Types of lang and Memory Management

Types of Languages:

Procedural

- Specifies a series of well-structured steps and procedures to compose a program
- Contains a systematic order of statements, fxns and commands to complete a task
- *Example:*

first i take a Input , input a second number and then add. It cannot be like input a number , add and then input the sec num.

lang like PYTHON

Functional

- writing a pgrm only a pure fxns. I don't modify the variables , but simply create the new ones using one fxn.
- Used in situations where we have to perform lots of diff operations on the same data
- *First Class Fxn:*

a=10 , b=20, c=b . just like this assigning the fxn names to other fxns

lang like PYTHON

Object Oriented

- revolves around a obj
- Code + data = obj

- Developed to make it easier to develop, debug, reuse and maintain software.
- say “collect the data of 10 students that contains roll nums” this can be a int data
- say “collect the data of 10 students that contains name” this can be str
- say “collect the data of 10 students that contains CGPA” this is float
- what if it is “collect the data of 10 students containing Names, roll num, address”. Now this is a CUSTOMED DATA Types where this is a collection of all. - - CLASS

lang like JAVA

> A LANGUAGE can be a hybrid type too

STATIC AND DYNAMIC Langs

Static

- Types checking at the time of compilation
- Errors will show at compile time
- declare datatypes before u use it
- more control

Dynamic

- Perform type checking at runtime
- error might show till the pgrm is run
- No need to declare datatype of variables
- Saves time in writing code but might give error in runtime

Consider,

a=10

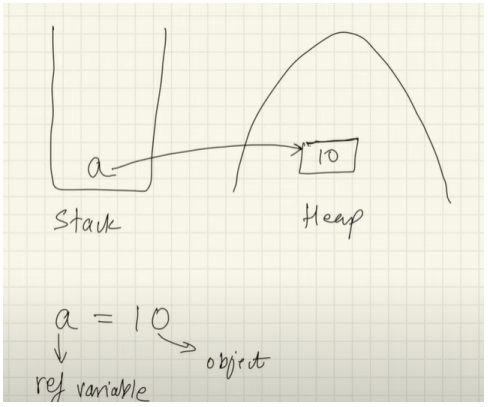
a="AISH"

here, i don't specify the datatype earlier, the comp automatically understands the datatype while the time of compilation. This is Dynamic . If i write it as int a=10 , this is Static. here, the comp wants to know what is the datatype during compilation only. that is while converting the source code to Machine lang

int a="AISH"

This throws an error ofc. Error is shown at Compile Time

Memory Mgmt



Garbage Collection

When there is a Obj with no ref variable. This GC hits automatically