

Lab 00 Assignment

班级: 202111

学号: 19241027

姓名: 胡峻诚

Question 1

`java` 的使用方法为: `java + .class 字节码文件` (例如: `java hello`)

其参数的含义是: 运行, 运行 `.class` 字节码

`javac` 的使用方法为: `javac + .java 源文件` (例如: `javac hello.java`)

其参数的使用含义是: 编译, 将 `.java` 源文件编译成 `.class` 字节码文件

Question 2

```

import java.util.Scanner;

public class Test {
    public static void main(String[] args) {
        System.out.println("19241027 胡峻诚\n");
        Scanner input = new Scanner(System.in);
        String str = input.nextLine();
        while(!str.equals("QUIT")){
            System.out.println("Hello, World!");
            str = input.nextLine();
        }
        System.out.println("----- Good Bye! -----");
        System.exit(0);
    }
}

```

运行: Test

19241027 胡峻诚
os
Hello, World!
osd
Hello, World!
QUIT
----- Good Bye! -----
进程已结束,退出代码0

Question 3

```

public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello World!");
        int a = 1;
        a = a + 1;
        a = a + 2;
        System.out.println("a is " + a);
        a = a + 3; //断点行
        a = a + 4;
        System.out.println("a is " + a);
    }
}

```

运行: **HelloWorld**

```

/Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=60533:/Applications/IntelliJ IDEA.app/Contents/bin
Hello World!
a is 4
a is 11
进程已结束,退出代码0

```

所有文件都处于最新状态(片刻之前)

事件日志

3月5日 周六 16:19:44

调试: **HelloWorld**

帧

评估表达式(?)或添加监视(?)

main:8, HelloWorld

变量

args = {String[0]@701} []
a = 4

事件日志

3月5日 周六 16:19:44

Question 4

```

public class App1 {
    public static void main(String args[]) {
        // 定义整形变量a和双精度浮点变量b、c
        int a = 126;
        double b = 0.2;
        double c = 1.6;
        // 创建字符串对象
        String str1 = "Hello World";

        String str = new String( original: "字符串不是基本数据类型" );
        // 输出各个变量
        System.out.println("a=" + a);
        System.out.println("b+c=" + (b + c));
        System.out.println("b+c=" + b + c);
        System.out.println(str);
        System.out.println(str1);
    }
}

运行: App1
/Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=60553:/Applications/IntelliJ IDEA.app/Contents/bin
a=126
b+c=1.8
b+c=0.21.6
字符串不是基本数据类型
Hello World

进程已结束,退出代码0

```

Question 5

```

public class VarDemo {
    public static void main(String[] args) {
        byte b = 0x55;
        boolean B = true;
        short s = 0x55ff;
        int i = 1000000;
        long l = 0xfffffL;
        char c = 'c';
        float f = 0.23F;
        double d = 0.7E-3;
        String S = "This is a string";
        System.out.println("字节型变量 b = " + b);
        System.out.println("短整型变量 s = " + s);
        System.out.println("整型变量 i = " + i);
        System.out.println("长整型变量 l = " + l);
        System.out.println("字符型变量 c = " + c);
        System.out.println("浮点型变量 f = " + f);
        System.out.println("双精度变量 d = " + d);
        System.out.println("布尔型变量 B = " + B);
        System.out.println("字符串对象 S = " + S);
    }
}

运行: VarDemo
/Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=60553:/Applications/IntelliJ IDEA.app/Contents/bin
字节型变量 b = 85
短整型变量 s = 22015
整型变量 i = 1000000
长整型变量 l = 65535
字符型变量 c = c
浮点型变量 f = 0.23
双精度变量 d = 7.0E-4
布尔型变量 B = true
字符串对象 S = This is a string

进程已结束,退出代码0

```

Question 6

The screenshot shows the IntelliJ IDEA interface with the project 'Lab00' open. The 'Init.java' file is the active tab, displaying Java code that prints various primitive variable types. The terminal below shows the execution results:

```

/Libary/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=60764:/Applications/IntelliJ IDEA.app/Contents/lib
    节型变量 b = 0
    短整型变量 s = 0
    整型变量 i = 0
    长整型变量 l = 0
    字符型变量 c = \0
    浮点型变量 f = 0.0
    双精度变量 d = 0.0
    布尔型变量 B = false

```

The status bar at the bottom indicates the build was successful in 582 milliseconds.

