Lab 03 Assignment

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提交要求（以下内容在最终提交的作业中可以删除，仅作参考）

目录格式

```
-- 班级-学号-姓名-Lab03.zip
   |-- answer.pdf
   |-- solution
       |-- Question1
           |-- 题1的代码文件(如果需要)

       |-- Question2
           |-- 题2的代码文件(如果需要)
       |-- ...
```

Question01

编译下面这个类：

```java
public class Sample {
    int x; // 1
    long y = x; // 2
    public void f(int n) {
        int m; // 3
        int t = n + m; // 4
    }
    public static void main(String[] args) {
        Sample t=new Sample();
        t.f(5);
        System.out.println(t.x);
    }
}
```

注释标记的哪些行会导致编译错误，为什么？

4会导致编译错误，因为局部变量 m 可能尚未初始化。

Question02

Question2：简答题 overload

阅读下面代码：

```java
public class Overload{
    Overload(int m){}
    Overload(double  m){}
    int Overload(int m){return 23;}
    void Overload(double m){}
}
```

对于`Overload`类，下面哪些叙述是错误的，为什么错？

- a. `Overload(int m)`与`Overload(double m)`互为重载的构造方法。
- b. `int Overload(int m)`与`void Overload(double m)`互为重载的非构造方法。
- c. `Overload`类有 2 个构造方法，尝试调用默认构造方法`Overload()`会无法通过编译。
- d. `Overload`类有 3 个构造方法。

a 不是**构**造方法
d 2个**构**造方法

Question03

```java
 1  package lab03;
 2
 3  class Dog{
 4      private String name;
 5      private int age;
 6
 7      public Dog(int age,String name) {
 8          this.name = name;
 9          this.age = age;
10      }
11      public void bark(int i){
12              System.out.println(age+"岁的"+name+" barking");
13          }
14
15      public void bark(String name){
16              System.out.println(age+"岁的"+name+" howing");
17          }
18  }
19  public class Question3 {
20
21      public static void main(String args[]) {
22          Dog dog= new Dog(5,"Rich");
23          dog.bark(5);
24
25      }
26          }
```

Problems   @ Javadoc   Declaration   Console   Debug   Coverage

\<terminated\> Question3 [Java Application] D:WjavaWeclipseWpluginsWorg.eclipse.justj.openjdk.hots

5岁的Rich barking

Question04

```java
public class Overload2 {
    int a,b;
    int c=-1;
    public Overload2(){a=-2;}
    public Overload2(int p1,int p2){a=p1;   b=p2;}
    public Overload2(int p1,int p2,int p3){
       this(p1,p2);
       c=p3;
    }

    @Override
    public String toString(){
       return String.format("(a,b,c)=(%d,%d,%d)",a,b,c);
    }
    public static void main(String args[]){
       Overload2 s = new Overload2();
       System.out.println(s);
       System.out.println(new Overload2(5,6));
       System.out.println((new Overload2(2,3,4)).toString());
    }
}
```

运行`java Overload2`，程序的输出是什么？

```
(a,b,c)=(-2,0,-1)
(a,b,c)=(5,6,-1)
(a,b,c)=(2,3,4)
```

Question05

Question5：简答题 finalize

阅读下面这段代码：

```java
public class User {
    public static int userCount = 0;
    public User() {
        ++userCount;
    }

    @Override
    protected void finalize() throws Throwable {
        super.finalize();
        System.out.println("bye");
        --userCount;
    }
    public static void main(String[] args) {
        System.out.println(User.userCount); // 1
        User u = new User();
        System.out.println(User.userCount); // 2
        u = null;
        System.out.println(User.userCount); // 3
        System.gc();
        System.out.println(User.userCount); // 4
    }
}
```

注意代码中用注释标出的四行`System.out.println(User.userCount)`，某些行的输出结果有多种可能。

运行`java User`，程序的输出可能是什么？

> 你需要在 answer.md 中说明如下内容

注释标记行	可能的输出内容
1	0
2	1
3	1
4	1

有什么办法可以让`finalize()`在`main()`结束前一定被调用吗？

Question06

```
 1  package lab03;
 2
 3  public class Test {
 4      public static void main(String[] args){
 5          IMessage music = new IMessage("music", "jazz");
 6          IMessage mobile = new IMessage("apple", "13 pro");
 7          music.print();
 8          mobile.print();
 9      }
10          }
11  class IMessage{
12      private String Name;
13      private String Type;
14      public IMessage(String Name, String Type)
15      {
16          super();
17          this.Name = Name;
18          this.Type = Type;
19      }
20      public void music(String Name , String Type)
21      {
22          this.Name=Name;
23          this.Type=Type;
24      }
25      public void Type(String Name , String Type)
26      {
27          this.Name=Name;
28          this.Type=Type;
29      }
30      public void print()
31      {
32      System.out.println(Name + ", " + Type);
33      }
34      }
35
```

