2. Write a class in java which store the marks of 3 subject of a student. Provide methods to set the marks and get the values of the marks. Also provide a method called getResults(), which prints the grade of the student. Grade is calculated as shown in the table given below.

|  |  |
| --- | --- |
| **Average of 3 Subject** | **Grade** |
| 80 to 100 | A |
| 65 to 79 | B |
| 50 to 64 | C |
| 40 to 49 | D |
| 0 to 39 | E |

3) Create a class Medicine to represent a drug manufactured by a pharmaceutical company. Provide a function displayLabel() in this class to print Name and address of the company.

Derive Tablet, Syrup and Ointment classes from the Medicine class. Override the displayLabel() function in each of these classes to print additional information suitable to the type of medicine. For example, in case of tablets, it could be “store in a cool dry place”, in case of ointments it could be “for external use only” etc.

Create a class TestMedicine . Write main function to do the following:

Declare an array of Medicine references of size 3

Create a medicine object of the type as decided by a randomly generated integer in the range 0 to 2.

Refer Java API Documentation to find out random generation feature.

Check the polymorphic behavior of the displayLabel() method.

4) Create a class with following specifications.

Class Emp

empId int

empName string

designation string

basic double

hra double readOnly

Methods

printDET()

calculateHRA()

printDET() methods will show details of the EMP.

calculateHRA() method will calculate HRA based on basic.

There will 3 designations supported by the application.

If designation is “Manager” - HRA will be 10% of BASIC

if designation is “Officer” - HRA will be 12% of BASIC

if category is “CLERK” - HRA will be 5% of BASIC

Have constructor to which you will pass, empId, designation, basic and price.

And checks whether the BASIC is less than 500 or not. If it is less than 500 raise a custom Exception as given below

Create LowSalException class with proper user message to handle BASIC less than 500.

5) Create a class BankAccount having the members as given below:

accNo integer

custName string

accType string (indicates ‘Savings’ or ‘Current’)

balance float

Include the following methods in the BankAccount class:

void deposit(float amt);

void withdraw(float amt);

float getBalance();

deposit(float amt) method allows you to credit an amount into the current balance. If amount is negative, throw an exception NegativeAmount to block the operation from being performed.

withdraw(float amt) method allows you to debit an amount from the current balance. Please ensure a minimum balance of Rs. 1000/- in the account for savings account and Rs. 5000/- for current account, else throw an exception InsufficientFunds and block the withdrawal operation. Also throw an exception NegativeAmount to block the operation from being performed if the amt parameter passed to this function is negative.

getBalance() method returns the current balance. If the current balance is below the minimum required balance, then throw an exception LowBalanceException accordingly.

Have constructor to which you will pass, accno, cust\_name, acctype and initial balance.

And check whether the balance is less than 1000 or not in case of savings account and less than 5000 in case of a current account. If so, then raise a LowBalanceException.

In either case if the balance is negative then raise the NegativeAmount exception accordingly