JAVA应用技术

复习课

知识点 I

- Java 常识
  - Java 代码编译执行的过程
    - 真实编译
    - 字节码解释执行
  - 跨平台的原因
    - JVM
    - 数据类型统一
  - Java 和 C++的比较
  - Java 内存模型
    - 对象都在堆里
    - 对象变量是指针
    - 垃圾回收机制
    - 数组下标检查
  - 单根结构：Object 类
  - main()
    - public static void main(String[] args)
    - 命令行参数
  - Java 关键字

- Java 基础：数据类型、对象和控制语句
  - 基本数据类型
  - 对象变量
    - 对象变量的意义
    - 对象变量的赋值
    - 对象变量做函数参数和返回值
    - 对象变量的比较
      - equals()
  - 字符串的连接
  - ?:运算符的结果类型问题
  - 带标号的 break 和 continue
- 类
  - this
    - 在成员函数内使用
    - 调用其他构造函数
  - 成员变量初始化
    - 定义初始化
    - 构造函数初始化
  - 静态成员
    - 静态成员的访问：通过“.”运算符
    - 静态成员变量和类对象的关系

知识点 II

- 数组
  - 数组的创建
  - 数组变量的赋值
  - 对象数组
  - for-each 循环
    - 对象数组 for-each 的特殊性
- 访问属性
  - import 的意义
  - package 和 CLASSPATH
  - 默认的访问属性：包内
  - protected：子类及包内
  - class 的访问属性
    - 默认的类仅限包内访问
    - public 类必须和源代码文件同名
- 继承和多态
  - 单继承
  - super 的作用
  - 继承和私有变量的关系
  - 和 C++的两个区别
    - 构造函数内实现了动态绑定
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  - 默认动态绑定
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    - final 变量
    - final 函数和类
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知识点 III

- 标准类库
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      - 常量对象
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    - 在switch-case中使用
  - StringBuffer类
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- 异常
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    - 编译时检查
    - 与构造函数的关系
    - 与函数覆盖的关系

- IO
  - stream
    - 流的基本概念
      - 输入输出分开
      - 只处理byte
    - 流的基本函数
    - 文件流的使用
  - Reader/Writer和stream的关系
    - 通过桥建立两者的关系
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  - DataInput/OutputStream
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  - 对象串行化

- GUI
  - AWT和Swing
  - 部件、容器、布局管理器的关系
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    - add()
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  - Graphics类的使用
    - 理解paint()函数
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  - 菜单类族的使用
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    - 消息机制
    - Listener、Event类
    - add/removeListener函数
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  - 常见部件（略）
  - JTable与MVC模式

知识点 IV

- 线程
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    - Runnable接口
    - Thread类
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    - yield()
    - 优先级控制
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  - 通过管道的线程间通信
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    - 从Class类对象中获得父类、接口和函数的方法
  - Method类
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  - UDP的通信方式
  - 构建socket服务的设计模式

- JDBC
  - SQLite
  - JDBC如何连接和查询
  - 事务处理
  - preparedStatement
- 函数式编程
  - Lambda表达式
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- 流式计算
  - 容器的stream接口
  - 常用的高阶函数
    - 过滤
    - 映射
    - 聚合

