

Northeastern Illinois University  
CS200 Programming II, Fall 2018

Homework 1

**Due: Thursday, September 6, 2018 at 1:00 pm**

**Problem 1:**

Create a Java class named `Wizard`. The class should have the following instance variables, constructors, and instance methods:

- An instance variable of type `int` named `health`.
- An instance variable of type `String` named `weapon`.
- An instance variable of type `String` named `spell`.
- A 'no arg' constructor that sets `health` to 100, `weapon` to "Staff", and `spell` to "Arcane Arrow".
- An overloaded constructor that takes three parameters of the appropriate type and sets the instance variables accordingly.
- A method named `drinkPotion` that takes no parameters and returns no value, the method increases the instance variable `health` by 10.
- An overloaded method named `drinkPotion` that takes an `int` parameter named `potion`, and returns no value, the method increases the instance variable `health` by the value of parameter `potion`.
- A method named `wizardDetails` which takes no parameters, and returns no value. The method prints the Wizard's details in the format shown on the sample output next page.

## Instructions

- Download the needed files and look for `TestWizard.java`
- Do NOT modify `TestWizard.java`
- Compile both `Wizard.java` and `TestWizard.java`
- Run `TestWizard`
- If you created `Wizard.java` correctly, your output should look exactly as the output below
- Place `Wizard.java` (along with Problem 2 below) in a zip file named `YourName-HW1.zip`

```
This Wizard has a total health of: 100
This Wizard carries a Staff and can cast Arcane Arrow.
```

```
This Wizard has a total health of: 110
This Wizard carries a Staff and can cast Arcane Arrow.
```

```
This Wizard has a total health of: 135
This Wizard carries a Staff and can cast Arcane Arrow.
```

```
This Wizard has a total health of: 90
This Wizard carries a Wand and can cast Fire Bolt.
```

```
This Wizard has a total health of: 100
This Wizard carries a Wand and can cast Fire Bolt.
```

```
This Wizard has a total health of: 105
This Wizard carries a Wand and can cast Fire Bolt.
```

### Problem 2:

What is the exact output of the main method in the following Java program? Hand trace this code, keeping track of values of instance variables when/if they change. Note how there are no print statements in method main, but there are print statements in the Book class.

```
public class Book
{
    public int c;
    public int s;

    public Book()
    {
        this.c = 1;
        this.s = 1;
        System.out.println("Chapter 1, Section 1");
    }

    public Book(int c, int s)
    {
        this.c = c;
        this.s = s;
        System.out.print("Chapter " + this.c );
        System.out.println(", Section " + this.s);
    }

    public void reading()
    {
        System.out.println("Reading Chapter " + this.c);
    }
    public void reading(boolean b)
    {
        reading();
        System.out.print("Reading Chapter " + this.c);
        System.out.println(", Section " + this.s);
    }
}
```

```
public class TestBook
{
    public static void main(String[] args)
    {
        Book bk1 = new Book();
        Book bk2 = new Book(2, 7);

        bk2.reading();
        bk1.reading(true);
        Book bk3 = new Book();
        bk3 = bk2;
        bk3.reading(true);
        bk3.reading();
        bk1.reading();
        bk2.reading(true);
    }
}
```

### General Instructions:

No hard copies will be collected. Do not send your files through e-mail! You should submit your work on D2L by the due date. See syllabus for late homework policy.

### What to turn in:

There should be one `Wizard.java` file and one scanned pdf of your hand trace. Place these files into a zip file and name it `YourName-HW1.zip`, and submit the zip file to the **Homework 1** folder in D2L.

Do **not** turn in .class files.

**Helpful Links:**

[How to zip files in Mac OS](#)

[How to zip files in Windows](#)