

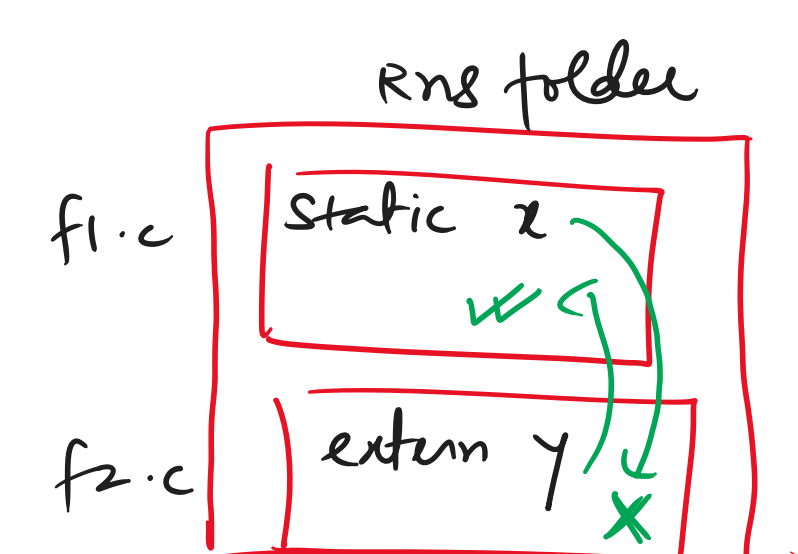
10

C	C++	Java	Python
<ul style="list-style-type: none"> * History * Data Types * Operators * Conditionals * Looping * Functions * Recursion * Pointers * Array Pointers * Enums * Struct & Union * DMA * Files 	<ul style="list-style-type: none"> * History * namespaces * cin // getline * data types: auto * STL ↳ Standard Template Library { stack / queue / map / list / pr } { vector } # include <bits> Virtual Functions 	<ul style="list-style-type: none"> * History * WORA → I C * Structure Anatomy * Wrapper Classes * Boxing / Unboxing int → Integer ↔ * Files * OOPs *** <u>Exceptions</u> Collections Framework java.util 	<ul style="list-style-type: none"> * Membership Operator in & not in * Identity operators is & is not * Walrus Operator := o o v v * Duck Typing * Operator Overloading

$n1=0$ 1, 2, 3, 4, 1, 2
 $n2=0$ XOR ALL = 1 ^ 2 ^ 3 ^ 4 ^ 1 ^ 2 = 7
 rightmost set bit =
 *** [XOR ALL - XOR ALL]
 7 → 0111
 1000
 + 10001
 1001
 1 & rsb
 for (int i=0; i<arr.len; i++) != 0)
 if (arr[i] & rsb
 n1 ^ = arr[i]
 = 1 ^ 1 ^ 3
 else
 n2 ^ = arr[i] = 4
 2 ^ 2 ^ 4

Static \rightarrow Stack Memory / $\&$
`int a = 10;` \rightarrow
 var value

 0x1000 ptr



Storage Classes: \rightarrow C & C++

static → global → file
 extern → global → files
 register → RAM
 auto → { } → RAM
 }
 local
 helps to remove dangling situation
 (inside folder * no pointers allowed)

(Java ver : 1.6) It was not mandatory to write
main() method.

(Java ver: 1.7) It is mandatory to write `main()` method.

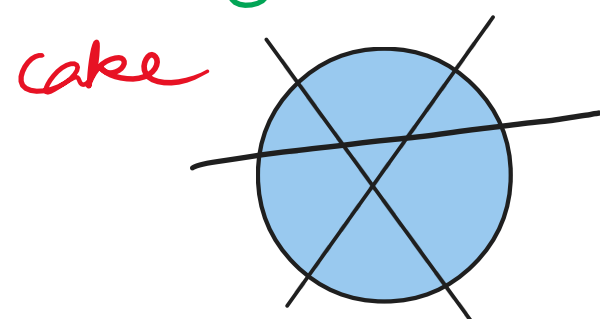
We used static block { }

Hierarchy: Static main()

