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Homework: Encapsulation

BankAccount example of encapsulation:

BankAccount class:

```
package encapsulation;

public class BankAccount {

    // Private variables (encapsulated)
    private String accountNumber;
    private double balance;
    private String accountHolder;

    // Public constructor
    public BankAccount(String accountNumber, double balance, String accountHolder) {
        this.accountNumber = accountNumber;
        this.balance = balance;
        this.accountHolder = accountHolder;
    }

    // Public getter methods to access private variables (encapsulation)
    public String getAccountNumber() {
        return accountNumber;
    }

    public double getBalance() {
        return balance;
    }

    public String getAccountHolder() {
        return accountHolder;
    }
}
```

```

    }

    // Public method to deposit money
    public void deposit(double amount) {
        if (amount > 0) {
            balance += amount;
            System.out.println("Deposit of Rs." + amount + " successful.
New balance: Rs." + balance);
        } else {
            System.out.println("Invalid deposit amount.");
        }
    }

    // Public method to withdraw money
    public void withdraw(double amount) {
        if (amount > 0 && amount <= balance) {
            balance -= amount;
            System.out.println("Withdrawal of Rs." + amount + " successful.
New balance: Rs." + balance);
        } else {
            System.out.println("Invalid withdrawal amount or insufficient
funds.");
        }
    }
}

```

Main class:

```

package encapsulation;
public class TestBankAccount{
    public static void main(String[] args) {
        // Creating an instance of BankAccount
    }
}

```

```
BankAccount myAccount = new BankAccount("123456789",
1000.0, "John Doe");

// Accessing encapsulated data through getter methods
System.out.println("Account Number: " +
myAccount.getAccountNumber());
System.out.println("Account Holder: " +
myAccount.getAccountHolder());
System.out.println("Balance: Rs." + myAccount.getBalance());

// Performing transactions
myAccount.deposit(500.0);
myAccount.withdraw(200.0);
}
}
```