CS3330 LAB3

Class UML to Java, and using the Random class

LAB INFORMATION

Labs will be posted on Blackboard

You are only allowed to download it during your lab! Download your lab now and save it on your babbage.

Note: You'll be reported to the provost's office if caught sharing lab document with anyone else!

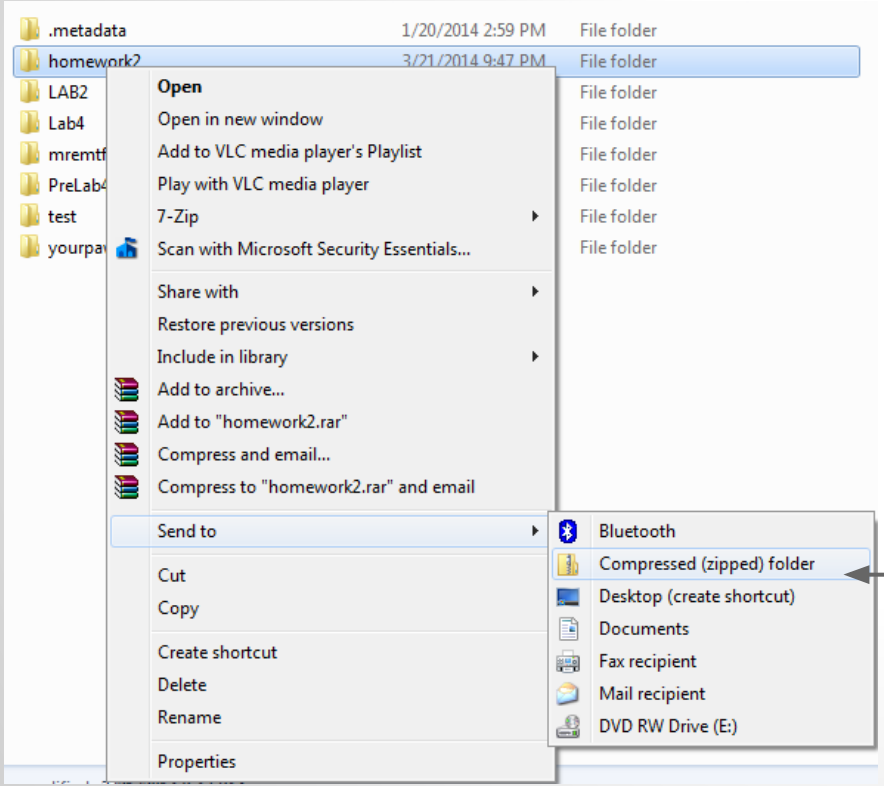
Adding the header is required from now on

At the **VERY TOP** of **EVERY .JAVA FILE** must have the following commented in your code

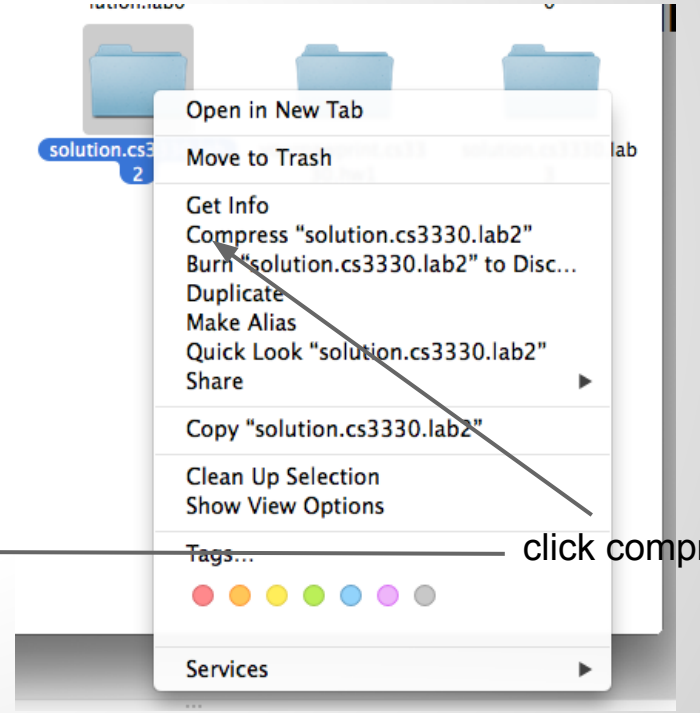
```
/**
* Name:
* Date:
* Section:
* Submission Code:
**/
```

To compress your assignment use your OS to zip up your project.

Windows



Mac OSX



click compress

Submitting has changed, NO MORE BABBAGE!

Use the web submission form now online at:

https://submit.cs.missouri.edu/app/

Login with your **pawprint and pawprint password**. You will be directed to submit your assignment. If you receive a different view, email your TA. Image on next slide. Make sure to click the logout button in the top right corner when done submitting.

logout

cs_submit

Select Course...

Section...

Assignment...

Choose a file

Submit as mremtf

UML Class Basics

Class UML Basics

- stands for private restriction
+ stands for public restriction
# stands for protected restriction

Note: By default, it's protected.