II B → Instance Initializer Block → Statements
Top to Bottom

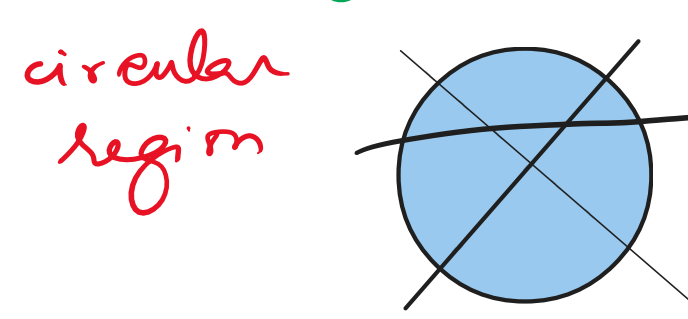
Common data for all instances/objects

* Baker's Partition Problem using n straight cuts



No of Cuts	Max Pieces
0	1
1	2
2	4
3	7
4	11
5	16

* Max Regions in a Plane using n straight lines



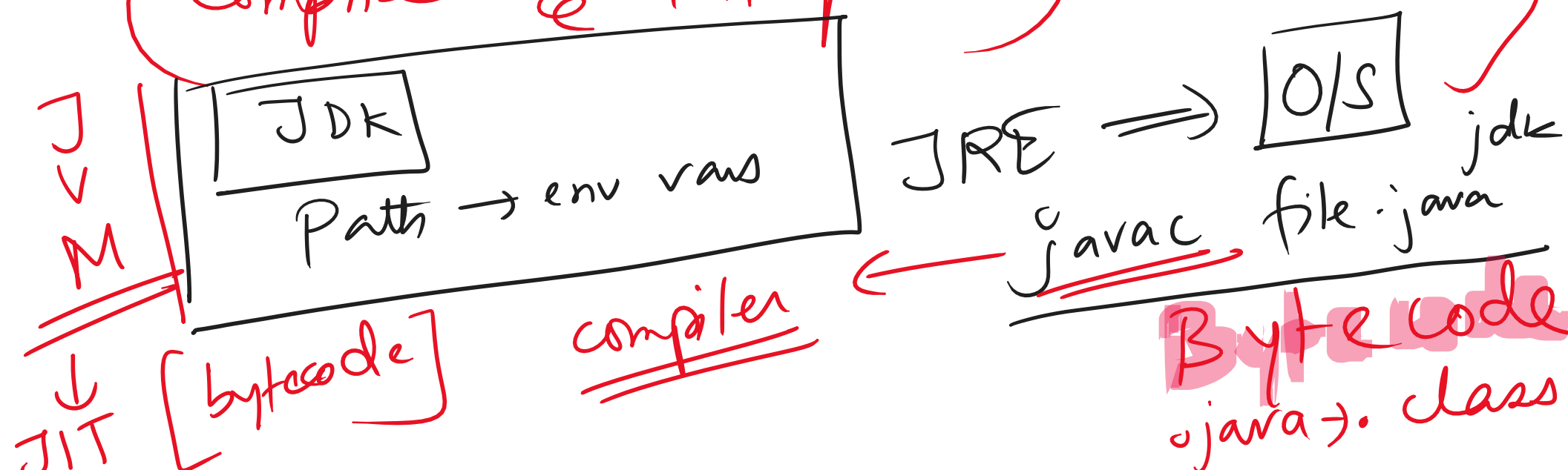
No of St Lines		Max Regions
0	$S(n) + 1$	1
1		2
2		4
3		7
4		11
5		16

WORA → Write Once Run Anywhere

- Platform Independent
- Portable
- Any O/S

Sanity testing

(Compiled & Interpreted)



OOPs (T-F) B1
 Exceptions (S-M) B2
 C++ Exceptions (T-W-T-F) B1 XXXX
 Files & File Handling (Collections + DSA)