

Intro to Programming with Java – PROGRAM

0. Primitive data types. Variables

- Integer types
- Floating-point types
- Boolean type
- Char
- String
- Object
- Variables. Using variables
- Literals

1. Operators. Expressions

- Arithmetic operators
- Comparison operators
- Other operators
- Implicit and Explicit Type Conversion
- Expressions

2. Using console

- Printing to the console
- Reading from the console

3. Conditional statements

- **if** and **if-else** statements
- Nested **if** statements
- **switch-case** statement

4. Loops

- **while** loops
- **do ... while** loops
- **for** loops
- Nested loops

5. Methods

- Declaring methods
- Calling methods
- Using parameters
- Returning values

6. Arrays

- Declaring and creating arrays
- Accessing array elements
- Inputting and outputting arrays

- Processing arrays with for loops
- Multidimensional arrays

7. Numeral Systems

- Numeral systems
- Computer representation of numbers

8. Classes and objects

- Defining simple classes. Declaring fields.
- Using classes
- Constructors
- Accessing fields
- Calling static and instance methods

9. Strings and string manipulation

- Basic operations with strings – comparison, concatenation, extracting substring, searching
- More operations with strings – replacing substrings, deleting substrings
- Using the StringBuilder class

10. Basic data structures

- Lists – ArrayList class
- Stacks – Stack class
- Queues – Queue class
- Trees
- Hash tables – Hashtable class

11. Basic input/output – text files

- Streams
- Reading text files
- Writing text files
- Handling I/O exceptions

12. Object-oriented programming – fundamental concepts

- Inheritance
- Encapsulation and abstraction
- Cohesion and coupling
- Polymorphism

Training Duration – 40 hours