Welcome to CSSE 220

- We are excited that you are here:
  - Start your computer & Eclipse
  - Pick up a quiz from the back table
    - Answer the first two questions

Goals for this course

- Move from Python to Java
  - Lots of little programs in the first few weeks
- Move from writing method bodies to writing whole classes from scratch
  - Learn how to design programs
- Break up larger programs into multiple classes
  - Arcade Game project
- Learn algorithms and data storage
  - Maps, Sorting, mixed patterns and problem solving

Course Introduction, Starting with Java

CSSE 220—Object-Oriented Software Development

Rose-Hulman Institute of Technology

Agenda

- Instructor intro
- Critical links
- Verify eclipse and subclipse configuration
- We write some java code
  - Conditionals
  - Strings
  - Loops

Instructor Info

- Jason Yoder
    - Visiting Professor CSSE 2017-2018
    - You can call me:
        - Jason
        - Professor Yoder
    - Don’t call me:
        - ~~Dr. Yoder~~ (more info at end of class)

Critical Logistics

- You have 2 homework assignments in the very near future
- See all assignment due dates here:

https://www.rose-hulman.edu/class/csse/csse220/201830/Schedule/Schedule.htm

- We will only go over the course policies if we have time, but they are covered in detail in the syllabus here:

https://www.rose-hulman.edu/class/csse/csse220/201830/syllabus.html

Agenda

- ~~Instructor intro~~
- ~~Critical links~~
- **Verify Eclipse and Subclipse configuration**
- We write some java code
  - Conditionals
  - Strings
  - Loops

Opening Eclipse

- Start Eclipse
  - Go to C:\Program Files\eclipse
  - Double-click “eclipse.exe”
- When prompted for the workspace, enter:
  - C:\EclipseWorkspaces\csse220 (or any other place you like)
- If not prompted for the workspace, after Eclipse loads:
  - Click File → Switch Workspaces → Other
  - Enter path above

SVN Repositories Window

- You display the SVN Repositories Window by doing the following:
  - Click Window → Show View → Other…
  - Expand SVN
  - Select “SVN Repositories”
  - Click OK

- Once you see SVN, please help your neighbor if needed.

Add Your Repository

- Click SVN → "Checkout projects from SVN"
  - Select "Create a new repository location"
- Click Next
- Type the following URL, replace the user in blue with your username:

  http://svn.csse.rose-hulman.edu/repos/csse220-201830-user

  Mine would be:

