

Class = {
 variables
 methods
 constructors
 Instance block.
 static block.

Variables. → Properties or attributes:

-eg. * class bird {
 int wt;
 string color;
 string species;
 }

Types of Variables.

1. local
2. instance.
3. static

*

LOCAL.

Declare. →

Scope →

Memory Allocate →

Memory Type →

inside a method / constructor / block
 ,,

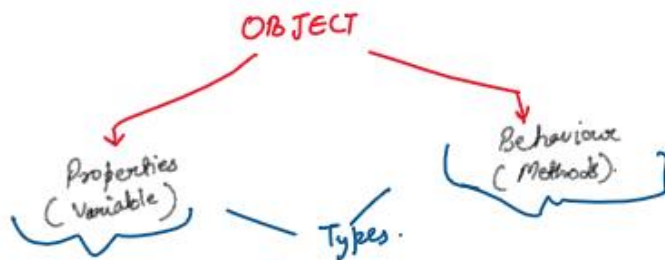
* It is not possible to declare local variable outside constructor / block & class.
 When method is started its execution & destroyed when method completes.

Stack Memory.

* There can be only one public class in java.

↳ If there is public class then file name should be same as that of public class.
 ↳ eg. A B C D & rep.

* There can be multiple class in java file.



* Robot Class Example.

{
 walk ();
 walking ();
 name
 brand
 charging ();
 }

* Constructors → To create objects.

Types.

↳ 1. Default.

↳ No need to create this.

eg. Robot r1 = new Robot ();

↳ provided by java.

↳ But you can also create if needed.

↳ eg.

```
public Robot () {
    Sys ("obj is created");
}
```

* Static Variable in classes.

↳ static var belongs to class not object. (class's property)

↳ every object shares the same variable using static keyword.

* We can access class's property without creating class's object.
 ↳ like, we don't create obj of Main class to use main method.

Polymorphism

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1. Compile-time → $\begin{matrix} \text{walk}(); \\ \text{walk}(50); \end{matrix}$
2. Run-time → During inheritance.
() when child & parent class has different funcⁿ with same name.

Static Keyword

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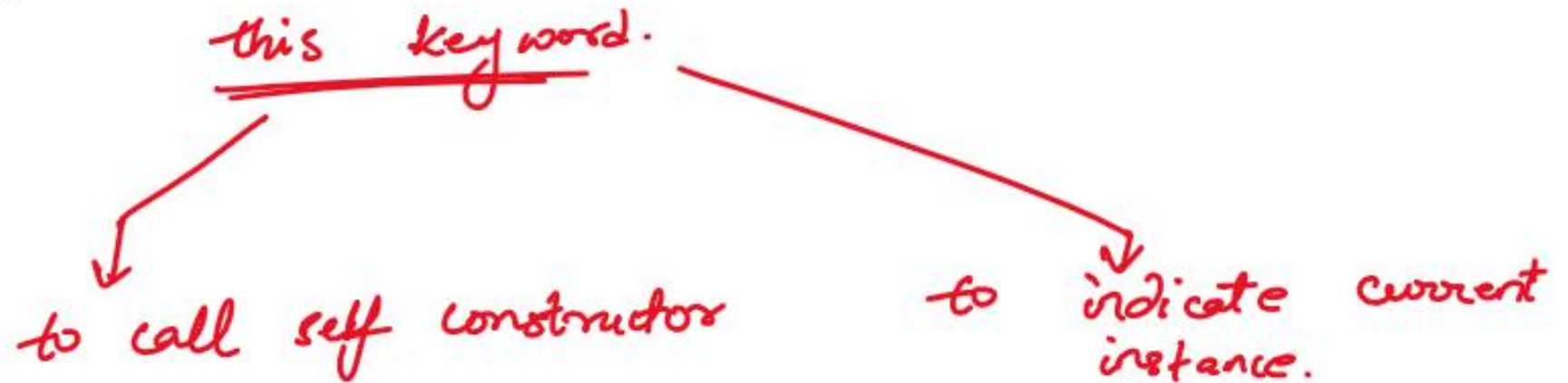
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--> To make class's property

AS

This Keyword

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Parent child - relationship.

↳ we can inherit properties from our parent class.

INHERITANCE →

Types

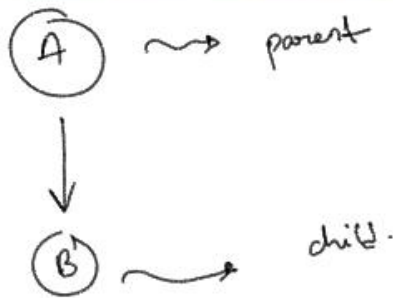
"extends" keyword

→ to establish inheritance.

"super" keyword

→ to call constructor of parent

*



 * When we construct obj of child class (B) then obj of parent class is automatically created.

* OBJECT class is the super parent of the all classes.

* if some method is missing in child class then it first searches in the intermediate parent.

* Java doesn't support multiple inheritance.
 ↳ due to diamond problem.

Encapsulation

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With help of packages & access modifiers in
classes we achieve encapsulation

Packages and Access Modifiers

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Packages:- To bind all classes together, similar like a directory.
:- & to use access modifiers effectively.

Access Modifier:- (37 mins)

1. Default
2. Public
3. Private
4. Protected

Getters & Setters:
↳

Abstraction

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Abstraction is a way of hiding information, just to reduce complexity of the process.

* With help of **abstract** keyword & **interface**, we can achieve **abstraction**.

Abstract Class

* Objects of abstract class cannot be created.

* Abstract class can contain both abstract methods & non-abstract method.

* **Abstract Methods**: doesn't have their body defined.

Abstract Method

: should always present inside abstract class.

Interface

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Interfaces: by default are

★ "implements" keyword.

abstract & virtual

Exception Handling

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Misc.

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Virtual Function

Inner class

Friend Function

Lambda Function and Expression

Garbage Collector

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