样题

判断题

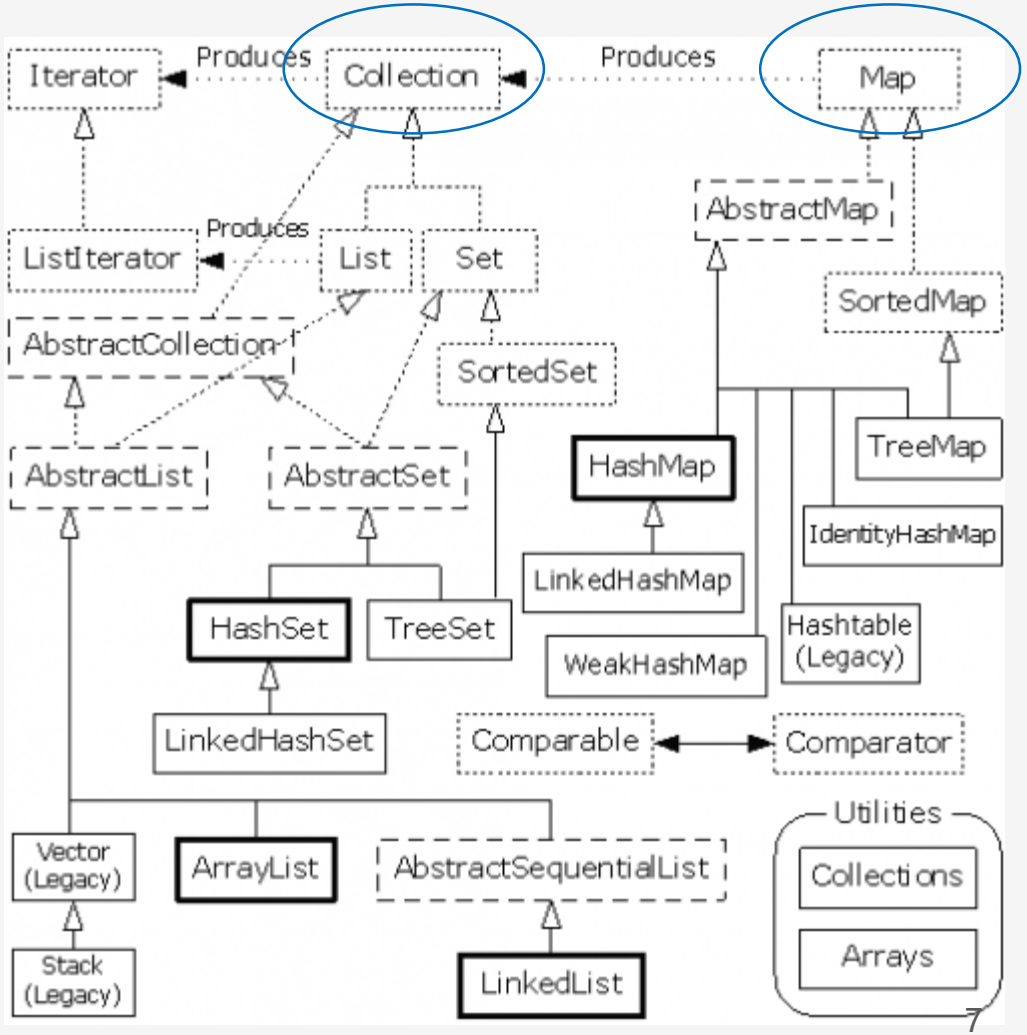
`char` of Java is 8-bit. (1分)	F
A Java class can extend from multiple base classes. (1分)	F
Member variables are to get default init values when the object is to be created. (1分)	T
`protected` member can be visited by extended class only. (1分)	F
InputStream and OutputStream read and write 8-bit data. (1分)	T
Swing container is used to organize other GUI components in. But other containers can not be put in a container. (1分)	F
To access a method of a class, an object of that class must be created first. (1分)	F
When an object is de-serialized, its constructor does not run. (1分)	T

样题

单选题

About Java containers, which statement below is NOT correct? (2分)

- ○ A. `List` holds the elements in a particular sequence
- ○ B. `Set` cannot have any duplicate elements
- ○ C. `Map` has group of key-value object pairs
- ◉ D. `Iterator` can deal with `List`, `Set` and `Map`



HashMap

```
public Set<K> keySet() {
    Set<K> ks = keySet;
    if (ks == null) {
        ks = new KeySet();
        keySet = ks;
    }
    return ks;
}
```

```
public Collection<V> values() {
    Collection<V> vs = values;
    if (vs == null) {
        vs = new Values();
        values = vs;
    }
    return vs;
}
```

```
public Set<Map.Entry<K,V>> entrySet() {
    Set<Map.Entry<K,V>> es;
    return (es = entrySet) == null ? (entrySet = new EntrySet()) : es;
}
```

样题

For swing event handling mechanism, which one below is NOT correct? (2分)

- ○ A. Event source like JButton is able to have more than one ActionListener objects registered
- ○ B. When an event occurs, the source object notices all the registered listeners
- ○ C. A registered listener is able to be de-registered from a source object dynamically
- ◉ D. One listener can not be registered at more than one source object

For code below:

```
ArrayList<Integer> a = new ArrayList<Integer>();
ArrayList<Double> b = new ArrayList<Double>();
```