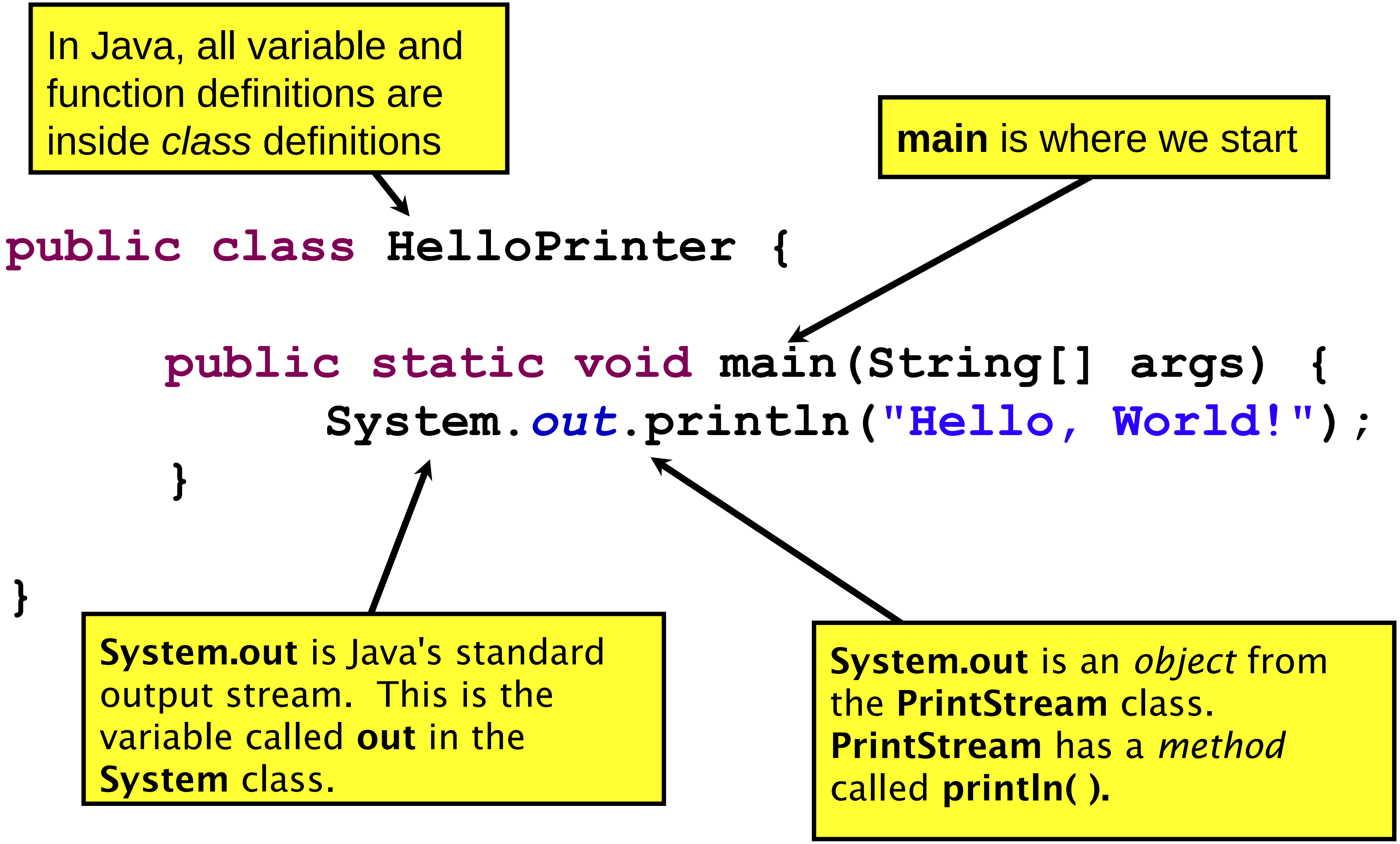
  http://svn.csse.rose-hulman.edu/repos/csse220-201830-yoder
- Click Next

Checkout Project for Today

- If you received an error at the end of the last slide,
  - let myself or a TA know immediately
  - Use https://svn.csse.rose-hulman.edu/password/ to reset your SVN password
- Otherwise, expand your repository and select “JavaIntro”
- Click Finish
  - Do the same for HW1 now if you’d like, or you can wait and check it out later

Let’s write hello world together

A First Java Program



In Java, all variable and function definitions are inside *class* definitions

main is where we start

```
public class HelloPrinter {

    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }

}
```

System.out is Java's standard output stream. This is the variable called **out** in the **System** class.

System.out is an *object* from the **PrintStream** class. **PrintStream** has a *method* called **println( ).**

Q6

Agenda

- ~~Instructor intro~~
- ~~Critical links~~
- ~~Verify eclipse and subclipse configuration~~
- **We write some java code**
  - **Conditionals**
  - **Strings**
  - **Loops**

In Class Coding

- You can do this in pairs or on your own
- There are 3 files:
  - ConditionalExamples.java
  - StringProbs.java
  - LoopProbs.java
- Each file contains several solved functions and several unsolved functions. Understand the code in the solved functions, and then use that code to help you write the unsolved functions.
- If you have a problem you can't quickly debug, or you need a hint – call myself or the TA over
- Test your code to ensure you're right
  - In ConditionalExamples.java, modify "main" to call your new functions with test values
  - In the String/Loop probs, run the corresponding Test file to test your code

What are Types?

- All variables in Java have a “type”
- Describes the data that can be stored in a variable
  - String – text only
  - short/int/long – whole numbers only
  - float/double – numbers with decimals
  - boolean – true or false
  - char – a single text character
- Classes – Class names are also types, let you define your own, more complex, types

Strings

- String myString = “hello”;
- String otherString = new String(“hello2”);

- Java’s way of storing text data
- Has many handy functions like substring, charAt, etc. that you will slowly learn
- But how do you find out about these cool functions?

