

1. What extension is commonly used for Jasmin source programs? Give your answer as an example.
 - Examplefile.j
2. What is the command to assemble a Jasmin program and what is the output of the command? Give your answer as an example.
 - Command to assemble: `jasmin Examplefile.j` Output: `Examplefile.class`
3. What is the file extension for a JVM machine code file produced by Jasmin or the Java compiler? Give your answer as an example.
 - Examplefile.class
4. What is the command to run a Jasmin program? Give your answer as an example.
 - Command to run jasmin program: `java Examplefile`
5. What is the command to disassemble a Java class file into a Jasmin program? Give your answer as an example.
 - Command to disassemble: `javap Examplefile.class` Output: `Examplefile.j`
6. What is an assembler directive and how do you recognize it in a Jasmin program?
 - Example: `.limit` → assembler in jasmin start with `.` (period)
7. What is the purpose of the `.limit` assembler directive?
 - set the maximum number of stack elements in program
8. What is the Jasmin `invokevirtual` instruction and what is it used for in the HelloWorld sample program on p67 of Juola? What are the arguments for the instruction?
 - `invokevirtual` for invoking virtual methods on class
9. What is the Jasmin `invokespecial` instruction and what is it used for in the HelloWorld sample program on p67 of Juola? What are the arguments for the instruction?
 - `invokespecial` uses to initialize an object.
10. What is the Jasmin `invokestatic` instruction and what is it used for? It is not used in the HelloWorld sample program on p67, but look it up in Juola Apx B and explain what it is used for. What are the arguments for the instruction?
 - `invokestatic` for invoking static methods on class?
11. What is the Jasmin `getstatic` instruction and what is it used for in the HelloWorld program on p67 of Juola? What are the arguments for the instruction?
 - `getstatic` stores what to print out?
12. Using the table on p205 of Juola, try to figure out the meaning of the type description nomenclature on the trailing end of both the main declaration and the `invokevirtual`, `invokespecial`, and `getstatic` instructions.

13. What is the purpose of "boilerplate" code at the beginning of the HelloWorld sample program on p67 of Juola? What do you think the `init()` method does?
 - initiate as virtual machine to run the program?
14. What is the *minimum* `.limit stack` needed for an `Average.j` program that averages the numbers 25, 18, 5, 8, 22? Hand-write out the Jasmin program along with your answer. You may assume the program is a straight-forward implementation rather than something especially clever.
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15. What is the *minimum* `.limit locals` needed for the average program in the previous question? Explain your answer.