Which statement below is **NOT** correct? (2分)

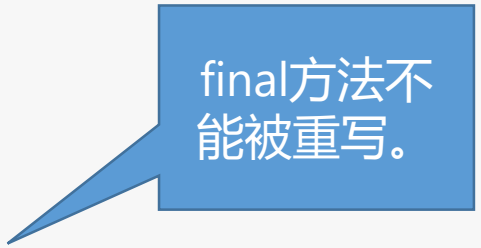
- ○ A. a.getClass().equals(b.getClass()) is true
- ○ B. a.getClass() == b.getClass() is true
- ○ C. a instanceof ArrayList is true
- ◉ D. a.getClass() == b.getClass() is false

样题

Given code below:

```
class Base{
        public final void method() {
                System.out.println("Base.method");
        }
}

public final class Fin extends Base{
        public void method() {
                System.out.println("Fin.method");
        }
        public static void main(String argv[]){
                Base b = new Fin();
                b.method();
        }
}
```



While one below is correct? (2分)

- ○ A. It does not compile because of method() in Fin is not defined final as its base one
- ○ B. It does not compile because Fin can not be final
- ◉ C. It does not compile because of method() in Base final so no function can override it in derived classes
- ○ D. It compiles and prints Fin.method

样题

For InputStream.read(), the read() with no parameters, which statement below is correct? (2分)

- (●) A. read() returns int, because it has to return EOF to indicate the end of the file
- ( ) B. read() returns byte, because it reads a byte from the stream
- ( ) C. read() returns char, because it reads a char from the stream
- ( ) D. read() returns int, as the number of bytes it just read

The value returned is a byte as an int type.

java.io.InputStream	
+read(): int	Reads the next byte of data from the input stream. The value byte is returned as an int value in the range 0 to 255. If no byte is available because the end of the stream has been reached, the value –1 is returned.
+read(b: byte[]): int	Reads up to b.length bytes into array b from the input stream and returns the actual number of bytes read. Returns -1 at the end of the stream.
+read(b: byte[], off: int, len: int): int	Reads bytes from the input stream and stores into b[off], b[off+1], …, b[off+len-1]. The actual number of bytes read is returned. Returns -1 at the end of the stream.
+available(): int	Returns the number of bytes that can be read from the input stream.
+close(): void	Closes this input stream and releases any system resources associated with the stream.
+skip(n: long): long	Skips over and discards n bytes of data from this input stream. The actual number of bytes skipped is returned.
+markSupported(): boolean	Tests if this input stream supports the mark and reset methods.
+mark(readlimit: int): void	Marks the current position in this input stream.
+reset(): void	Repositions this stream to the position at the time the mark method was last called on this input stream.

样题

Given the following code:

```
public class Test {
        String s;
        static class Inner {
                void testMethod() {
                        s = "Hello world.";
                }
        }
        public static void main(String[] argv) {
                Inner i = new Inner();
                i.testMethod();
                System.out.println(s);
        }
}
```

- Since a static inner class has no connection to an object of the outer class, within an inner class method
  - Instance variables of the outer class **cannot be** referenced
  - Nonstatic methods of the outer class **cannot be** invoked

which one below is correct?(2分)

- ○ A. It compiles and prints out Hello world.
- ◉ B. It does not compile because String s in class Test is not static.
- ○ C. It does not compile because Inner can not used in the way in main()
- ○ D. It compiles and exception raises at running indicates that s has not been initiated.

样题

Given the following class definition which of the following can be legally placed after the comment line //Here ?(2分)

```
class Base{
        public Base(int i){}
}

public class MyOver extends Base{
        public static void main(String arg[]){
                MyOver m = new MyOver(10);
        }
        MyOver(int i){
                super(i);
        }
        MyOver(String s, int i){
                this(i);
                //Here
        }
}
```

- ○ A. `MyOver m = new MyOver();`
- ○ B. `super();`
- ○ C. `this("Hello",10);`
- ◉ D. `Base b = new Base(10);`

样题

Why might you define a method as native? (2分)

- ◉ A. To get to access hardware that Java does not know about
- ○ B. To define a new data type such as an unsigned integer
- ○ C. To write optimized code for performance in a language such as C/C++
- ○ D. To overcome the limitation of the private scope of a method

For exception, which statement below is **NOT** correct? (2分)

- ○ A. It is possible to have a try block with out any catch clause but a finally clause
- ○ B. It is possible to have a try block inside another try block
- ○ C. It is possible to have a try block along with its catch clauses inside a catch clause
- ◉ D. To re-throw the exception object in a catch clause, simple put a throw statement without the name of the object.

