

Revision

COMPI400 - Wk 12

COMPI 400 Prac Exam

COMPI400 (not INFS) has a prac exam in
Week 13 labs:

- open book (paper, no internet)
- 2 hours
- 3 questions. Similar to content of assignments.

Written Exam

Both subjects have a written exam:

- cover all material in the course
- 20 multiple choice questions
- 2 long code comprehension questions
- **COMPI400 only:** 5 short-answer questions about design
- **INFSI609 only:** 1 long coding question

Written Exam

Java Class Library docs will be provided for:

- ArrayList
- String
- Random

You are not expected to know anything else from the JCL.

Types

What is the type of the variable **x** in the following statement?

```
x = true;
```

[A] int [B] boolean [C] double

[D] It is an object. [E] It has no type.

Expressions

What is the value of the variable **x** after the following code is executed?

```
int x = 3;  
int y = x + 5;  
x = y / x;
```

[A] 0 [B] 1 [C] 2 [D] 3 [E] 4

If statements

What output will the following program print to the console?

```
int x = 7;
if (x >= 6) {
    System.out.println("Up");
}
if (x <= 8) {
    System.out.println("Down");
} else {
    System.out.println("Stop");
}
```

- [A] "Up" [B] "Down" [C] "Stop"
[D] Both "Up" and "Down" [E] Nothing

While Loops

What output will the following program print to the console?

```
int x = 25;
while (x > 3) {
    x /= 3;
}
System.out.println(x);
```

[A] 0 [B] 1 [C] 2 [D] 3 [E] It will never finish.

For loops

How many times will the follow code output “Now” to the console?

```
for (int x = 0; x <= 3; x++) {  
    for (int y = 0; y < x; y++) {  
        System.out.println("Now");  
    }  
}
```

[A] 0 [B] 3 [C] 4 [D] 6 [E] 10

Arrays

What is the value of **a** after running the following code?

```
int[] a = new int[3];  
a[0] = 1;  
for (int i = 1; i < a.length; i++) {  
    a[i] = a[i-1] + i;  
}
```

A [0,1,2] B [0,2,4] C [1,2,2] D [1,2,3] E [1,2,4]

Strings

What is the value of **x** after this code is executed?

```
String three = "3";  
String five = "5";  
String sum = five + three;  
int x = sum.length();
```

[A] 1 [B] 2 [C] 3 [D] 8 [E] 53

Methods

What is the return type of this method?

```
public static int getHeight() {  
    return myHeight;  
}
```

[A] public [B] static [C] int

[D] myHeight [E] void

Random

Given the method:

```
public int dieRoll(  
    int num, int sides) {  
    Random rng = new Random();  
    return num * rng.nextInt(sides);  
}
```

Which of these is NOT a possible return value from the call: `dieRoll(2, 4)`

[A] 0 [B] 2 [C] 3 [D] 4 [E] 6

ArrayLists

What are the elements of `list` after this code is executed?

```
ArrayList<Double> list =  
    new ArrayList<Double>();  
list.add(1.0);  
  
for (int i = 0; i < 4; i++) {  
    double x = list.get(0);  
    x *= 2.0;  
    list.add(0, x);  
}
```

Polymorphism

Given the following definitions...

```
public interface Card {  
    public String getName();  
}  
  
public class RedCard implements Card {  
    public String getName() {  
        return "Red";  
    }  
    public int getSize() {  
        return 3;  
    }  
}
```

Polymorphism

...which of the following lines are legal code?

- A) `Card c = new Card();`
- B) `RedCard rc = new RedCard();`
`rc.getName();`
- C) `Card c = new RedCard();`
`c.getName();`
- D) `Card c = new RedCard();`
`c.getSize();`

Inheritance

Given the following definitions...

```
public class Person {  
    private String myName;  
  
    public Person(String name) {  
        myName = name;  
    }  
  
    public String getName() {  
        return myName;  
    }  
}
```

Inheritance

...continued...

```
public class Card {  
    private String myName;  
  
    public Card(String name) {  
        myName = name;  
    }  
  
    public String getName() {  
        return myName;  
    }  
}
```

Inheritance

Given the following definitions...

public

Design principles

(COMPI400 only)

What are the 7 stages of programming?

Why is consistent coding style important?

What is "abstraction"?

What is "encapsulation"?

Why should fields on a class be private?