹10,00,000	₹30,000 + 20% of the income exceeding ₹5,00,000
Above ₹10,00,000	₹50,000 + 30% of the income exceeding ₹10,00,000

Output:

Pan Number Name Tax-Income Tax

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### Question 5

Define a class Discount having the following description:

Data Members	Purpose
int cost	to store the price of an article
String name	to store the customer's name
double dc	to store the discount
double amt	to store the amount to be paid
Member functions	Purpose
void input()	Stores the cost of the article and name of the customer
void cal()	Calculates the discount and amount to be paid
void display()	Displays the name of the customer, cost, discount and amount to be paid

Write a program to compute the discount according to the given conditions and display the output as per the given format.

List Price	Rate of discount
Up to ₹5,000	No discount
From ₹5,001 to ₹10,000	10% on the list price
From ₹10,001 to ₹15,000	15% on the list price
Above ₹15,000	20% on the list price

Output:

Name of the customer Discount Amount to be paid

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### Question 6

Define a class Telephone having the following description:

Data Members	Purpose
int prv, pre	to store the previous and present meter readings
int call	to store the calls made (i.e. pre - prv)
String name	to store name of the consumer
double amt	to store the amount
double total	to store the total amount to be paid
Member functions	Purpose
void input()	Stores the previous reading, present reading and name of the consumer
void cal()	Calculates the amount and total amount to be paid
void display()	Displays the name of the consumer, calls made, amount and total amount to be paid

Write a program to compute the monthly bill to be paid according to the given conditions and display the output as per the given format.

Calls made	Rate
Up to 100 calls	No charge
For the next 100 calls	90 paise per call
For the next 200 calls	80 paise per call

More than 400 calls	70 paise per call
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However, every consumer has to pay ₹180 per month as monthly rent for availing the service.

Output:

Name of the customer    Calls made    Amount to be paid

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### Question 7

Define a class Interest having the following description:

Data Members	Purpose
int p	to store principal (sum)
int r	to store rate
int t	to store time
double interest	to store the interest to be paid
double amt	to store the amount to be paid
Member functions	Purpose
void input()	Stores the principal, rate, time
void cal()	Calculates the interest and amount to be paid
void display()	Displays the principal, interest and amount to be paid

Write a program to compute the interest according to the given conditions and display the output.

Time	Rate of interest
For 1 year	6.5%
For 2 years	7.5%
For 3 years	8.5%
For 4 years or more	9.5%

(Note: Time to be taken only in whole years)