Java memory management:

Stack and heap memory

Heap memory :

Divided into 2 parts:

Young generation old generation

Class objects will be stored first inside young

(Eden memory).

Divided into 3 parts:

1Eden memory

2.survivor memory(S0,S1)

When we cerate so many objects for a huge application,then Eden memory will be filled and Garbage collector performs a mechanism called Minor GC where few objects from Eden will be shiftred to Survivor memory S0 and then to S1 .

Eden memory



Minor GC mechanism



Survivor memory S0



Minor GC mechanism

Survivor memory S1

It is called as minor GC because,it is performed only for short period of time.

Responsibility of GC:

It will remove some null memories from young generation memory.

Old generation memory:

When all S0 and S1 memomries are filles,java will shift it to old generation memory.when this memory is also filled,then GC will be called and the mechanism performed here is called major GC.

Survivor memory



Minor GC



Old generation

Major GC



Takes longer time.(So,we may get time out exception)

Memory pool:

Used to store immutable objects.

Will be defined at the run time by JVM memory managers

Permanent generation memory:

Generated at the run time.

🡪What kind of data will be stored here?

Application metadata of classes,methods (e.g.kind of classes) will be stored.

Method area:

Complete class structure will be stored in permanent gen.memory.

All static variables,constatnt variables will be stored in permanent memory.

Run-time constant pool:

It is a part of method area.

Static var. as well as const.var will be stored here at the run time.

Java heap memory:

1. Stores class objects.

2.All JRE classes will be stored

3.GC runs always on heap memory only to free some memory by destroying some objects which don have ref.

Stack memory:

🡪used for execution of threads.

🡪contains method specific values (lik all local var.) will be stored here

🡪object references that are referring to some objects in heap memory will be stored here.

Test t1=new test()

T1-stack memory

New test()-heap memory.

It stores on the basis of LIFO (Last in First Out)

Heap memory Stack memory

All objects are stored here All local and constant variables ,methods,

object references ,method block are stoed here .

size: huge very less when compared to heap.