

## 2. Answer the following questions in a pdf file:

**a. Come up with a good name for class Coin in problem 1**

Coin is a good name for the coin class because it describes exactly what the object is.

**b. What is the relationship between class Coin and class Register?**

Aggregation because a Coin is a part of a Register

**c. What is an immutable class?**

An immutable class is a class that once an object of that class is defined its content cannot be changed.

**d. What is an advantage of immutable class?**

Immutable class are easier to design and implement because they do not change

**e. What is a side effect of a method?**

A side effect of a method is that the method modifies some state variable value/arguments passed having a consequence beyond its scope,

**f. Consider this example:**

```
public double getTotalBalance(ArrayList<BankAccount> accounts)
{
    double sum = 0;
    while (accounts.size() > 0)
    {
        BankAccount account = accounts.remove(0);
        sum = sum + account.getBalance();
    }
    return sum;
}
```

**What is the problem with the method getTotalBalance();**

This method adds up the sum correctly; however it removes all the objects (the accounts) from the arraylist it takes in which is a side effect of the method. We want to avoid side effects.