LAB GUIDE 9 – Interface - Exception

Mục tiêu: Sau bài thực hành này, học viên sẽ biết cách :
- Lập trình Interface.
- Xử lý các lỗi sai exception

Bài tập:
Viết chương trình tính lương công nhân, bằng cách xây dựng class Worker - hiện thực chức năng của interface IPayable

HD thực hiện:
- Mở Netbean, Tạo **project Java Application**, đặt tên **d07_interface** (nhớ bỏ check **Create Main Class)**
- Trong project **d07_interface**, tạo **package basic**
- Trong **package basic** , tạo **Java Interface IPayable**
- Viết code cho interface **IPayable**

IPayable.java

```
1  /*
2   * Interface liet ke :
3   * cac ham thuc hien chuc nang tinh luong, tinh thue thu nhap
4   * he so lam viec ngoai gio
5   */
6  package basic;
7
   public interface IPayable {
9      public int OT = 2;
       public float getSalary();
       public float getTax();
12 }
```

- Trong **package basic** , tạo **Java Class Worker,** hiện thực các hàm chức năng của interface **IPayable**
- Viết code cho class **Worker ,** override các phương thức **getSalary()**, **getTax()**

Worker.java

```
1  /* mo ta cau truc cua 1 doi tuong cong nhan, bao gom
2   * field du lieu: ma so, ho ten, luong cb, so ngay lam viec, HD thoi vu
3   * phuong thuc xu ly : nhap(), xuat()
4   */
5  package basic;
6
7  import java.util.Scanner;
8  public class Worker implements IPayable {
9
10     public String id, name;
11     public int salary, wdays;
12     public boolean partime;
```

```
13
14      public Worker() {
15      }
16
17      public Worker(String id, String name, int sal, int days, boolean partime) {
18          this.id = id;
19          this.name = name;
20          this.salary = sal;
21          this.wdays = days;
22          this.partime = partime;
23      }
24
25      public void input() {
26          Scanner sc = new Scanner(System.in);
27          System.out.print("nhap ma so : ");
28          id = sc.nextLine().trim();
29          System.out.print("nhap ho ten : ");
30          name = sc.nextLine().trim();
31
32          while (true) {
33              try {
34                  System.out.print("nhap luong co ban : ");
35                  salary = Integer.parseInt(sc.nextLine().trim());
36                  break;
                } catch (Exception e) {
38                  System.out.println("Loi: " + e.getMessage());
39              }
40          }
41
42          while (true) {
43              try {
44                  System.out.print("nhap so ngay lam viec : ");
45                  wdays = Integer.parseInt(sc.nextLine().trim());
46                  break;
                } catch (Exception e) {
48                  System.out.println("Loi: " + e.getMessage());
49              }
50          }
51
52          System.out.print("Hop dong thoi vu (y/n) ? : ");
53          partime = sc.nextLine().trim().equalsIgnoreCase("y");
54      }
55
56      @Override
        public float getSalary() {
58          return salary * wdays / 24.0f;
59      }
60
61      @Override
        public float getTax() {
63          float temp = 0;
64          if (partime == false && getSalary() > 500) {
65              temp = getSalary() * 0.1f;
66          }
67          return temp;
68      }
69
```

```
70      public void output() {
71          System.out.println(" >> bang luong cong nhan :");
72          System.out.println(" id: " + id);
73          System.out.println(" ten: " + name);
74          System.out.println(" luong cb: " + salary);
75          System.out.println(" so ngay lam viec: " + wdays);
76          System.out.println(" thoi vu : " + partime);
77          System.out.println(" luong thang: " + getSalary());
78          System.out.println(" thue thu nhap: " + getTax());
79          System.out.println(" thuc lanh: " + (getSalary() - getTax()));
80      }
81
82      @Override
        public String toString() {
84          return String.format("%s, %s, %.2f", id, name, getSalary() - getTax());
85      }
86
87  }
```

- Tạo java main class **Test**, trong package **app**, để kiểm thử lớp Worker
- Viết code cho class **Test**

Test.java

Source | History

```
1   package app;
2
3   import basic.*;
4   public class Test {
5       public static void main(String[] args) {
6           Worker w = new Worker();
7           w.input();
8           w.output();
9       }
10  }
```

- Bấm Shift+F6 để biên dịch và chạy thử chương trình

Assignment

Write a Java application - Inventory System - to manage the list of televisions with the specification as follows:

1	Creates an **abstract class** named **Product** in package **Goods.** - Protected Fields **id, name** - Public constructor to initialise the above fields. - Method: - Protected void **accept()** : allow user input data into data fields. - Public abstract void **printInfo()** : **abtract method** used to print details of an product.
2	Create an interface **ITax** in package **Goods** , consists of: - Field **VAT_TAX_PERCENT = 0.1 f** - Method: public float **getCost():** returns the cost of a product after TAX.
3	Create class **Television derives from Product** and **implements ITax**, in package **Electronics.** - Fields: p**price, QoH** (quantity on hand) and **brand.** - Constructors to initialise the all fields. - Override methods: **protected void accept() :** allow user to input additional details of a television invoke method accept() of super class. **public String toString() :** return a string presenting all the details of a product as follows: *id, name, price, QoH, cost, amount* (=cost*QoH, cost: price after TAX)
4	Create class **TelevisionCatalog** in package **Electronics** for managing a collection of Televisions: - Fields: **[max, count]** int**, tvList** – array of Television**.** - Default constructor to initialise the all the fields. - Methods: - **Public void add()** - add a new television into array - **Public void searchByBrand()** - search televisions belong a brand name accepted by user. - **Public void displayAll()** - display all televisions. - **Public void displayHighValue()** – display televisions with the price above 500.
5	Create **main** class **Inventory** in package **Application** that allows user to manage the televisons accepted into system through the menu system as follows: 1. Add a new television 2. Search televisions by brand 3. Display all televisions 4. Display high-valued televisions 5. Exit