

## Topic: Classes and Objects

- 1 Flowers come in colors (red,white,purple).They have a name.They come in different sizes (small and big).

a Which is the class and what are the attributes of the Class.

How do You Instantiate Flower Objects.

Write a main method to test the above.

- 2 A Necklace consists of many pearls of red,blue or green color.Pearl comes in three sizes small,medium or large,two shapes round or square.

A necklace is created with one pearl initially,then pearls are added to it depending on the requirement.

Write the following methods:

void add(Pearl p) -- that adds a pearl to the Neckalace.

int getPearlCount() -- returns number of pearls in the necklace.

void displayDetails() – that displays the complete details of the pearls in the necklace.

Design Classes for the same .

Write a sample implementation.

<hint: Necklace class contains an array of pearls>

3

Bank case Study.

A Customer goes to a bank to open an account.He fills in his personal details like name,address,email,telephono,mobileneno and submits.A confirmation is given , by generating a customer code.

Later on bank creates a new account with the available customer details and adds this to its database,and various services like deposit,withdrawal,CreateStatement etc are are provided.

- 1 Design classes for the application and show their relationships in a class diagram.

- 2 Create classes and add functionalities to the Bank
  - a) boolean createNewAccount(Account newAccount);
  - b) boolean Deposit(int accountno,double amount);
  - c) boolean withdraw(int accountno,double amount);
  - d) boolean createStatement(int accountno);
- 3 Test the above application with a Client program.

Validations:

- 1 account number and customerid has to be auto generated.
- 2 Withdraw can be made only if balance is 1000rs and above.
- 3 Define constructors, getters and setters as required.

**Additional case studies for practice:**

- 1 Create a class Book with bookId,title,author as fields.  
define a default constructor and a parameterized constructor  
to assign the required values.  
define setters/getters.

Create a class Store that stores a collection of Books.

Add methods in the Store Class to perform the following:

- A Add a new Book to the list.
  - B Delete a book from the list.
  - C Display all books;
  - D Display a particular book
  - E Update a Book.(only title and author can be changed)
- test the above by writing a main method.

2 An application for Online used cars selling portal has to be created.where in a customer first signup with (name,address,email,telephone etc) details.He is registered with a customerid and password.Customer can bid for a car by entering his customerid /password.Once the bidding time is over,the car is sold to the customer who bids the least.

Design the classes, with appropriate attributes and methods.and show the relationship