Which of the following will output -3.0 (2分)

- ○ A. System.out.println(Math.floor(-3.7));
- ○ B. System.out.println(Math.round(-3.7));
- ◉ C. System.out.println(Math.ceil(-3.7));
- ○ D. System.out.println(Math.min(-3.7));

样题

What must be done when throwing an integer as an exception? (2分)

- (●) A. Integers cannot be thrown.
- ( ) B. Declare integers as Throwable.
- ( ) C. Import the exception class.
- ( ) D. Encapsulate the integer handler

What best describes the appearance of an application with the following code?

```
public class FlowAp extends Frame{
public static void main(String argv[]){
    FlowAp fa=new FlowAp();
    fa.setSize(400,300);
    fa.setVisible(true);

}

FlowAp(){
        add(new Button("One"));
        add(new Button("Two"));
        add(new Button("Three"));
        add(new Button("Four"));
    }
}
```

(2分)

- ( ) A. A Frame with buttons marked One to Four placed on each edge.
- ( ) B. A Frame with buttons marked One to four running from the top to bottom
- (●) C. A Frame with one large button marked Four in the Centre
- ( ) D. An Error at run time indicating you have not set a LayoutManager

样题

What will happen when you attempt to compile and run the following code?

```
public class Bground extends Thread{
        public static void main(String argv[]){
                Bground b = new Bground();
                b.run();
        }
        public void start(){
                for (int i = 0; i <10; i++){
                        System.out.println("Value of i = " + i);
                }
        }
}
```

(2分)

- ○ A. A compile time error indicating that no run method is defined for the Thread class
- ○ B. A run time error indicating that no run method is defined for the Thread class
- ○ C. Clean compile and at run time the values 0 to 9 are printed out
- ◉ D. Clean compile but no output at runtime

样题

Suppose there is no file Hello.txt in the current directory. Run the program: (2分)

```
import java.io.*;
public class ABC {
        public static void main(String argv[]) throws Exception {
                ABC m=new ABC();
                System.out.println(m.ff());
        }

        public int ff() {
                try {
                        FileInputStream dis=new FileInputStream("Hello.txt");
                } catch (FileNotFoundException fne) {
                        System.out.print("No such file found, ");
                        throw fne;
                } finally {
                        System.out.print("Doing finally, ");
                }
                return 0;
        }
}
```

- ○ A. No such file found,
- ○ B. No such file found ,0
- ◉ C. No such file found, Doing finally,
- ○ D. No such file found, Doing finally, 0

样题

About layout manager in AWT and Swing, which one below is correct? (2分)

- ○ A. `FlowLayout` is the default layout manager of `Frame`.
- ◉ B. `GridLayout` divides the whole space into even pieces.
- ○ C. It is not possible to specify coordinates of component regardless the effect of any layout managers.
- ○ D. Every place in a `BorderLayout` has to be fill with a component, or it will leave blank.

Which statement below is NOT correct? (2分)

- ○ A. A thread is an instance of Thread class.
- ○ B. A thread runs the run() method of the Runnable object.
- ◉ C. A new born thread can run immediately when start() is called.
- ○ D. Thread can access data of the Runnable object.

