- Introduction
  - Basic hardware knowledge//documentation
    - CPU
    - RAM
    - ROM
    - Catch
    - Hard drive
  - Digital Signal -> Machine Code 0/1
  - Different Languages:
    - Machine Language
    - Assembly Language
    - High-level Language
  - Compile / Link / Build
  - Different Code:
    - Machine Code
    - Source Code
    - Byte Code (Java)
- Java
  - JVM
  - JRE
  - JDK
  - Platforms
    - SE
    - EE
    - ME
    - FX
  - Version (8+)
  - Text Editor, IDE
  - Bug & DeBug
  - Pseudo Code
- Number Conversion
  - Binary
  - Octal
  - Decimal
  - Hexadecimal
- Introduction to IDE and the first project
  - The layout of IDE
  - Create a new Project
  - The structure of a class (Project, class, method, statement)
  - Comments
  - Documentation (general information, @author)
  - Basic shortcuts (turn the auto-completion on)
  - sout()
  - println() and print()

- o Execute the code
- o The structure of the project folder
- o The extension ".java" and ".class"
- Identifier
  - o Legal identifier
  - o Self-documenting
  - o Camel-case
  - o Naming style
- Primitive Datatype
  - o Size of each type
  - o ASCII table
- Arithmetic Operation
  - o +,-,*,/,%
  - o Operation with different types
- Variables
  - o Declare
  - o Initialization
  - o final
  - o Datatype Conversion
- Advanced Arithmetic Operation
  - o +=, -=, *=, /=, %=
  - o ++, --
- Console Input/output
  - o next()
  - o nextLine()
  - o nextInt()
  - o nextDouble()
  - o printf()
- String class
  - o length()
  - o Index
  - o substring(): 2 param, 1 param
  - o indexOf()
  - o toLowerCase(), toUpperCase()
  - o isLowerCase(), isLowerCase()
  - o trim()
  - o String.format()
  - o Escape sequence
  - o + to join two strings
  - o String datatype conversion
- Character class
  - o toLowerCase(), toUpperCase()
  - o isLowerCase(), isLowerCase()
  - o IsLetter(), isDigit(), isWhiteSpace()

- Math class
  - PI
  - round(), ceil(), floor()
  - pow(), sqrt()
  - min(), max(), abs()
  - sin(), cos(), tan()
- Method
  - Defining a method
    - Head/body
    - Return type
    - Parameters
    - Documentation(general information, @param, @return)
    - Unit test and TDD
  - Calling a method
  - Overload methods
- Boolean Operation
  - Comparation: >,<,>=,<=,==,!=
  - And, or, not
  - De Morgan's law ()
  - Order
- Selection
  - if, else if else
  - switch, case, default
- Repetition
  - for
  - while
  - Do...while
- Random
  - nextInt()
- OOP
  - Create a basic class
    - Data members
    - Constructors
    - toString()
    - equals()
    - Getter, setter
  - Memory allocation
  - Shallow Copy VS Deep Copy