

CS 163/164 Exam 1 Review

L02, L03 - TA: Lee Ann Dunn

Class definition begins

red highlight
are variable
types

Variable Types:

int, double, char,
boolean, float

ends

parameters

* Tip: when given a code question, *
always look at the main() first! The main() is like the
"Controller" of the entire program.
So go there first and read line
by line.

these are different
files/classes.

Objects - Think of objects
as people! People have
parents, an object has a
"parent". Such as, my p
object is an instance of the
Pizza class. We "come"
from our parents, objects
"come" from certain
classes. In other terms,
objects are instances of
their class.

```
1 import java.util.Scanner;
2
3 public class Main {
4     public static void main(String[] args) {
5         Pizza p = new Pizza("cheese", 14, 1); // creating an object
6         Pizza myPizza = new Pizza("cream cheese", 10, 1); // creating another object
7         System.out.println(p.getSize()); // what will this print?
8         p.setSize(16);
9         System.out.println(p.getSize()); // now what will this print?
10    }
11 }
```

highlighted red - Just as people have
characteristics that are unique to their
personalities, objects have attributes that
are unique to that specific object. In line 6
when I create my object p, I passed
Pizza() three different parameters. I
passed it a String ("cheese") and two ints
(14 and 1). These are object attributes.
These are like the objects characteristics!

Expressions and Operators

- >, >=, <, <=, ==, !=
- Remember, these operators are only for comparing numbers! Never strings because you cannot compare Objects.

Methods

- methods are just blocks of code that execute a certain task. Such as, computePizzaPrice() will most likely do math inside of the method and return the correctly calculated pizza price. Keep in mind that every time you see "nameOfMethod()" that is a method call. If you see a method call at any point in a program, it will go to that method, execute the code inside the method, then return to the line in which that method was called.

Strings

- Strings are objects in Java. They are a sequence of characters in quotations (""). Such as, when you see "Hello, World", this is considered a String literal. The console will print out verbatim, what is inside those quotes.

Modulo

- Modulo is a mathematical operator. It gives you the remainder of a number. Such as,
10 % 3 // this equals 1
20 % 5 // this equals 0

Branching

```
int x = 20;
if (x > 30){
    System.out.println("greater than 30!");
}
else if (x > 20) { // won't go into here because 20 == 20 *not* 20 > 20
    System.out.println("greater than 20!");
}
else if (x >= 20) { // it will go here because it checks whether its > or whether it's ==
    System.out.println("greater than or equal to 20!");
}
else { // once it finds it's match, it'll skip the rest of the branches! (it'll skip this)
    System.out.println("no match :( ");
}
```

For Loops

```
      declaration    conditional    operation
      ~~~~~          ~~~~~          ~~~~~
for (int i = 0; i < 10; i++) {
    System.out.print(i + ", ");
} // prints: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9,
// it starts off with i=0 then checks the condition i<0
// which is true so it increments i to 1. therefore, next
// time it comes back to the condition, i will be 1.
```

While Loops

```
while (x > 0) {
    System.out.println("still greater than 0!");
}
```

do-while loops

```
do { // do while loops will always *do* first, even if the condition is wrong!
    System.out.println("x is " + x);
}
while (x > 0);
```