基本类型	默认值	基本类型	默认值
byte	0	boolean	false
short	0	char	'\0'
int	0	float	0.0
long	0	double	0.0

Question 7

```

public class FindMinMax {
    public static void main(String[] args) {
        double temp, max, min;
        double d1 = 1, d2 = -9.9, d3 = 96.9;
        temp = d1 > d2 ? d1 : d2;
        temp = temp > d3 ? temp : d3;
        max = temp;
        temp = d1 < d2 ? d1 : d2;
        temp = temp < d3 ? temp : d3;
        min = temp;
        System.out.println("max=" + max);
        System.out.println("min=" + min);
    }
}

```

运行: FindMinMax
/Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=60778:/Applications/IntelliJ IDEA.app/Contents/bin
max=96.9
min=-9.9
进程已结束,退出代码0

Question 8

```

public class ShortCircuit {
    static void print(String s) {
        System.out.println(s);
    }
    static boolean test1(int val) {
        print("1");
        return val < 1;
    }
    static boolean test2(int val) {
        print("2");
        return val < 2;
    }
    static boolean test3(int val) {
        print("3");
        return val < 3;
    }
    public static void main(String[] args) {
        boolean b = test1(val: 0) && test2(val: 2) && test3(val: 2);
        print("b is " + b);
    }
}

```

运行: ShortCircuit
/Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=60784:/Applications/IntelliJ IDEA.app/Contents/bin
1
2
b is false
进程已结束,退出代码0

在执行 与运算 时，从前往后依次判断，只要某一项是 false ，就返回 false。

可以将出现 false 可能性更大的 放在 与判别式 的前面。

或判别式 同理。

Question 9

The screenshot shows the IntelliJ IDEA interface with the following details:

- Project Structure:** The project is named "Lab00". The "src" directory contains several Java files: App1, VarDemo, Init, FindMinMax, ShortCircuit, GlobalVar, HelloWorld, Test, and VarDemo. The "GlobalVar.java" file is currently selected.
- Code Editor:** The code for GlobalVar.java is displayed. It defines a class GlobalVar with a main method and a print method. The main method initializes a GlobalVar object and prints its value. The print method changes the value of a local variable a and prints it again.
- Debugger:** A debugger window titled "调试: GlobalVar" is open, showing the execution path and variable values at each step. The output pane shows the following log:


```
/Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin/java -agentlib:jdwp=transport=dt_socket,address=127.0.0.1:61183,suspend=y,server=n -javaagent:/Users/hu...  
已连接到目标 VM, 地址: ''127.0.0.1:61183'', 传输: '套接字'  
全局变量 a = 10  
在print()中, 全局变量 a = 10, b = 20.0  
在print()中, 全局变量 a = 30, b = 20.0  
全局变量变化后 a = 30  
与目标 VM 断开连接, 地址为: ''127.0.0.1:61183'', 传输: '套接字'  
进程已结束, 退出代码0
```
- Bottom Bar:** Shows tabs for Version Control, Run, Debug, TODO, Issues, Profiler, Terminal, and Build. It also displays system information like the event log and file statistics.

Question 10

The screenshot shows the IntelliJ IDEA interface with the following details:

- File Menu:** 文件 (File), 编辑 (Edit), 视图 (View), 导航 (Navigate), 重构 (Refactor), 构建 (Build), 运行 (Run), 工具 (Tools), VCS (Version Control), 窗口 (Windows), 帮助 (Help).
- Toolbar:** Standard toolbar icons.
- Status Bar:** 显示了电池电量 (86%)、信号强度、搜索图标、日期 (3月5日 周六) 和时间 (17:05:25).
- Project Structure:** 显示了项目 Lab00 的文件夹结构，包括 .idea, lib, out, src 等。
- Code Editor:** 正在编辑 LocalVar.java，代码如下：

```
public class LocalVar {
    public static void main(String[] args) {
        LocalVar localVar = new LocalVar();
        // System.out.println("局部变量 a = " + localVar.a); 引用错误, 下同
        localVar.print();
        // System.out.println("变化后的局部变量 a = " + localVar.a);
    }

    public void print() {
        int a = 10; // 局部变量, 下同
        double b = 20;
        System.out.println("在print()中的局部变量 a = " + a + ", b = " + b);
        a = 30;
        System.out.println("在print()中的局部变量 a = " + a + ", b = " + b);
    }
}
```

- Run Tab:** 显示了运行配置 LocalVar，命令为 /Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=61256:/Applications/IntelliJ IDEA.app/Contents/bin，输出显示了变量的值。
- Bottom Status:** 构建状态显示构建成功完成 (片刻之前)。