Java API Documentation

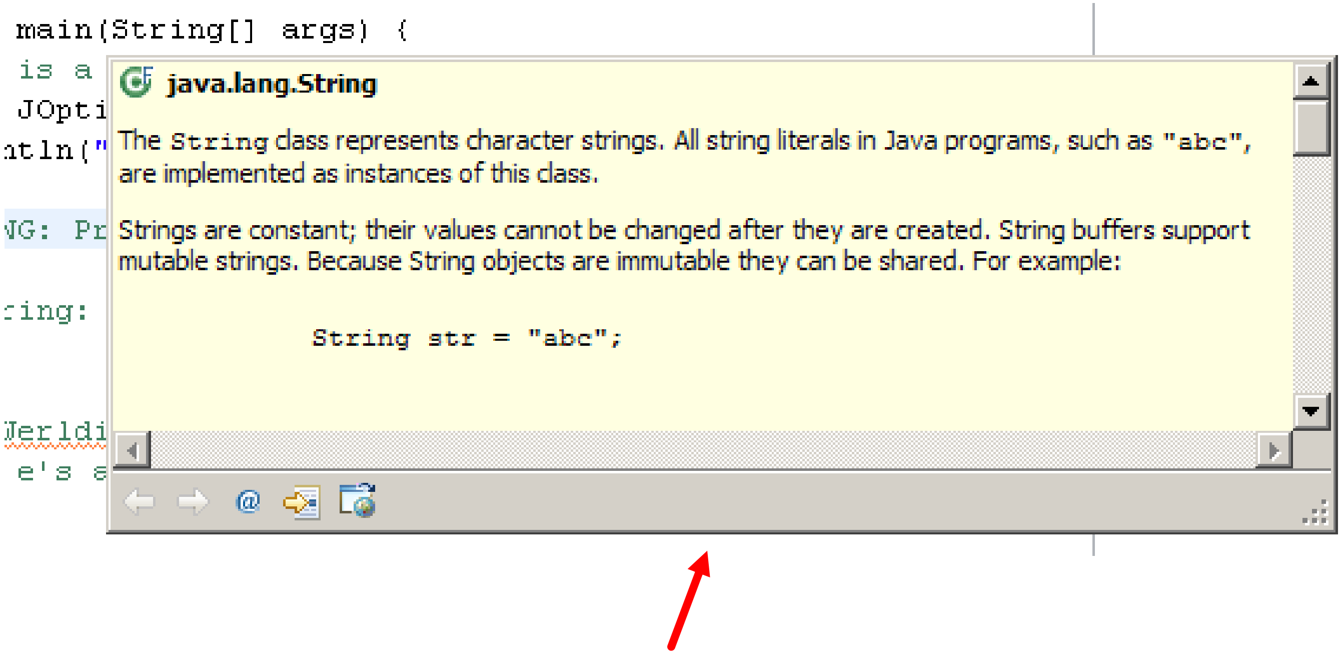
- What’s an API?
  - Application Programming Interface
- The Java API on-line
  - Google for: java api documentation 7
  - Or go to: http://download.oracle.com/javase/8/docs/api/
  - Also hopefully on your computer at
  - C:\Program Files\Java\jdk1.8.0_9\docs\api\index.html

You need the 7 (or 8) to get the current version of Java

Note: Your version may be something other than 8.0_9. We recommend that you bookmark this page in your browser, so you can refer to it quickly, with or without an internet connection.

Java Documentation in Eclipse

- Setting up Java API documentation in Eclipse
  - Should be done already,
- Using the API documentation in Eclipse
  - Hover text
  - Open external documentation (Shift-F2)



java.lang.String

The `String` class represents character strings. All string literals in Java programs, such as `"abc"`, are implemented as instances of this class.

Strings are constant; their values cannot be changed after they are created. String buffers support mutable strings. Because String objects are immutable they can be shared. For example:

```
String str = "abc";
```

Review Loops: while & for Loops

- While loop syntax: Similar to Python
    - while (condition) {
      statements
    - }
- For loop syntax: Different from Python
    - for (initialization ; condition ; update) {
      statements
    - }

In both cases, curly braces optional if only one statement in body; but be careful!

HW1 DUE
BEFORE NEXT SESSION

IT'S ON THE SCHEDULE PAGE.
(IT IS YOUR RESPONSIBILITY TO KEEP UP WITH THE SCHEDULE PAGE)

AS ALWAYS, EMAIL ME IF YOU HAVE ANY QUESTIONS