LinkedIn Fundermental Questions

Thread vs Process:

<https://blog.csdn.net/honglin_ren/article/details/35839979>

<https://www.geeksforgeeks.org/thread-in-operating-system/>

<https://stackoverflow.com/questions/200469/what-is-the-difference-between-a-process-and-a-thread>

Context switch difference thread vs process:

<https://stackoverflow.com/questions/5440128/thread-context-switch-vs-process-context-switch>

Inter Process Communication (IPC):

Processes can communicate with each other using these two ways:

* Shared Memory
* Message passing (Pipe)

<https://www.geeksforgeeks.org/inter-process-communication-ipc/>

remote procedure call (RPC):

<https://www.ibm.com/support/knowledgecenter/en/SSGMCP_5.4.0/fundamentals/interfaces/dfhtmc00195.html>

virtual memory: a memory management technique that provides an "idealized abstraction of the storage resources that are actually available on a given machine" which "creates the illusion to users of a very large (main) memory."

Polymorphism:

Polymorphism is the ability of an object to take on many forms. The most common use of polymorphism in OOP occurs when a parent class reference is used to refer to a child class object.

TCP vs UDP:

Both TCP and UDP are protocols used for sending bits of data — known as packets — over the Internet.

<https://support.holmsecurity.com/hc/en-us/articles/212963869-What-is-the-difference-between-TCP-and-UDP->

Hash Collision:

1) HashMap handles collision by using linked list to store map entries ended up in same array location or bucket location.

2) From Java 8 onwards, HashMap, ConcurrentHashMap, and LinkedHashMap will use the balanced tree in place of linked list to handle frequently hash collisions. The idea is to switch to the balanced tree once the number of items in a hash bucket grows beyond a certain threshold. This will improve the worst case get() method performance from O(n) to O(log n).

3) By switching from linked list to balanced tree for handling collision, the iteration order of HashMap will change. This is Ok because HashMap doesn't provide any guarantee on iteration order and any code which depends upon that are likely to break.

4) Legacy class Hashtable which exists in JDK from Java 1 will not use the balanced binary tree to handle frequent hash collision to keep its iteration order intact. This was decided to avoid breaking many legacy Java application which depends upon iteration order of Hashtable.

5) Apart from Hashtable, WeakHashMap and IdentityHashMap will also continue to use the linked list for handling collision even in the case of frequent collisions.

6) Collision in HashMap is possible because hash function uses hashCode() of key object and equals() and hashCode() contract doesn't guarantee different hashCode for different objects. Remember, they guarantee same hash code for the equal object but not the vice-versa.

7) A collision will occur on Hashtable or HashMap when hashCode() method of two different key objects will return same values.

Read more: <https://javarevisited.blogspot.com/2016/01/how-does-java-hashmap-or-linkedhahsmap-handles.html#ixzz5wnv7hSK2>

Race, banker algorithm:

<https://en.wikipedia.org/wiki/Banker%27s_algorithm>

Checked vs Unchecked Exceptions:

<https://www.geeksforgeeks.org/checked-vs-unchecked-exceptions-in-java/>

Thread pool:

<https://www.geeksforgeeks.org/thread-pools-java/>

<https://blog.csdn.net/u011974987/article/details/51027795>

memory-mapped file:

<https://en.wikipedia.org/wiki/Memory-mapped_file>