

Intro to CSC 116 & Java

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Outline

- Syllabus
- Intro to Programming
- Programming Languages
- Java
- Errors and Common Problems
- Comments
- Java Keywords

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Intro to Programming

- “A **programming language** or **computer language** is a standardized communication technique for expressing instructions to a computer.” [Wikipedia – Programming Language]
- Syntax – structure/pattern of the language
- Semantics – meaning or behavior
- 3 levels of computer programming languages
 - Machine language
 - Assembly language
 - High-level languages

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Vocabulary

- Source Code – human readable code
- Machine Code – machine readable code (1s and 0s)
- Compiler – translates source code into machine code

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Java

- Uses Virtual Machine
- Virtual Machine – converts Java Machine Code (also called bytecode) into native machine code
- Write once, run everywhere
- Object-Oriented (OO) programming language

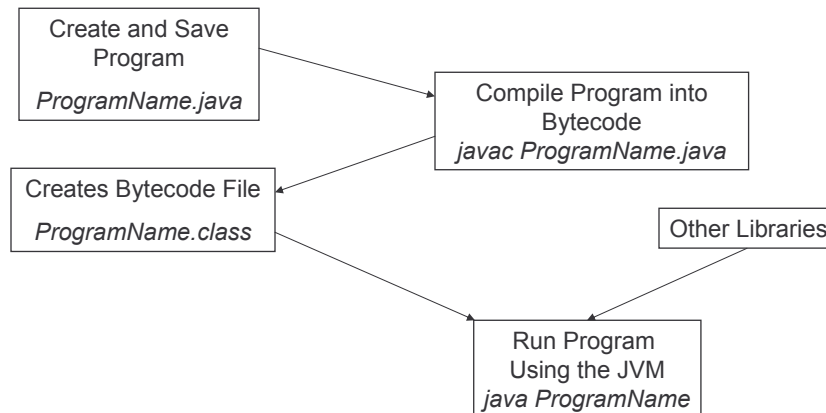
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Java @ NCSU

- In terminal window
 - eos% add jdk142
 - Adds the Java libraries to your class path
 - eos% javac ProgramName.java
 - The source code file should end in .java. The javac command compiles the source code into bytecode. The byte code is stored in ProgramName.class.
 - eos% java ProgramName
 - Runs the program using the Virtual Machine.

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Running a Java Program



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Errors

- Compile Errors – occur when code is compiled
- Runtime Errors – occur when program is running
- Logic Errors – BUGS!

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Common Problems

- Omitting semicolons
- Misspelling words
- Forgetting quotation marks, parentheses, or curly braces.

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Java Comments

- Comments are used to tell others what your program does – maintainability!
- `//` Comment goes to the end of the line
- `/*` Comment can go across several lines `*/`

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Javadoc

- Special comments used to create APIs
- `/**`
 - * Calculate body mass index
 - * @param height in inches
 - * @param weight in pounds
 - * @return body mass index
- `*/`

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Java Keywords

- Words that have special meaning in Java
- Cannot be used as names of classes, methods, or variables
- Ex: public, static, void, private, class, return

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Java Identifiers

- Used to name classes, methods, and variables in programs
- Consists of a letter followed by zero or more letters or digits
 - Letters: 26 English alphabetic characters (upper and lower case), \$, and _ (underscore)
 - Digits: 0 through 9
 - Case Sensitive

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Valid Identifier?

- \$abcdefg
- _abcdefg
- 1234567
- A
- a
- abcd.efgh
- ABCD/EFGH

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References

- <http://www.webopedia.com/TERM/A/API.html>
- http://www.imm.dtu.dk/~riis/Wiley_book/wiley.html
- http://en.wikipedia.org/wiki/Programming_language