

1)

```
import java.util.Scanner;
```

```
abstract class Employee    {  
  
    String name;  
    String employee;  
  
    Employee(String name, String employee)    {  
        this.name = name;  
        this.employee = employee;  
    }  
  
    abstract int calculatePay();  
  
    String getEmployeeDetails() {  
        return name + " is paid" + employee;  
    }  
}
```

```
class HourlyEmployee extends Employee    {  
  
    int workedHours;  
    int rate;  
    String name;  
  
    HourlyEmployee(String name, int rate, int workedHours)    {  
        super(name, "Hourly");  
        this.name = name;  
        this.rate = rate;  
    }  
  
    int calculatePay()    {  
        return rate * workedHours;  
    }  
}
```

```
class SalaryEmployee extends Employee    {  
  
    int salary;  
    int rate;  
    String name;  
  
    SalaryEmployee(String name, int salary)    {
```

```

        super(name, "Monthly");
        this.name = name;
        this.salary = salary;
    }

    int calculatePay()    {
        return salary;
    }
}

public class Sample {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        while(true)    {
            System.out.println("What type of employee are you?");
            System.out.println("1. Hourly paid");
            System.out.println("2. Salaried");
            System.out.println("3. Quit");
            int choice = sc.nextInt();

            if(choice == 3) return;

            System.out.println("Enter your name");
            String name = sc.nextLine();
            switch(choice) {
                case 1:
                    System.out.println("Enter the hourly rate: ");
                    int rate = sc.nextInt();
                    System.out.println("Enter the hours worked: ");
                    int hoursWorked = sc.nextInt();
                    Employee hem = new HourlyEmployee(name, rate,
hoursWorked);

                    System.out.println(hem.calculatePay());
                    break;

                case 2:
                    System.out.println("Enter your salary: ");
                    int salary = sc.nextInt();
                    Employee sem = new SalaryEmployee(name, salary);
                    System.out.println(sem.calculatePay());
                    break;

                default:
                    System.out.println("Please enter a valid input");

```

```

        }
    }
}

```

2)

```
import java.util.Scanner;
```

```

abstract class Product    {

    int cost;
    int quantity;

    Product(int cost, int quantity) {
        this.cost = cost;
        this.quantity = quantity;
    }

    abstract int getPrice();

    abstract String getDescription();

}

```

```

class ElectronicProduct extends Product    {

    ElectronicProduct(int cost, int quantity)    {
        super(cost, quantity);
        this.cost = cost;
        this.quantity = quantity;
    }

    int getPrice() {
        return cost * quantity;
    }

    String getDescription()    {
        return "This is an electronic product";
    }

}

```

```

class ClothingProduct extends Product    {

    ClothingProduct(int cost, int quantity){
        super(cost, quantity);
    }

    int getPrice() {
        return cost * quantity;
    }

    String getDescription()    {
        return "This is a clothing product";
    }

}

```

```

class BookProduct extends Product {

    BookProduct(int cost, int quantity)    {
        super(cost, quantity);
    }

    int getPrice() {
        return cost * quantity;
    }

    String getDescription()    {
        return "This is book product";
    }

}

```

```

public class Sample    {

    static int getElectronicProduct()    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the cost of the electronic product");
        int cost = sc.nextInt();

        System.out.println("Enter the quantity of the electronic product");
        int quantity = sc.nextInt();
    }
}

```

```

        Product ep = new ElectronicProduct(cost, quantity);
        System.out.println(ep.getDescription());
        return ep.getPrice();
    }

    static int getClothingProduct()    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the cost of the clothing product");
        int cost = sc.nextInt();

        System.out.println("Enter the quantity of the clothing product");
        int quantity = sc.nextInt();

        Product cp = new ClothingProduct(cost, quantity);
        System.out.println(cp.getDescription());
        return cp.getPrice();
    }

    static int getBookProduct()    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the cost of the book product");
        int cost = sc.nextInt();

        System.out.println("Enter the quantity of the book product");
        int quantity = sc.nextInt();

        Product bp = new BookProduct(cost, quantity);
        System.out.println(bp.getDescription());
        return bp.getPrice();
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        while(true)    {
            System.out.println("Welcome to supermarket");
            int totalPrice = 0;

```

```
System.out.println("Are you buying electronic products? (y/n)");
char ch = sc.next().charAt(0);
if(ch == 'y')    totalPrice += getElectronicProduct();
```

```
System.out.println("Are you buying clothing products? (y/n)");
ch = sc.next().charAt(0);
if(ch == 'y')    totalPrice += getClothingProduct();
```

```
System.out.println("Are you buying book products? (y/n)");
ch = sc.next().charAt(0);
if(ch == 'y')    totalPrice += getBookProduct();
```

```
System.out.println("Your total bill is: " + totalPrice);
```

```
System.out.println("Do you want to continue?");
ch = sc.next().charAt(0);
```

```
if(ch == 'n')    return;
```

```
}
```

```
}
```

```
}
```

3)

```
package ZSGS;
```

```
abstract class Movie {
```

```
    String directorName;
```

```
    String movieName;
```

```
    String movieLang;
```

```
    Movie(String movieName, String movieLang)    {
```

```
        this.movieName = movieName;
```

```
        this.movieLang = movieLang;
```

```
    }
```

```
    abstract String movieDescription();
```

```
    abstract String getDirector();
```

```
}
```

```
class HorrorMovie extends Movie    {
```

```

    HorrorMovie(String movieName, String movieLang, String directorName) {
        super(movieName, movieLang);
        this.directorName = directorName;
    }

    String movieDescription()    {
        return "This movie is of horror genre";
    }

    String getDirector()    {
        return "The director of the movie is " + directorName;
    }
}

class ThrillerMovie extends Movie    {

    ThrillerMovie(String movieName, String movieLang, String directorName) {
        super(movieName, movieLang);
        this.directorName = directorName;
    }

    String movieDescription()    {
        return "This movie is of thriller genre";
    }

    String getDirector()    {
        return "The director of the movie is " + directorName;
    }
}

public class Sample    {
    public static void main(String[] args) {
        Movie movie = new HorrorMovie("Kanchana", "Tamil", "Lawrence");
        System.out.println(movie.getDirector());
        System.out.println(movie.movieDescription());

        movie = new ThrillerMovie("Raatchasan", "Tamil", "Ram Kumar");
        System.out.println(movie.getDirector());
        System.out.println(movie.movieDescription());
    }
}

```

4)

```
package ZSGS;
```

```
abstract class Document    {
    String type;
    String title;
    String author;

    Document(String title, String author) {
        this.title = title;
        this.author = author;
    }

    abstract String type();

    String getTitle()    {
        return title;
    }

    String getAuthor()    {
        return author;
    }
}

class PDFDocument extends Document    {

    PDFDocument(String title, String author, String type)    {
        super(title, author);
        this.type = type;
    }

    String type()    {
        return type;
    }
}

class TextDocument extends Document    {

    TextDocument(String title, String author, String type)    {
        super(title, author);
        this.type = type;
    }
}
```



```

        String type() {
            return type;
        }
    }

    class ImageDocument extends Document {

        ImageDocument(String title, String author, String type) {
            super(title, author);
            this.type = type;
        }

        String type() {
            return type;
        }
    }

    public class Sample {
        public static void main(String[] args) {
            Document doc = new PDFDocument("sample.java", "James Gosling", "JAVA");
            System.out.println(doc.type());

            doc = new TextDocument("sample.txt", "dinesh", "notepad");
            System.out.println(doc.type());

            doc = new ImageDocument("luufy.jpg", "oda", ".mp4");
            System.out.println(doc.type());
        }
    }

```