Given code below:

```
List<String> ls = new ArrayList<String>();
List<Object> lo = ls;
lo.add(new Object());
String s = ls.get(0);
```

Which statement below is correct? (2分)

- ◉ A. It does not compile
- ○ B. It compiles but exception raises at line 2
- ○ C. It compiles but exception raises at line 3
- ○ D. It compiles but exception raises at line 4

(____) will be the result of running the following code.（2分）

知识点	作者	单位	难度
String类	杭州楼	浙江大学	1

(____) will be the result of running the following code. (2分)

```
String s = "浙江大学", t, u, v;
t = "浙江"+"大学";
u = "浙江"; u+="大学";
v = new String("浙江大学");
System.out.println((s==t)+", "+(s==u)+", "+(s==v)+", "+s.equals(v));
```

37%

A. false,false,false,true

B. true, true, true, true

C. true, true, false,true

D. true, false,false,true

(____) will be the result of running the following code. (2分)

```
String s = "AB浙江大学CD";
byte[] b = s.getBytes();
System.out.println(b.length+"->"+s.length());
```

- A. 12->8
- B. Not sure, depending on the character set
- C. 16->8
- D. 16->10

6%

(___) will be the output when you compile and execute the following program.

```
enum 星期 {
    /*1*/ 天("星期天", 0), 一("星期一", 1), 二("星期二", 2), 三("星期三", 1), 四("星期四", 4), 五("星期五", 1)
    String 名; int 序;
    private 星期(String n, int i) {名 = n; 序 = i; }
/************************************************/
    public static void main(String[] args) {
        /*2*/ System.out.print(星期.天.名+", ");
        /*3*/ System.out.print(星期.天+", ");
        /*4*/ System.out.print(天.名+", ");
        /*5*/ System.out.print(天+"\n");
    }
}
```

29%

A. 星期天, 星期天, 星期天, 星期天

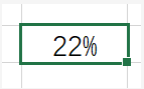
B. Cannot compile, */4/*,*/5/* line error

C. 星期天, 天, 星期天, 天

D. Cannot compile, */1/* line error

Given code, (____) will be the result. (2分)

```
class Sup {
    public int fun() {return 4;}
}
public class Sub extends Sup {
    public long fun() {return 5;}
    public static void main (String[]args) {
        Sup sup = new Sup();
        Sub sub = new Sub();
        System.out.println(sup.fun()+ ", " + sub.fun());
    }
}
```



- A. 4, 4
- B. 4, 5
- C. Error, cannot compile.
- D. 5, 5

样题

程序输出题

请写出以下程序运行结果：

```
public class X {
    public static void main(String [] args) {
        try {
            badMethod();
            System.out.print("A");
        } catch (RuntimeException ex) {
            System.out.print("B");
        } catch (Exception ex1) {
            System.out.print("C");
        } finally {
            System.out.print("D");
        }
        System.out.print("E");
    }
    public static void badMethod() {
        throw new RuntimeException();
}}
```

BDE (2分)

请写出以下程序运行结果：

```
class Test {
    public static void main(String[] args) {
        Integer a = new Integer(3);
        Integer b = 3;
        int c = 3;
        System.out.println(a == b);
        System.out.println(a == c);
}}
```

false (2分)

true (2分)

请写出以下程序运行结果：

```
public class Test {
   public static void main(String[]args){
      House house1 = new Test().new House(1,100);
      House house2 = (House)house1.clone();
      System.out.println(house1==house2);
      System.out.println(house1.equals(house2));
      System.out.println(house1.whenBuilt==house2.whenBuilt);
      System.out.println(house1.whenBuilt.equals(house2.whenBuilt));
   }
   public class House implements Cloneable, Comparable<House> {
      private int id;
      private int area;
      private java.util.Date whenBuilt;
      public House(int id, int area) {
         this.id = id;
         this.area = area;
         whenBuilt = new java.util.Date();
      }
      @Override
      public Object clone() {
         try {
            House houseClone = (House)super.clone();
            houseClone.whenBuilt = (java.util.Date) (whenBuilt.clone());
            return houseClone;
         } catch (CloneNotSupportedException ex) {
            return null;
      }}
      @Override
      public int compareTo(House o) {
         if (area > o.area)
            return 1;
         else if (area < o.area)
            return -1;
         else
            return 0;
}}}
```

false (2分)

false (2分)

false (2分)

true (2分)

equals没有重写

样题

请写出以下程序运行结果：

```
enum EnumTry {
   MON, TUE, WED, THU, FRI;
   public static void main(String[] args)  {
      for (EnumTry e : EnumTry.values()) {
         System.out.println(
            e +":"+ e.toString() +":"+ e.ordinal() +":"+ e.name());
}}}
```

MON:MON:0:MON (2分)

TUE:TUE:1:TUE (2分)

WED:WED:2:WED (2分)

