

Object Oriented Programming Lab

Module-V

1. Create an abstract class Shape which calculate the area and volume of 2-d and 3-d shapes with abstract methods `getArea()` and `getVolume()`.
Reuse this class to calculate the area and volume of square, circle, cube and sphere.

2. Create an abstract class Employee with abstract method `getAmount()` which displays the amount paid to employee.
Reuse this class to calculate the amount to be paid to `WeeklyEmployees` and `HourlyEmployees` according to no. of hours and total hours for `HourlyEmployee` and no. of weeks and total weeks for `WeeklyEmployee`.

3. Create an interface Vehicle with methods `getCompany()`, `getModel()`, `getType()` (Petrol/Diesel/CNG) and `getConsumption()`, display Company and Model, type and calculate the fuel consumed by Two wheelers and Four Wheelers by implementing interface Vehicle.

Note : Mileage for 4-wheeler is 14km/Ltr(petrol), 22km/Ltr(Diesel), 18km/kg(CNG). And for 2- wheeler is 62km/Ltr(petrol) 82km/ltr(Diesel), 72km/ltr (cng).

4. Create an Interface Fare with methods `getFare()`, `getAmenities()` to get the amount paid for Travelling and Amenities provided in journey. Calculate the fare paid and Amenities provided in Bus, Train and Flight implementing interface Fare.

Note :The Fare per Kilometer is different for Road and Rail and airways and even the fare changes as per type of Bus (A/c, Non A/c, sleeper, semi sleeper etc.,) Train(General, Sleeper, A/c), Flight (Economy/Business class) . Make necessary assumptions on distance travelled etc.,.

5. Implement the following case study.

RBI governs and formulates rules and regulations for SBI, HDFC and DCB Banks.

Rules framed by RBI:

i. All banks should facilitate `credit()`, `debit()`, `displayBalance()`, `PersonalLoanEligibility()`, `homeLoanEligibility()`, `vehicleLoanEligibility()` to customers.

ii. credit(),debit() and displayBalance() are common for all Banks where as rest of functionalities changes with respect to Banks.

iii. Make necessary assumptions on Loan eligibilities like Loan eligibility changes as per his/her annual income, type of job(gvt/private), it depends on his property and medical fitness etc.,