

Assignment6 of Xiaowei Liu

```
>>>>>>>>>>
Create a SalesAgent
Please enter First Name:
Xiaowei1
Please enter Last Name:
Liu
Please enter PPS Number:
123
Please enter Sales Amount:
100
>>>>>>>>>>
Create a SalesAgent
Please enter First Name:
Xiaowei2
Please enter Last Name:
Liu
Please enter PPS Number:
234
Please enter Sales Amount:
200
>>>>>>>>>>
Create a SalesPerson
Please enter First Name:
Xiaowei3
Please enter Last Name:
Liu
Please enter PPS Number:
345
Please enter Sales Amount:
300
>>>>>>>>>>
SalesEmpolyee{firstName='Xiaowei1', lastName='Liu', ppsNumber='123', commission=10.0}
SalesEmpolyee{firstName='Xiaowei2', lastName='Liu', ppsNumber='234', commission=20.0}
SalesEmpolyee{firstName='Xiaowei3', lastName='Liu', ppsNumber='345', commission=45.0}
Total of all sales: 600
```

Main.java

```
import java.util.LinkedList;
import java.util.*;

// Main class
public class Main {

    public static void main(String[] args) {
        int totalSales = 0;
        // Create a list to store SalesEmployee objects
        List<SalesEmpolyee> employeeList = new LinkedList<SalesEmpolyee>();

        System.out.println(">>>>>>>>>>");
        System.out.println("Create a SalesAgent");
        // Create a SalesAgent instance and add it to the list
        employeeList.add(create(1));
```

```

        System.out.println(">>>>>>>>>>");
        System.out.println("Create a SalesAgent");
        // Create another SalesAgent instance and add it to the list
        employeeList.add(create(1));

        System.out.println(">>>>>>>>>>");
        System.out.println("Create a SalesPerson");
        // Create a SalesPerson instance and add it to the list
        employeeList.add(create(0));

        System.out.println(">>>>>>>>>>");

        // Loop through the list, print information about each sales employee, and accumulate total sales
        for (int i = 0; i < employeeList.size(); i++) {
            System.out.println(employeeList.get(i).toString());
            totalSales += employeeList.get(i).sales;
        }

        // Print the total sales
        System.out.println("Total of all sales: " + totalSales);
    }

    // Method to create a SalesEmployee instance
    public static SalesEmployee create(int flag) {
        Scanner scanner = new Scanner(System.in);

        System.out.println("Please enter First Name: ");
        String firstName = scanner.nextLine();

        System.out.println("Please enter Last Name: ");
        String lastName = scanner.nextLine();

        System.out.println("Please enter PPS Number: ");
        String pps = scanner.nextLine();

        System.out.println("Please enter Sales Amount: ");
        double salesAmount = scanner.nextDouble();

        // Create a SalesAgent or SalesPerson instance based on the flag
        SalesEmployee person = (flag == 1) ? new SalesAgent(firstName, lastName, pps) : new SalesPerson(firstName, lastName, pps);

        // Set the sales amount and calculate the commission
        person.sales = salesAmount;
        person.calculateCommission();

        return person;
    }
}

// SalesAgent class, extends SalesEmployee
class SalesAgent extends SalesEmployee {
    public SalesAgent() {
    }

    public SalesAgent(String firstName, String lastName, String ppsNumber) {
        super(firstName, lastName, ppsNumber);
    }

    // Override the calculateCommission method
    @Override
    void calculateCommission() {
        // Calculate commission based on sales amount (10%)
        this.commission = this.sales * 0.1;
    }
}

// SalesPerson class, extends SalesEmployee
class SalesPerson extends SalesEmployee {
    public SalesPerson() {
    }

    public SalesPerson(String firstName, String lastName, String ppsNumber) {
        super(firstName, lastName, ppsNumber);
    }
}

```

```

    }

    // Override the calculateCommission method
    @Override
    void calculateCommission() {
        // Calculate commission based on sales amount (15%)
        this.commission = this.sales * 0.15;
    }
}

```

SalesEmpolyee.java

```

// Abstract class representing a sales employee
abstract class SalesEmpolyee {
    String firstName;           // First name of the employee
    String lastName;           // Last name of the employee
    static int bikeEmployeeNumber; // Static variable for a shared employee number for bike
    String ppsNumber;          // PPS (Personal Public Service) number of the employee
    double sales;              // Sales made by the employee
    double commission;         // Commission earned by the employee
    int employeeNumber;        // Employee number for identification

    // Default constructor
    public SalesEmpolyee() {
    }

    // Parameterized constructor to initialize basic information
    public SalesEmpolyee(String firstName, String lastName, String ppsNumber) {
        this.firstName = firstName;
        this.lastName = lastName;
        this.ppsNumber = ppsNumber;
    }

    // Setter methods to update employee information
    public void setFirstName(String firstName) {
        this.firstName = firstName;
    }

    public void setLastName(String lastName) {
        this.lastName = lastName;
    }

    public void setPPS(String ppsNumber) {
        this.ppsNumber = ppsNumber;
    }

    // Getter methods to retrieve employee information
    public String getFirstName() {
        return firstName;
    }

    public String getLastName() {
        return lastName;
    }

    public String getPPS() {
        return ppsNumber;
    }

    public int getEmployeeNumber() {
        return employeeNumber;
    }

    // Override toString method to provide a string representation of the object
    @Override
    public String toString() {
        return "SalesEmpolyee{" +
            "firstName='" + firstName + '\'' +
            ", lastName='" + lastName + '\'' +
            ", ppsNumber='" + ppsNumber + '\'' +

```

```
        ", commission=" + commission +  
        '}}';  
    }  
  
    // Abstract method to be implemented by subclasses for commission calculation  
    abstract void calculateCommission();  
}
```