Revision

COMPI400 - Wk 12
COMPI400 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
• COMP1400 only: 5 short-answer questions about design
• INFS1609 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?

\( x = \text{true}; \)

[D] It is an object.  [E] It has no type.
What is the value of the variable \( x \) after the following code is executed?

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

If statements

What output will the following program print to the console?

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

[D] Both "Up" and "Down"  [E] Nothing
While Loops

What output will the following program print to the console?

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

For loops

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

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

Arrays

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

```java
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]
What is the value of x after this code is executed?

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

Methods

What is the return type of this method?

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

[D] myHeight  [E] void
Random

Given the method:

```java
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)`

ArrayLists

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

```java
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...

```java
public interface Card {
    public String getName();
}

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

```java
public class Person {
    private String myName;

    public Person(String name) {
        myName = name;
    }

    public String getName() {
        return myName;
    }
}
```
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?