JAVA LAB-4

Create a simple banking system for a small bank. Each bank customer has an account with a unique account number, name, and balance. The bank also wants to keep track of:
1. How many total accounts have been created.
2. The interest rate (same for all accounts).
3. Methods to withdraw, deposit and compute simple interest on a given account

CODE:

```java
class BankAccount{
    String accountNumber;
    String customerName;
    double balance;
    static int accountCount = 0;
    static double interestRate;
static{
    interestRate = 4.5;
    System.out.println("Static block:Initial rate set to"+ interestRate+"%");
}
BankAccount(String accountNumber,String customerName,double initialBalance) {
    this.accountNumber = accountNumber;
    this.customerName = customerName;
    this.balance = initialBalance;
    accountCount++;
}
void deposit(double amount){
    if(amount > 0) {
        balance += amount;
    } else {
        System.out.println("Cannot deposit non-positive amount:"+ amount);
    }

}
void withdraw(double amount){
    if (amount <=0) {
        System.out.println("Cannot withdraw non-positive amount:"+amount);
    }else if (amount > balance){
        System.out.println("Insufficient balance.Requested:"+amount+",Available:"+balance);
    }else{
        balance -= amount;
    }
}
void addInterest(double years){
```

```java
class BankAccount{
void addInterest(double years){
        return;
    }
    double r = interestRate/100.0;
    balance += balance*r*years;
}
static void changeInterestRate(double newRate){
    if (newRate < 0){
        System.out.println("Interest rate cannot be negative:"+ newRate);
    }else {
        interestRate= newRate;
    }
}
static int getAccountCount(){
    return accountCount;
}
static double getInterestRate(){
    return interestRate;
}
void displayDetails(){
    System.out.println("Account Number:"+accountNumber+"|Customer Name:"+"|Balance:"+String.format(format:"%.2f",balance));
}
class BankStatic{
    public static void main(String[] args){
        System.out.println(x:"Creating bank accounts. . .");
        BankAccount acc1 = new BankAccount(accountNumber:"ACC1001",customerName:"Ram",initialBalance:1000.0);
        BankAccount acc2 = new BankAccount(accountNumber:"ACC1002",customerName:"Sita",initialBalance:2000.0);
        BankAccount acc3 = new BankAccount(accountNumber:"ACC1003",customerName:"Laxman",initialBalance:1500.0);
        System.out.println();
        System.out.println("Number of accounts created:"+ BankAccount.getAccountCount());
        System.out.println(x:"Initial account details:");
        acc1.displayDetails();
        acc2.displayDetails();
```

```java
        System.out.println("Adding interest based on interest rate ="+BankAccount.getInterestRate()+"%");
        acc1.addInterest(years:0.5);
        acc2.addInterest(years:1.0);
        acc3.addInterest(years:1.5);

        System.out.println(x:"Balance after Interest:");
        acc1.displayDetails();
        acc2.displayDetails();
        acc3.displayDetails();

        System.out.println(x:"\n Changing interest rate to 5.5%");
        BankAccount.changeInterestRate(newRate:5.5);
        System.out.println("Now interest Rate:"+ BankAccount.getInterestRate()+"%");

        System.out.println(x:"Adding interest again with new rate:");
        acc1.addInterest(years:0.5);
        acc2.addInterest(years:1.0);
        acc3.addInterest(years:1.5);

        System.out.println(x:"Final Balance:");
        acc1.displayDetails();
        acc2.displayDetails();
        acc3.displayDetails();

}
```

OUTPUT:

```
Creating bank accounts. . .
Static block:Initial rate set to4.5%

Number of accounts created:3
Initial account details:
Account Number:ACC1001|Customer Name:|Balance:1000.00
Account Number:ACC1002|Customer Name:|Balance:2000.00
Account Number:ACC1003|Customer Name:|Balance:1500.00
Adding interest based on interest rate =4.5%
Balance after Interest:
Account Number:ACC1001|Customer Name:|Balance:1022.50
Account Number:ACC1002|Customer Name:|Balance:2090.00
Account Number:ACC1003|Customer Name:|Balance:1601.25

 Changing interest rate to 5.5%
Now interest Rate:5.5%
Adding interest again with new rate:
Final Balance:
Account Number:ACC1001|Customer Name:|Balance:1050.62
Account Number:ACC1002|Customer Name:|Balance:2204.95
Account Number:ACC1003|Customer Name:|Balance:1733.35
```