4) write a Java Programing to create a banking system with three classes. Bank account Savings Account, and Current Account the bonk should have al is to of accounts and methals for adding them. Account Should be an interfa -ce with methods to deposit withdraw calculate interest, and view balance, Sovings Account and Current Account should implement the Account interface and have their unique methods.

PROGRAM:

```
import java.util.ArrayList;
import java.util.List;
interface Account {
void deposit(double amount);
void withdraw(double amount);
void calculateInterest();
double viewBalance();
}
abstract class BankAccount implements Account {
protected double balance;
public BankAccount(double initialBalance) {
this.balance = initialBalance;
}
@Override
public void deposit(double amount) {
balance += amount;
}
@Override
public void withdraw(double amount) {
if (amount <= balance) {
balance -= amount;
} else {
System.out.println("Insufficient funds");
} }
@Override
public double viewBalance() {
return balance;
}
@Override
public abstract void calculateInterest();
}
class SavingsAccount extends BankAccount {
private static final double INTEREST_RATE = 0.05; // 5% annual
interest rate
public SavingsAccount(double initialBalance) {
super(initialBalance);
}
@Override
```

```
public void calculateInterest() {
balance += balance * INTEREST_RATE;
}
}
class CurrentAccount extends BankAccount {
private static final double OVERDRAFT_LIMIT = 500.0;
public CurrentAccount(double initialBalance) {
super(initialBalance); }
@Override
public void withdraw(double amount) {
if (amount <= balance + OVERDRAFT_LIMIT) {
balance -= amount;
} else {
System.out.println("Overdraft limit exceeded");
}
}
@Override
public void calculateInterest() {
// Current accounts do not earn interest
}
}
class Bank {
private List<Account> accounts = new ArrayList<>();
public void addAccount(Account account) {
accounts.add(account);
}
public void displayBalances() {
for (Account account : accounts) {
System.out.println("Balance: " + account.viewBalance());
} }
}
public class BankingSystem {
public static void main(String[] args) {
Bank bank = new Bank();
SavingsAccount savingsAccount = new SavingsAccount(1000);
CurrentAccount currentAccount = new CurrentAccount(500);
bank.addAccount(savingsAccount);
bank.addAccount(currentAccount);
savingsAccount.deposit(200);
currentAccount.withdraw(100);
savingsAccount.calculateInterest();
currentAccount.calculateInterest();
bank.displayBalances();
}
}
```

OUTPUT: