Lesson 4:Introduction to Java

- Responsiblities of Bytecode verifier,class loader,JIT compiler,JVM

Lesson 5: Language Fundamentals

- Discuss illegal assignments for e float ,char ,byte data types
- What happens when you ignore break in switch, Discuss the valid data types that w.r.t switch case

Lesson 8: Classes and Objects

- Discuss all the important points of enum
- What is the default value of all instance variables
- What will happen if you don't initialize a local variable and try to print it?
- Garbage collector points
    - Not assured even if you call System.gc() method ,least priority daemon thread,calls finalize method
- Static methods – discuss all the points
- What is created in heap?
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Lesson 9: Exploring Basic Java Class Libraries

- What are wrapper classes list all the wrapper classes
- What are the possible modifiers for the top level class, instance variables , local variables
- (example final is the only modifier used for local variables and public,private and static is used for local)
- Which type of variables must be initialized-mandatory(ans:final variable)
- String ,stringbuffer and string builder – discuss which is mutable and methods (append,concat ,etc),equlas and == w.r.t String ?
- Methods of object class- list out
- Scanner ,use delimiter method
- All new date features, LocalDate methods to get current date, tomorrows date, yesterdays
- Discuss equals and hashCode()

Lesson 10: Inheritance and Polymorphism

- Difference between overriding and overloading
- Abstract class,interfaces (modifiers of the data members in an interface)– discuss the points
- Aggregation relation ship – how will you implement in java
- Instanceof – discuss
- Discuss all points about key word "this" and "super"(while writing constructors)
- How will you write varargs (what conditions must be followed)
- All the points w.r.t final variable,method and class
- Can the final classes be instantiated,inherited ?
- Key words that can't be used for final –abstract/extends

Lesson 11: Abstract Classes and Interfaces

- By default interface data members are ___________

Lesson 12 : Exception Handling

- List all the checked exception and unchecked exception (discuss on classnotfound,classcastexception ,numberformatexception,sqlexception,ArrayIndexOutOfBoundException,NullPointerException,IOException)
- Base class of all exception
- How will you create checked and unchecked userdefined exception
- Try catch finally throw throws – all points
- Significance of Try-with-resource feature in exception handling
- Any null reference with method invocation will create null pointer exception example(very important)
    - Example String var=null , s.op.(var.length())

- Difference between enhanced for loop and iterator
- Layered architecture with exception handling

Lesson 13: Array

- Declare int array ,Boolean array syntax

Lesson 14: Collection

- Printing the collection using for loop and iterator.

- Linkedlist,Arraylist- all collections comparison for ordered,sorted,duplicates ,allows null
- Hashtable and vector are synchronized,
- SortedMap(entries are stored using Comparator,duplicate entries replace original entries,stored as key/value pair)
- Discuss- LinkedList,LinkedHashSet
- Collections.sort(),Arrays.sort(array),ways of iterating the collection, Diff between hashmap and hashtable (key/value pair, not sorted and not ordered)
- TreeSet discuss -(key/value pair,elements in the TreeSet should be of the type that implements comparable.Need to implement either Comparable or Comparator interface to sort user defined objects)
- Go through Comparator and Camparable interface methods
- Discuss clear(),removeAll(),isEmpty()

Lesson 15: Generics

- Use of Generics (introduced in JDK 1.5,used to avoid runtime exceptions like ClassCastException and casting)
- Why Generics(Is used to avoid runtime cast exceptions and it was introduced in JDK 1.5 version)

Lesson 16: Multithreading

- Thread API's eg: static method to obtain the current thread,start(), run(),join()-waits for the other thread to terminate),Thread class constructors - discuss
- Thread Lifecycle (Thread States),Thread priority(integer values)
- 2 ways of Creating thread.
- Wait(),notify and notifyAll() are in Object class
- Which exception is thrown by Sleep()

Lesson 17 : File IO and Lesson 18: Property Files

- Different types of streams in File IO,LineNumberReader,Buffered Streams,flush(),Serialization and Deserialization
- Below classes are in java.io package Reader,Write,InputStream,OutputStrean,FileInputStream,FileOutputStream,ObjectInputStream
- Discuss isFile()

Lesson 19: Introduction to Junit 4 & Advanced Testing

- Explain @Test with all attributes like timeout ,expected…
- @ignore- explain
- Explain static import of Assert class
- Explain-'@RunWith(Suite.class) ,@Suite.SuiteClasses
- @Before,@After ,@BeforeClass,@AfterClass–explain
- What is parameterized test?

Lesson 20: LambdaExpressions

- Discuss Simple lambda expressions, how to write the functional interface
- Printing the list using lambda expression

Lesson 21: Stream API

- Consumer,BiFunctional,Predicate Functional interfaces – discuss with code snippets from the slides or solved examples
- Discuss below stream operations:
  Array.stream (), list.stream() ,Map, filter, forEach(System.out::println),count() ,sorted(),distinct(),limit(),reduce
- Which method used to implement parallel stream operation
- How to display lowest 3 values from a list by using stream methods . i.e stream().sorted().limit()