Attributes Declared

<Access> <VariableName> : <VariableType>

Example:

- fName : String

+ lName : String

mName : String

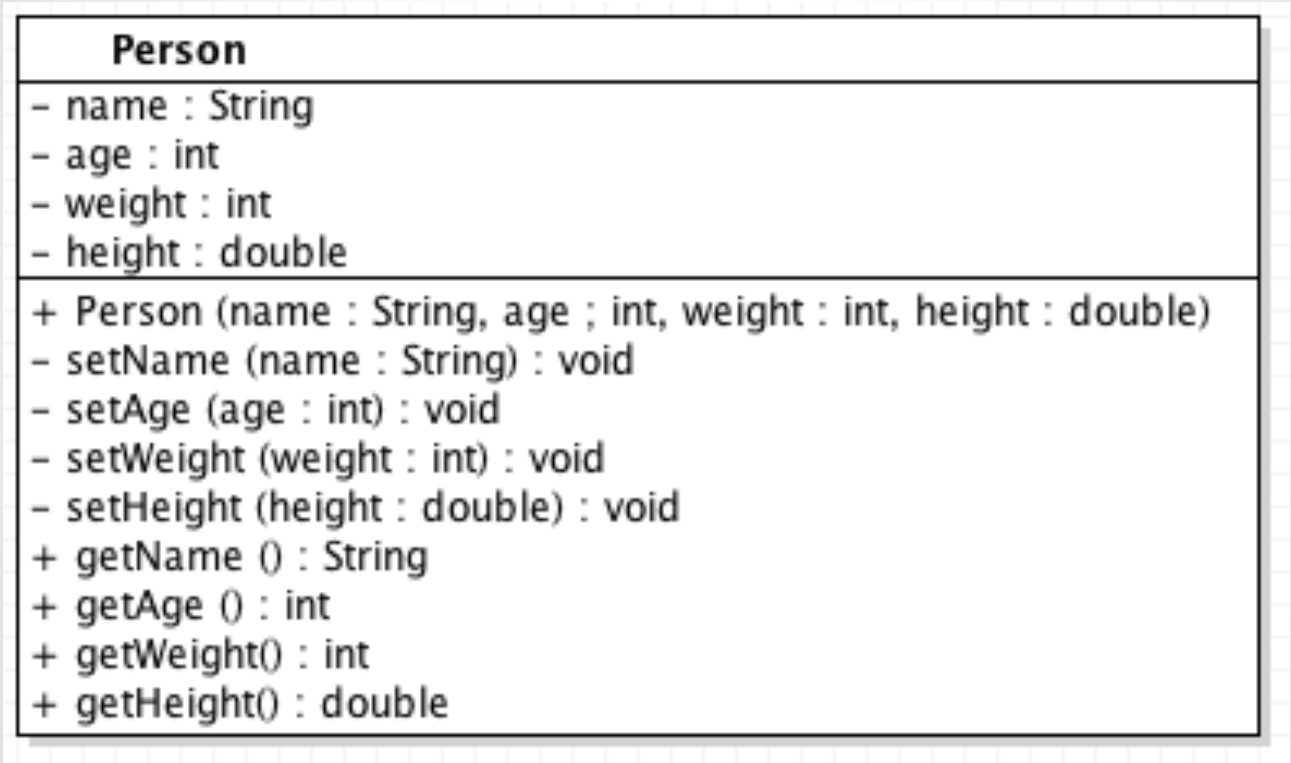
Methods Declared

<Access> <NameOfMethod>(<paramName> : <paramType>... etc) : <returnType>

Example:

+ findMax(age1 : int, age2 : int) : int
+ findMax(ageArray: int[]) : int

Class Diagram



Java Code

```
public class Person {
	private String name;
	private int age;
	private int weight;
	private double height;

	//Constructor
	public Person(String name, int age, int weight, double height) {
		this.setName(name);
		this.setAge(age);
		this.setWeight(weight);
		this.setHeight(height);
	}

	// Setters
	private void setName(String name) {
		 this.name = name;
	}

	private void setAge(int age) {
		this.age = age;
	}
```

```
    private void setWeight(int weight) {
        this.weight = weight;
    }
    private void setHeight(double height) {
        this.height = height;
    }

    //Getters
    public String getName() { return this.name; }

    public int getAge() { return this.age; }

    public int getWeight() { return this.weight; }

    public double getHeight() { return this.height; }
}
```

Random Class

Allows us to randomly create a value with a uniform chance of being picked.

Random randomGenerator = new Random();

Important Methods to Know

```
randomGenerator.nextInt(5);            //integer values between 0 and 4
randomGenerator.nextDouble(3.14);      // decimal values between 0 and 3.14
```

Lab Challenge 1

How would I create a random integer from 1 to 100?

How would I randomly select an element from the given array below?

```
int[] data = new int[3];
data[0] = 1; data[1] = 2; data[2] = 4;
```

Lab Challenge 2

Pick one of the following things below and draw a possible UML class diagram. Your diagram must have 3 attributes, a constructor, and 3 behaviors.

Animal

Building

Car

Computer