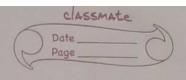
Assignment -4



I what does the static keyword mean in ava? Explain diff between static + non-static methods!

In I awa static keyword is used to indicate that I a member (Variables, method, block or nested class) belongs to class itself rather than to instances of the class.

static Men Static 100 16

To access Non-static 1) Static method Can be method we have to accessed without Creating instance of create instance of class. Clouds. W aboutern signifum primitab p

You can of Leess 2) You Cannot access Non-Static variables in Static a static & nonstatic methods. methods.

You can overside Non-3) You can't overnide Static methods. static methods

Non-staticalso known 4) Static is also known as instance as class variable

Non-static method 5) Static method can be must be Called on Called without Greating instance of the class an instance ob the class memory allocation occurs even

5) static method allocate time insterned class a memory only once. - non-static m

Store! 3) static methods store in method area

2) what is role of static keyword in the Context of memory management. I static begroord in faud plans orneral role in memory management by ensuring that
Static variables & methods are stored
in mathed in method area + too loaded only once when class is first loaded. 3) can static methods be overloaded 4 overridalen in Javan Houstatic variables shared across multiple instance of -> Yes, static method tan be overloaded a class? by detining multiple methods with the same name but dibberent parameter lists. No, static methods cannot be overridden in same way as instence methods. Instead, method hiding occurs, meaning the method couled based on the seterere type at compile-time. static variables are shared multiple instances not individual objects. when class is roaded trestation Variable is stored in the method area. + all instances of class shere same memory location for that variable, ensuring consistency across obje

4) what is singificance of final keepward of Java?

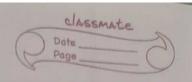
Ofinal variables - when or variable is declared as tral, it can be assigned only once. After its initial assignment its value cannot be changed this is use ber constant. final fint MAX_VALUE = 100; to signoxy () 2) Final Methods - Declaring method biral prevents Subclasses from overnicing it. This is useful 3) find class - A class monked as final cannot be subclassed, preventing inheritance ex - Bring class in java istinal. Java. Java. (tri) = substrict this - widening Conversion - (implicit Casting)

when smaller doctatype automatically

converted into larger doctatype.

It is sate doesn't result in dota 685. Journ requires explicit costing during non Ex- int to long, bloat to double to loss of precision, when larger type, only I is floor wom will berinter and sta

Narrowing Conversion—
Explicit Casting
happens when larger datatype is explicitly
Converted into graceller bt. Ex - double to long, int. 6) Example et Marrowing 4 widening Conv. between primitive DTS. + Widening Conversion (automatic) Complicit) int num = looj no A long int to long Marrowing and (explicit) double decimalvalue = 9.78; int intvalue = (int) decimalvalue 11 narrowing 7) How does Java nandle potential loss of presision during namowing Convisions + Java requires explicit casting during narmound conversions because it recognizes the potential tor loss of precision. when longer type is numoved to smaller types only loved bits are retained which may result in



truncation of the value or incorrect results.

ex- double num = 9.99; int result = Cint) nom; 11 result is d.

fractioned parties last when converting trong double to intil

S) Explain Concept ob automatic widening Conversion in Java.

- widening Conversion in java happens automatically when you assign asmaller primitive type to larger one

This is because langor data type Can a Commodate value et omallor type. unthout any data loss

example int small rown = 42: double briggerum = smalling;

int value us is automostically widended to double, which can hold larger values

a) what are implications of narrowing 4 data loss? It widening Conversions - are sate larger type at can always a cumodate.
Value of smellor type. They onsure
type Compatibility without any mist of a * Namawing Conversion - may lead todata loss, smaller at type cannot always h the larger value. This is why java require explicit Casting ter namowing Conv. long lange Value = Lockjos di sittint namowed Value = (int) long eValue. nothing and data loss Star Bill int small mum = 40: obable hadenin - and 11 m; int value we is automatically interded double, which can hold larger halves