**Java Topics**

* BigInteger-> [Java BigInteger - Javatpoint](https://www.javatpoint.com/java-biginteger) go through the functions used in BigInteger
* Regex -> compiler - to search, manipulate, edit a string in java
* Comparator or Comparative interface -> which help us to do custom sort of objects present in class *suppose there is a class Student(roll,name) I want to arrange students according to rolls then I will implements Comparable<Student> then I will create object for Comparator<Student> com = (Student a, Student b) -> (a.age > b.age)? .. : ..*
* Multi threading and concurrency -> threads, synchronization, thread safety, locks, semaphores, thread pools……*yield()*-- there are 3 threads t1,t2,t3 now t1 gets a processor started its execution which will take 5hrs and t2 and t3 are in running state. Now t2 will take 5mins but it has to wait for t1 complete so here yield() will manage to run t2 first….. *sleep()--* this will make current executing thread to sleep for number of specified milliseconds subject to the precision and accuracy of system timers and scheduler. … *join()--* ed to join the start of a thread’s execution to the end of another thread’s execution so that the thread does not start until the other thread stops……*Threads--* In distributed system threads are smallest units of execution within a process enabling parallel and concurrent task execution.
* JVM,JDK,JRE

Collection, Thread , exception Handling..

Programs:

1. DateTime Api
2. Collection framework:- a- Array to Array list -> use asList(), loop--.add(elements), Collections.addAll(list,array), Streams

**Can we have 2 methods in a class with name?**

Yes we can have 2 methods with same name in a class this is called method overloading. The parameters or the data types must be different and arguments must be different

**How objects of a class is created if there is no constructor defined in the class?**

If no constructor is defined explicitly in the class the compiler automatically provides a default constructor. This default constructor is a no-argument constructor that initializes the object with default values.

**What is the difference between abstract class and interface?**

Abstract class -> class which is declared with abstract keyword is known as abstract class. It can have abstract and non abstract method.

Cannot be used to achieve multiple inheritance

Can have final non-final static and non-static variables

Interface -> blueprint of a class having abstract methods but since java8 static and default methods are also available.

Used to achieve abstraction and multiple inheritance

Can have only static and final variables

**If a method throws null pointer exception in a super class can we override it with method that throws runtime exception in subclass?**

-- yes we can override a method in a subclass with a method that throws a broader unchecked exception such as RuntimeException even if the method in the superclass throws unchecked exception like NullPointerException.

Super:- no exception Sub:- can unchecked exception but no checked exception

Super:- an exception Sub:- can same or child exception

Super:- an exception Sub:- can without exception

**What is the difference between comparable and comparator?**

Comparable:- define natural ordering of objects when the class itself has a single, natural sorting order that we want to implement

Less flexible as it deals with one natural ordering for the class.

Sorting Employee object by their employeeId

Comparator:- used to define an external sorting order. Allows us to create multiple different ways to compare objects when a class needs more than 1 ordering

More flexible as it can deals with multiple sorting strategies

Sorting Employee object by their name, salary, age

**Difference between == and equals()**

== -> checks the reference memory addresses of 2 objects, not the actual content.

Used to check whether 2 reference variables point to the same object in memory

equals() -> compares the actual content or values of 2 objects

Used in string, integer to compare equality of 2 objects.

Student table address table