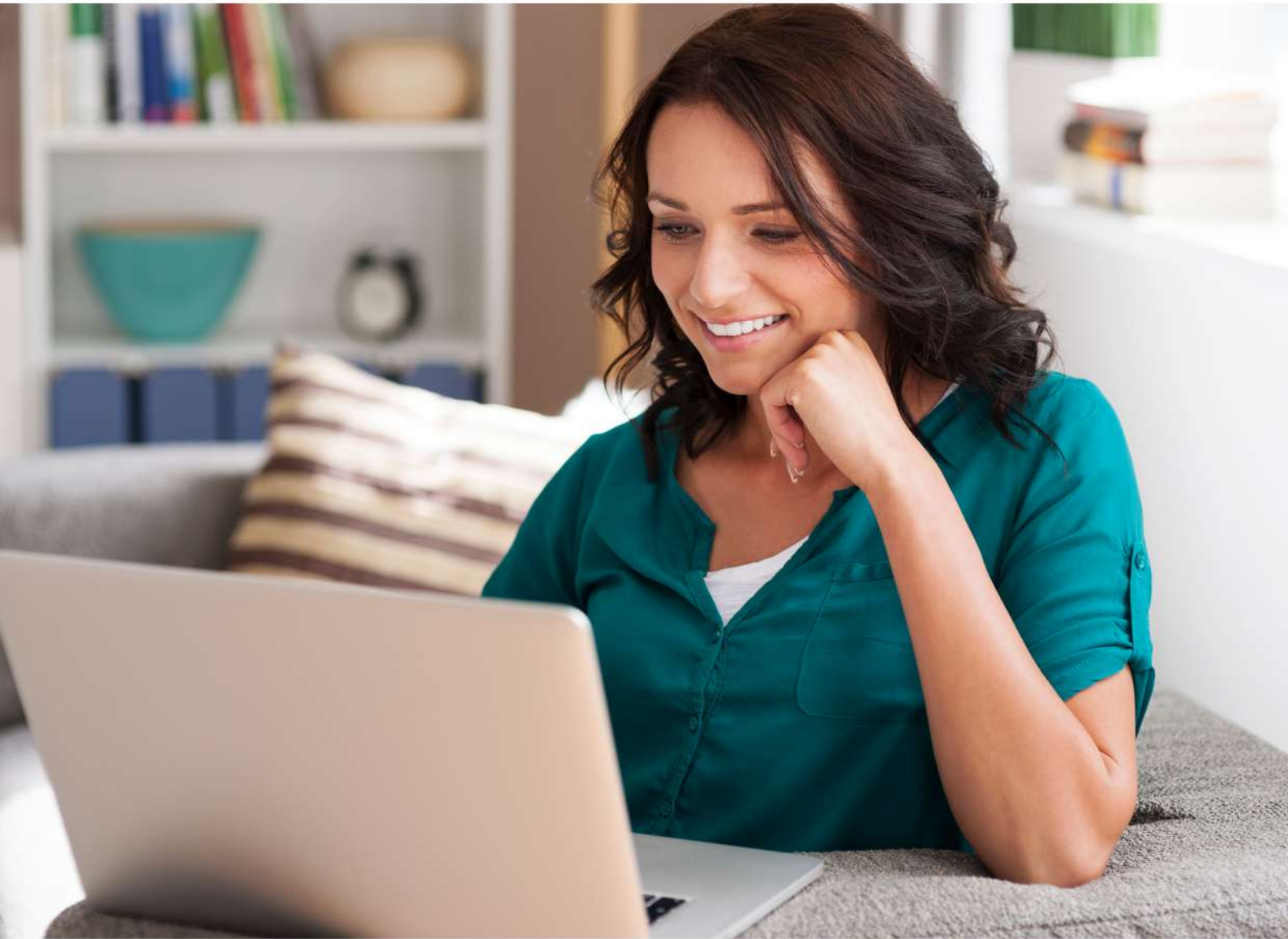


Java Foundations



Online Course



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Course Modules

1. What Is Java?

- Describe the features of Java
- Describe the real-world applications of Java

2. Java Basics

- Java Development Kit (JDK) & Java Runtime Environment (JRE)
- Describe the components of object-oriented programming
- Describe the components of a basic Java program
- Compile and execute a Java program

3. Basic Java Elements

- Identify the conventions to be followed in a Java program
- Use Java reserved words
- Use single-line and multi-line comments in Java programs
- Import other Java packages to make them accessible in your code
- Describe the java.lang package



Course Modules

4. Working with Java Data Types

- Declare and initialize variables including a variable using final
- Cast a value from one data type to another
- Declare and initialize a String variable

5. Working with Java Operator

- Use basic arithmetic operators to manipulate data +, -, *, /, & %
- Use the increment and decrement operators
- Use relational operators including ==, !=, >, >=, <, and <=
- Use arithmetic assignment operators
- Use conditional operators including &&, ||, and ?
- Describe the operator precedence and use of parenthesis

6. Working with the String Class

- Develop code that uses methods from the String class
- Format Strings using escape sequences including %d, %n, and %s



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7. Working with the Random and Math Classes

- Use the Random class
- Use the Math class

8. Using Decision Statements

- Use the decision making statement (if-then and if-then-else)
- Use the switch statement
- Compare how == differs between primitives and objects
- Compare 2 String objects by using the compareTo & equals methods

9. Using Looping Statements

- Describe looping statements
- Use a for loop including an enhanced for loop
- Use a while loop
- Use a do- while loop
- Compare and contrast the for, while, and do-while loops
- Develop code that uses break and continue statements



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10. Debugging and Exception Handling

- Identify syntax and logic errors
- Use exception handling
- Handle common exceptions thrown
- Use try and catch blocks

11. Arrays and ArrayLists

- Use a one-dimensional array
- Create and manipulate an ArrayList
- Traverse the elements of an ArrayList by using iterators & loops
- Compare an array and an ArrayList

12. Classes and Constructors

- Create a new class including a main method
- Use the private modifier
- Describe the relationship between an object and its members
- Diff btwn a class variable, an instance variable, & a local variable
- Develop code that creates an object's default constructor
- Use constructors with and without parameters
- Develop code that overloads constructors





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