THU:THU:3:THU (2分)

FRI:FRI:4:FRI (2分)

样题

给出以下代码：

```
public class Test {
        public int t=4;
        public static void main(String[] args) {
                new Test().NumberPlay();
        }
        public void NumberPlay() {
                int t=2;
                t = t+5;
                this.t = this.t-2;
                t = t-this.t;
                System.out.println(t+this.t+"ok");
        }
}
```

程序运行后输出结果为：7ok (2分)

请写出以下程序运行结果：

```
class Main  {
        public static void main(String[] args) {
                String s1 = "Zhejiang University";
                String s2 = s1.substring(0, 7);
                s2.toUpperCase();
                System.out.println(s2+s1.substring(8));
        }
}
```

Zhejian University (2分)

样题

请写出以下程序运行结果：

```
public class Test {
        public static void main(String[] args) throws Exception{
            String str = "hello";
            Method m = str.getClass().getMethod("toUpperCase");
            System.out.println(m.invoke(str));
            System.out.println(str);
}}
```

HELLO (2分)

hello (2分)

```
public enum Main {
  PLUS   { int eval(int x, int y) { return x + y; } },
  MINUS  { int eval(int x, int y) { return x - y; } },
  TIMES  { int eval(int x, int y) { return x * y; } },
  DIVIDE { int eval(int x, int y) { return x / y; } };
  abstract int eval(int x, int y);
  public static void main(String args[]) {
                int x = 4;
        int y = 2;
        for (Main op : Main.values())
            System.out.printf("%d %s %d = %d%n", x, op, y, op.eval(x, y));
    }
}
```

程序运行结果为（一行一空）：

(2分)

(2分)

(2分)

(2分)

程序填空题

```
输入    add 5 3
打印    8

import java.util.Scanner;
enum IntOp {
[          ]
 {   //  for operator add
        int eval(int i1, int i2) {
            return [       ];
        }
    },

[          ]
 {  //  for operator sub
        int eval(int i1, int i2) {
            return [          ];
        }
    };

    int eval(int i1, int i2) {
        return 0;
    };
}

public class Main {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        String op = in.next();
        int i1 = in.nextInt();
        int i2 = in.nextInt();
        System.out.println(IntOp.[          ].eval(i1, i2));
        in.close();
    }
}
```

```
enum IntOp {
add
 {   //  for operator add
        int eval(int i1, int i2) {
            return i1+i2;
        }
    },
 sub
 {  //  for operator sub
        int eval(int i1, int i2) {
            return i1-i2;
        }
    };

    int eval(int i1, int i2) {
        return 0;
    };
}
public class Main {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        String op = in.next();
        int i1 = in.nextInt();
        int i2 = in.nextInt();
        System.out.println(IntOp.valueOf(op).eval(i1, i2));
        in.close();
    }
}
```

程序填空题

输入：

```
Taylor Swift U.S.
the Beattles U.K.
the Dynasty Tang China
the May Flower China
```

统计：以“the”开始的行的国家

```
China
U.K.
```

```
public class Main {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        ArrayList<String[]> lst = new ArrayList<String[]>();
        while ( in.hasNextLine() ) {
            String line = in.nextLine();
            lst.add(line.split(" "));
        }
        Set<String> ret = lst.stream()
            .filter([                              ])
            .map([                                ])
            .collect(Collectors.[          ]);
        ArrayList<String> r = new ArrayList<String>(ret);
        Collections.sort(r);
        for ( String s: r ) {
            System.out.println(s);
        }
        in.close();
    }
}
```

```java
public class Main1 {
    public static void main(String[]args){
        Scanner in = new Scanner(System.in);
        ArrayList<String[]> lst = new ArrayList<String[]>();
        while (in.hasNextLine()) {
            String line = in.nextLine();
            if(line.equals(""))
                break;
            lst.add(line.split(" "));
        }
        Set<String> ret = lst.stream().filter(x->x[0].equals("the")).map(x->x[x.length-1])
            .collect(Collectors.toSet());
        ArrayList<String> r = new ArrayList<String>(ret);
        Collections.sort(r);
        for ( String s: r ) {
            System.out.println(s);
        }
        in.close();
    }
}
```

