

**LAB # 11**  
**OPEN ENDED LAB**

**Note: Understanding the question is the part of lab (as it is open ended lab)**

The Account department of the company needs an object oriented solution to maintain the account details of its clients. Each account has an account title (name of account holder), serial number, a unique account number and a balance. Transactions that can be made are credit and debit. The debit function also needs to ensure that the withdrawn amount does not exceed to available balance in the account of a client. At the end of year the bank credits each account with an interest and the amount of interest is a function of the type of account (to be discussed below).

There could be two distinct types of accounts in the department, Plus account and freedom account. A **Plus account** requires clients to maintain a minimum balance and applies a fixed interest of  $X\%$  at the end of each year. The percentage of interest is determined at the start of each year.

The **freedom account** does not require any minimum balance but charges a fixed fee for every transaction (debit, credit) that is performed. So every time a transaction is performed the fee is deducted from the balance. The interest on freedom accounts is a fixed amount (not a percentage) that is determined at the start of each year. This amount is added to the balance as an interest.

You need to provide classes to implement the functionality discussed above. You may define a class `Account` and inherit `PlusAccount` and `FreedomAccount` from `Account`. Function overriding/polymorphism may also be handy. After defining the classes in this hierarchy, write a program with an array of 10 pointers to `Accounts`. Create 5 accounts using dynamic memory allocation by getting user choice for the type of account. For the first account, perform some transactions like debit, credit, interest and finally display the balance in this account.