Programming Assignment

What you need to do:

Account class:

- You will need to modify the constructors in Account class – they will no longer have an acctType argument. You will not need to store this value as an instance variable any longer.

- Add the following method in the Account class. So you need to change Account class to **abstract class**.

- **abstract public** AccountType getAcctType();

- Implement three subclasses of Account: CheckingAccount, SavingsAccount, and RetirementAccount. Just provide the relevant value in the getAcctType() method of each subclass.

- We now add the following 3 requirements for managing Accounts:
  a) when balance is read for checking account, a $5 monthly service charge will be subtracted
  b) when a withdrawal is made from a retirement account, a 2% penalty is applied to the balance
  c) when balance is read for savings, a 0.25% monthly interest rate is applied

Employee class:

```
public class Employee {

//Comment the following three Account variables
        private Account savingsAcct;
        private Account checkingAcct;
        private Account retirementAcct;

//Add the newly created variable called accounts which is the list of Account.
        private List<Account> accounts;

}
```

- Implement getter method for a list of account types in Employee

- Modify the following code. Keep these methods but change their implementation by adding the newly created Account objects to the List of Account called `accounts`.

```
public void createNewChecking(double startAmount) {
checkingAcct = new Account(startAmount, AccountType.CHECKING, this);}

public void createNewSavings(double startAmount) {
savingsAcct = new Account(startAmount, AccountType.SAVING, this);}

public void createNewRetirement(double startAmount) {
retirementAcct = new Account(startAmount, AccountType.RETIREMENT, this);}
```

- Improve this by changing the signature of deposit to
  Public void deposit(int accountIndex, double amt)
  The deposit can then be accomplished by these lines:
  Account selected = accounts.get(accountIndex);
  selected.makeDeposit(amt); *//(Notice the nice use of polymorphism here.)*

- Similar changes should be made to the Employee withdraw method.

- Fix the getFormattedAccInfo method.

Main class:
When the application starts, the User should see:

```
A. See a report of all accounts.
B. Make a deposit.
C. Make a withdrawal.
Make a selection (A/B/C):
```

If A is selected, then output the formatted report that you generated for Prog3-2.
If B is selected, the User should then interact with the system as in the following:

```
A. See a report of all accounts.
B. Make a deposit.
C. Make a withdrawal.
Make a selection (A/B/C): B

0. Jim Daley
1. Bob Reuben
2. Susan Randolph
Select an employee: (type a number) 2

0. checking
1. savings
2. retirement
Select an account: (type a number) 1

Deposit amount: 300.00
```

After the deposit is made, the User should see:

```
$300.0 has been deposited in the
savings account of Susan Randolph
```

The same sequence of prompts as above should occur if the User initially selects C instead of B.