| Name | Tobi Fleckner |  |  |  |  |  |
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| Topic | Detail |  |  |  |  |  |
| What is Java? |  |  |  |  |  |  |
|  | Describe the features of Java |  |  | x |  |  |
|  | Describe the real-world applications of Java |  |  | x |  |  |
| Java Basic |  |  |  |  |  |  |
|  | Describe the Java Development Kit (JDK) and the Java Runtime Environment (JRE) |  |  | x |  |  |
|  | Describe the components of a basic Java program |  |  | x |  |  |
|  | Describe the components of object-oriented programming |  |  | x |  |  |
|  | Compile and execute a Java program |  |  | x |  |  |
| Basic Java Elements |  |  |  |  |  |  |
|  | Identify the conventions to be followed in a Java program |  |  | x |  |  |
|  | Use Java reserved words |  |  | x |  |  |
|  | Use single-line and multi-line comments in Java programs | x |  |  |  |  |
|  | Import other Java packages to make them accessible in your code | x |  |  |  |  |
|  | Describe the java.lang package | x |  |  |  |  |
| Working with Data Types |  |  |  |  |  |  |
|  | Declare and initialize variables including a variable using final | x |  |  |  |  |
|  | Cast a value from one data type to another including automatic and manual promotion | x |  |  |  |  |
|  | Declare and initialize a String variable | x |  |  |  |  |
| Java Operators |  |  |  |  |  |  |
|  | Use basic arithmetic operators to manipulate data including +, -, \*, /, and % | x |  |  |  |  |
|  | Use the increment and decrement operators | x |  |  |  |  |
|  | Use relational operators including ==, !=, >, >=, <, and <= | x |  |  |  |  |
|  | Use arithmetic assignment operators | x |  |  |  |  |
|  | Use conditional operators including &&, ||, and ? | x |  |  |  |  |
|  | Describe the operator precedence and use of parenthesis |  | x |  |  |  |
| String Class |  |  |  |  |  |  |
|  | Develop code that uses methods from the String class |  | x |  |  |  |
|  | Format Strings using escape sequences including %d, %n, and %s | x |  |  |  |  |
| Random und Math Class |  |  |  |  |  |  |
|  | Use the Random class | x |  |  |  |  |
|  | Use the Math class | x |  |  |  |  |
| Decision Statements |  |  |  |  |  |  |
|  | Use the decision-making statement (if-then and if-then-else) | x |  |  |  |  |
|  | Use the switch statement | x |  |  |  |  |
|  | Compare how == differs between primitives and objects | x |  |  |  |  |
|  | Compare two String objects by using the compareTo and equals methods | x |  |  |  |  |
| Looping Statements |  |  |  |  |  |  |
|  | Describe looping statements |  | x |  |  |  |
|  | Use a for loop including an enhanced for loop | x |  |  |  |  |
|  | Use a while loop | x |  |  |  |  |
|  | Use a do- while loop | x |  |  |  |  |
|  | Compare and contrast the for, while, and do-while loops | x |  |  |  |  |
|  | Develop code that uses break and continue statements | x |  |  |  |  |
| Debugging & Exception Handling |  |  |  |  |  |  |
|  | Identify syntax and logic errors |  | x |  |  |  |
|  | Use exception handling |  | x |  |  |  |
|  | Handle common exceptions thrown | x |  |  |  |  |
|  | Use try and catch blocks | x |  |  |  |  |
| Arrays und ArrayList |  |  |  |  |  |  |
|  | Use a one-dimensional array | x |  |  |  |  |
|  | Create and manipulate an ArrayList | x |  |  |  |  |
|  | Traverse the elements of an ArrayList by using iterators and loops including the enhanced for loop | x |  |  |  |  |
|  | Compare an array and an ArrayList | x |  |  |  |  |
| Classes and Constructor |  |  |  |  |  |  |
|  | Create a new class including a main method | x |  |  |  |  |
|  | Use the private modifier | x |  |  |  |  |
|  | Describe the relationship between an object and its members |  | x |  |  |  |
|  | Describe the difference between a class variable, an instance variable, and a local variable |  | x |  |  |  |
|  | Develop code that creates an object's default constructor and modifies the object's fields | x |  |  |  |  |
|  | Use constructors with and without parameters | x |  |  |  |  |
|  | Develop code that overloads constructors | x |  |  |  |  |
| Java Methods |  |  |  |  |  |  |
|  | Describe and create a method | x |  |  |  |  |
|  | Create and use accessor and mutator methods |  | x |  |  |  |
|  | Create overloaded methods | x |  |  |  |  |
|  | Describe a static method and demonstrate its use within a program | x |  |  |  |  |

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