函数题

题目描述

有一连串任务，需要两个线程交替执行。线程1执行完任务1后，线程2才能执行任务2，接下来线程1执行任务1，如此交替执行下去。直到所有任务执行完毕。 (15分)

定义 `Repo` 类代表任务仓库，使用字符串代表任务。该类拥有：

构造函数:

```
/*将传递进来的字符串以空格分隔分解为多个不同的任务，并存储起来。如"1 2 3 4 5 6"被分解成6个任务1,2,3,4,5,6*/
public Repo(String items) {
}
```

方法:

```
int getSize();  //返回Repo包含的任务数量。注意：完成任务的时候，需要将任务删除。
//其他完成任务的方法
```

定义 `Worker1` 与 `Worker2` 类，代表两个交替完成任务的类，可以从Repo对象中获取任务。

###main函数如下：

```
public class Main {
    public static void main(String[] args) throws InterruptedException {
        Scanner sc = new Scanner(System.in);
        Repo repo = new Repo(sc.nextLine());
        Thread t1 = new Thread(new Worker1(repo));
        Thread t2 = new Thread(new Worker2(repo));
        t1.start();
        Thread.yield();
        t2.start();
        sc.close();
    }
}
```

输入样例

```
1 2 3 4 5 6 7 8 9
```

输出样例

```
Thread-0 finish 1
Thread-1 finish 2
Thread-0 finish 3
Thread-1 finish 4
Thread-0 finish 5
Thread-1 finish 6
Thread-0 finish 7
Thread-1 finish 8
Thread-0 finish 9
```

裁判测试程序：

```
/*Repo代码*/

/*Worker1代码*/

/*Worker2代码*/

/*系统已有代码，无需关注*/
```

函数题

题目描述

This program reads a line of logical expression with one logical operator and two boolean values, and evaluates the result. A logical expression is like: (5分)

```
true and false
```

The result of the expression above is: `false`.

The `Main` class and a skeleton of enum `LogicalOp` are provided.

函数接口定义：

```
enum LogicalOp {

    boolean test(boolean p1, boolean p2) {
        return false;
    };
}
```

Your `LogicalOp` should provide `and` and `or`.

裁判测试程序样例：

```
public class Main {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        boolean p1 = in.nextBoolean();
        String op = in.next();
        boolean p2 = in.nextBoolean();
        System.out.println(LogicalOp.valueOf(op).test(p1, p2));
        in.close();
    }
}
/* 请在这里填写答案 */
```

输入样例：

```
true and false
```

输出样例：

```
false
```

编程题

题目描述

定义 `IllegalScoreException` 异常类，代表分数相加后超出合理范围的异常。该异常是 `checked exception` ，即希望该异常一定要被捕获处理。

定义 `IllegalNameException` 异常类，代表名字设置不合理的异常。该异常是 `unchecked exception`

定义 `Student` 类。

属性:

```
private String name;
private int score;
```

方法:

```
toString          //自动生成
setter/getter     //自动生成
改造setName       //如果姓名首字母为数字则抛出IllegalNameException
public int addScore(int score)  //如果加分后分数<0 或>100，则抛出IllegalScoreException，加分不成功。
```

###main方法:

1. 输入 `new` 则新建学生对象。然后输入一行学生数据，格式为 `姓名 年龄` ，接着调用setName，addScore。否则跳出循环。
2. setName不成功则抛出异常，并打印异常信息，然后继续下一行的处理。
3. addScore不成功则抛出异常，并打印异常信息，然后继续下一行的处理。如果2、3都成功，则打印学生信息(`toString`)
4. 如果在解析学生数据行的时候发生其他异常，则打印异常信息，然后继续下一行的处理。
5. Scanner也是一种资源，希望程序中不管有没有抛出异常，都要关闭。关闭后，使用 `System.out.println("scanner closed")` 打印关闭信息

注意: 使用 `System.out.println(e);` 打印异常信息，e为所产生的异常。

输入样例:

```
new
zhang 10
new
wang 101
new
wang30
new
3a 100
new
wang 50
other
```

输出样例:

```
Student [name=zhang, score=10]
IllegalScoreException: score out of range, score=101
java.util.NoSuchElementException
IllegalNameException: the first char of name must not be digit, name=3a
Student [name=wang, score=50]
scanner closed
```