

1. Boolean Expressions and Logical Operators

- Introduction to boolean (true/false) expressions.
- Use of relational operators (>, <, ==, !=, etc.) and logical operators (&&, ||, !).
- Short-circuited evaluation of logical expressions (where && and || may skip evaluating the right-hand side if the left-hand side already determines the result).

2. Conditional Statements (if, if-else)

- How to direct the flow of a program using conditions.
- Proper use of braces to create blocks and the significance of indentation.
- Nested if statements for more complex decision-making.

3. Comparing Different Types of Data

- The nuances of comparing floating-point numbers (and why direct equality checks can be problematic).
- Comparing characters using their underlying numeric (Unicode) values.
- Comparing strings using `equals` (for equality) and `compareTo` (for lexicographic ordering).
- Distinguishing between equality of object references (`==`) and object content (`equals`).

4. Repetition (while Loops)

- The basic structure and logic of the `while` statement for repeated execution.
- The concept of sentinel values to terminate input-driven loops.
- Ensuring loops terminate properly to avoid infinite loops.
- Nested while loops for multidimensional repetition scenarios.

5. Iterators

- The idea of an iterator that processes a collection of items one by one.
- How the `Scanner` class implements the `Iterator` interface (`hasNext`, `next`, etc.).

6. The ArrayList Class

- An introduction to `ArrayList<E>` for managing a dynamic list of objects.
- Key methods like `add`, `remove`, `get`, `size`, and the concept of indices starting at 0.
- The ability to grow and shrink an `ArrayList` as needed, in contrast to a fixed-size array.

These topics lay the groundwork for making decisions (conditionals), handling repetition (loops), and working with collections (iterators and `ArrayList`), all of which are crucial for structuring more complex programs.