Problems @ Javadoc Declaration Console ✕ Debug Coverage
<terminated> Test (1) [Java Application] D:\java\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.2.v20210201-0955\jre\b
music, jazz
apple, 13 pro

Question07

```java
  1 package lab03;
  2
  3 class Person{
  4     private int age;
  5     private String name;
  6     private String sex;
  7     public Person(){
  8
  9     }
 10     public Person(String n,int a,String s){
 11         name = n;
 12         age = a;
 13         sex = s;
 14     }
 15     public void setAge(int a)
 16     {
 17         if(a < 0 || a > 130){
 18             System.out.println("仔细看范围");
 19             return;
 20             }age = a;
 21     }
 22     public int getAge(){
 23         return age;
 24     }
 25     public void showAge(){
 26         System.out.println(age);
 27     }
 28     public void setName(String n){
 29         name = n;
 30     }
 31     public String getName(){
 32         return name;
 33     }
 34     public void setsex(String s){
 35         sex = s;
 36     }
 37     public String getsex(){
 38         return sex;
 39     }
 40
 41     public void work() {
 42         System.out.println("working");
 43     }
 44 }
 45
 46
 47 public class Question7 {
 48     public static void main(String[] args) {
 49         Person p = new Person();
 50
 51         p.setAge(21);
 52         p.getAge();
 53         p.showAge();
 54         p.work();
 55
 56         Person p2 = new Person("Junha",21,"男");
 57         System.out.println("name = " + p2.getName() + ",age = " + p2.getAge() + ", sex ="+ p2.getsex());
 58
 59
 60     }
 61 }
```

Problems @ Javadoc Declaration Console ⊠ Debug Coverage

<terminated> Question7 [Java Application] D:\java\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.2.v20210201-0955\jre\bin\javaw.exe (2022. 10. 10. 오후 12:0

```
21
working
name = Junha,age = 21, sex =男
```

Question08

```java
1  package lab03;
2
3  import java.util.regex.Pattern;
6
7  class wufuhao{
8      private static String pattern1 = new String("^[1-9][0-9]*");
9      private static String pattern2 = new String("0");
10
11     public boolean isReasonable(String s) {
12         if(Pattern.matches(pattern1, s) || Pattern.matches(pattern2, s)) {
13
14             return true;
15         }
16
17             return false;
18         }
19 }
20
21
22 class huiwenshu {
23
24     public boolean isDC(int num) {
25
26         String string = String.valueOf(num);
27         boolean flag = true;
28
29         if (string.length()==1) {
30             flag = true;
31         }else if(string.length()==2||string.length()==0){
32             flag = false;
33         }else {
34             for(int i=0;i<string.length()/2;i++) {
35                 if(string.charAt(i)!= string.charAt(string.length()-1-i)) {
36                     flag = false;
37                     break;
38                 }
39             }
40         }
41         return flag;
42         }
43     }
44
45
46
47 public class Question8 {
48
49     public static void main(String args[]){
50
51         wufuhao w = new wufuhao();
52         huiwenshu h = new huiwenshu();
53
54         Scanner sc = new Scanner(System.in);
55
56         String s = sc.nextLine();
57
58         w.isReasonable(s);
59
60         if(w.isReasonable(s)==true) {
61             System.out.println("没有前导 0 的无符号整数 - ture");
62             int num = Integer.parseInt(s);
63             h.isDC(num);
64             if(h.isDC(num)==true) {
65                 System.out.println("回文数 - true");
66             }else {
67                 System.out.println("回文数 - false");
68             }
69         }else {
70             System.out.println("没有前导 0 的无符号整数 - false");
71         }
72     }
73
74 }
75
```

Problems @ Javadoc ❑ Declaration ❑ Console ❑ Debug ❑ Coverage

<terminated> Question8 [Java Application] D:\java\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.2.v20210201-0955\jre\bin\

```
121
没有前导 0 的无符号整数 - ture
回文数 - true
```