Core Java Syllabus

Chapter 1: Introduction to Java programming
- The Java Virtual Machine
- Source file declaration rules
- Variables and data types
- Assignments
- Operators
- Flow Control

Chapter 2: Object-oriented programming with Java Classes and Objects
- Final variables and final methods in java
- static variable v/s instance variable
- Reference Data types and Arrays
- Constructors
- Encapsulation
- Inheritance
- Polymorphism
  - Overriding
  - Overloading
- Abstract classes
- Interface
- Constructor chaining
- **this** and **super** keyword
- Access modifiers
- Packages and import statements

Chapter 3: The Object class
- Overriding equals, toString and hashCode mthods of object class
- Shallow copy and deep copy by overriding clone method of object class

Chapter 4: String class and Wrapper classes
- Methods of String class
- Wrapper classes
  - Boxing and unboxing in java

Chapter 5: Garbage Collection
- Different ways of making an object eligible for garbage collection
- **finalize()** method

Chapter 6: Exception handling
- Error v/s Exception
- try-catch-finally clause
- throws clause
- throw keyword
- Re-throwing an Exception

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- Exception propogation
- Creating user defined exceptions

Chapter 7: Generics and Collection
- **List, Set & Map collections**
- Comparable and Comparator interfaces
- Sorting, searching, adding and removing from collection
- Generic

Chapter 8: Inner class
- Regular inner class
- Method local inner class
- Anonymous inner class
- Static nested class
- **Lambda Expression**

Chapter 9: Threads
- Multithreading
  - By extending a thread class
  - By implementing runnable interface
- sleep, join, yield , start run methods of thread class
- Synchronization
- wait, notify and notifyAll methods of object class
- Producer Consumer problem.

Chapter 10: The I/O Package
  InputStream and OutputStream classes
  Reader and Writer classes