Getting to know your Java Programming Environment

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Objectives

At the end of the lesson, the student should be able to:

- Create a Java program using text editor and console in the Linux, Solaris, Windows, Mac OS, or any other OS environment

- Differentiate between syntax-errors and runtime errors

- Create a Java program using either NetBeans or Eclipse

Definitions

- Console (terminal window)
    - This is where you type in commands
    - Examples are Terminal (Linux), Command Prompt (Windows)

Definitions

- Text Editor
  - Examples: Notepad, Wordpad, Vi, Emacs

Definitions

- Integrated Development Environment (IDE) provides complete application development environment
  - Text editor (code editor)
  - GUI builder
  - Compiler
  - Debugger
  - Tester
- Examples
  - Eclipse, NetBeans

My First Java Program

```
1  public class Hello {
2
3     /**
4      * My first Java program
5      */
6    public static void main( String[] args ){
7
8            //prints the string "Hello world" on screen
9            System.out.println("Hello world");
10
11    }
12 }
```

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Using Text Editor and Console

- Step 1: Start the Text Editor
  - To start the Text Editor in Linux, click on Menu-> Accessories-> Text Editor

- Step 2: Open Terminal
  - To open Terminal in Linux, click on Menu-> System Tools-> Terminal

- Step 3: Write your the source code of your Java program in the Text Editor

Using Text Editor and Console

- Step 4: Save your Java Program
  - Filename: *Hello.java*
  - Folder name: *myjavaprograms*
  - To open the Save dialog box, click on the File menu found on the menubar and then click on Save.
  - If the folder myjavaprograms does not exist yet, create the folder

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Using Text Editor and Console

- Step 5: Compiling your program
    - Go to the Terminal window
    - Go to the folder *myjavaprograms* where you saved the program
    - To compile a Java program, we type in the command:
        ```
        javac [filename]
        ```
    - So in this case, type in:
        ```
        javac Hello.java
        ```

        During compilation, javac adds a file to the disk called `[filename].class`, or in this case, `Hello.class`, which is the actual bytecode.

Using Text Editor and Console

- Step 6: Running the Program
  - To run your Java program, type in the command:
    ```
    java [filename without the extension]
    ```
  - so in the case of our example, type in:
    ```
    java Hello
    ```
  - You can see on the screen after running the program:
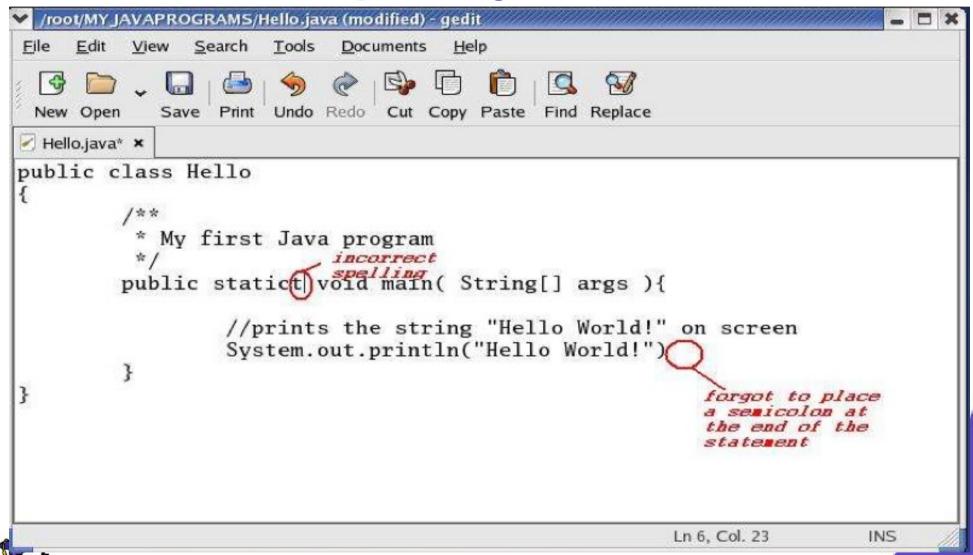   ```
    "Hello world!"
    ```

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# Errors : Syntax Errors

- Syntax Errors Syntax

    - errors are usually typing errors

- Common Syntax Errors:

    - misspelled a command in Java

    - forgot to write a semi-colon at the end of a statement

# Example: Syntax Error

# Example: Syntax Error

# Errors: Runtime Errors

- ## Run-time Errors

  - Errors that will not display until you run your program

  - Even programs that compile successfully may display wrong answers if the programmer has not thought through the logical processes and structures of the program.

  - Examples:

    - You want your program to print 100 strings of "Hello world", but it only printed 99.

    - Your program gets an input from the user, but the user inputted a character, and so your program crashes/terminates

# Summary

- My First Java Program

- Using a Text Editor and Console

  - Write program

  - Compile program

  - Run program

- Errors

  - Syntax Errors

  - Runtime Errors

# Thank you!

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