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Report for SIS2

1. In the first problem I created an abstract Circuit with 3 variables and 2 methods. Then I created 3 subclasses (Resistor, Series and Parallel). In Resistor class I have 2 specific fields: r (resistance) and potentialDifference. I have get and set methods in this subclass. Next subclass is Series, where I have methods to find resistance and potential difference for a and b circuits. And I override method applyPotentialDiff(), using Ohms law.

**public** **void** applyPotentialDiff(**double** V) {

**double** current = V / getResistance();

a.applyPotentialDiff(current \* a.getResistance());

b.applyPotentialDiff(current \* b.getResistance());

}

Parallel class has the same methods, except using formulas for parallel connection in a circuit.

1. In second task I created superclass Account with main deposit(), withdraw(), transfer(), toString(), print() and get methods. Second class Bank has a vector of Accounts and 2 methods to open or close account. In SavingAccount subclass exists specific variable interestRate, that is an percent that account has from the bank.

**public** **void** addInterest() {

deposit(getBalance() \* (interestRate/100));

}

We run method deposit from the superclass to add this savings to the balance. In sublclass CheckingAccount we have specific fields cnt(all transactions) and freeTr(free transactions). In method deductFee() we check how much bank should substract for the tranactions.

**public** **void** deductFee() {

**if** (freeTr > cnt)

cnt = 0;

**else** {

**int** a = cnt - freeTr;

withdraw(a\*commission);

}

}

1. In third task I have an abstract class MyCollection with all methods. In class MyVector we write an algorithm for each method. For example, methods for adding an element to a vector or deleting specific element, printing index of this element or remover and etc.

**public** **void** removeAll (**int** element) {

**for** (**int** i = 0; i < size; i++) {

**if** (vector[i] == element) {

removeElementAt (i);

}

} }