**Assignment#4 Wednesday Group (4.00 -6.00 PM)**

Q1. Suppose we want to model a library which contains many kinds of items:

* Printed: books, journals, magazines, and documents;
* Multimedia: vinyl, tapes, CDs, and DVDs.

Every item in the library must have an ID number and title. Every printed item must have a number of pages, and every multimedia item must have a length, in seconds.

Develop class hierarchy in Java and main program to test your classes.

Q2. **Two water Jug problem**

Assume that you are a milk seller. You are given two jug of capacity ***P*** liter and a ***Q*** liter jug where **0 < *P* < *Q*** . Both the jugs are initially empty. The jugs don’t have markings to allow measuring smaller quantities. Now suppose we want to measure ***d*** liters of milk where ***d < Q*** .

Determine the minimum no of operations to be performed to obtain ***d*** liters of milk in one of jug. The operations you can perform are:

1. Empty a Jug
2. Fill a Jug
3. Pour water from one jug to the other until one of the jugs is either empty or full.