	Real wall of the same
M	Best, worst and Expected Case
DR.	Come lines 110 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Joine times we get lucky in life Exams Cancelled when
	you were not prepared, surprise fest when you were
	prepared etc. > Best case
	some times we get unlucky Questions you never brefored
	Sometimes we get lucky in life Exams cancelled when you were prepared etc. => Best case  Some times we get unlucky. Questions you never prepared asked in exams, rain during sports period etc. => worst case
	$\Omega$ + $\Omega$
N. A.	Dul overall the life remains balance with the mixture
	But overall the life remains balance with the mixture of lucky and unlucky times => Expected case.
	Analysis of a search algorithm
, .	Analysis of a search algorithm Consider On array which is sorted in increasing order
TAI	spirit out 7 186 28 500 1801 In 10
-	January 12 7 7 10 11 180 28 50 180 20 10 10
_	The test of the contract of th
_	We have to search a given number in this array and report whether its present in the array or not.
TOW	and report whether its present in the array or not.
e XI	A CITY OF THE PARTY OF THE PART
	Algo 1 -> Start from first element until an element
-	Algo 1 -> Start from first element until an element greater than or equal to the number to be searched is found.
Ì	searched 15 found
$\dashv$	Al a class de de la la la companya de la
$\dashv$	Algo 2 -> Check whether the first or the last element is
$\dashv$	equal to the number. If not find the number
	between these two elements (center of the array).
190	If the center element is greater than the
0	number to be searched, repeat the process for
-	first half else repeat for second half until
-	The number is found

•	
	And wine Alas 1 betaded has tended tool
	Analyzing Algo 1  If we really get lucky, the first element of the array might furn out to be the element we are searching for Hence we made just one Comparison.
1	If we really yet study, the gloment we
183.1	array might turn out to be the constitution
MOLL	are geardning for hence we must give
1	Comparison.
1000	10 toward 300 briefts and topology topology to be to b
Alakas her	Best case Complexity = O(1)
	TI was a self of the self-months as a second
1733	If we are really unlucky, the element we will
	If we are really unlucky, the element we are Searching for might be the last one.
	Worst case complexity = 00(n)
17.01.71	
	for calculating Average case time, we sum the list of all the possible case's runtime and divide it
	of all the possible cases turnine and accordent
	with the total number of cases.
- P	ARTHOUGHT IN TOWNER GOVERN ON WHOM OF THE STATE OF THE ST
*	Core time sets very comblicated
	Jose time yes very complicated
1	Analysia Alas 2 les es e
311	Truly you and hall haby the first of the
	If we get really weeky, the first element will
	be the only one which gets compared
	Best case Complexity = 0(1)
1.090	was wirpicxing - V(1)
r Barrer	If we get unlucky we will have to keep dividing
247	the array into halves until we get a single
1.161	element (the array gets finished)
JULINA 1	Millian (The wwy year Tinishea)
	TRANSPORT OF TRANSPORT

Worst case complexity = O(logn) What log(n)? What is that log(n) → Number of times you need to half the array of size n before it gets exhausted  $\frac{8}{2} \rightarrow \frac{4}{2} \rightarrow \frac{2}{2} \rightarrow \text{Cant break anymore}$ 4 → 2 → Cant break anymore. + 1 Logn simply means how many time I need to divide n units such that we cannot divide them (into holves) anymore Space Complexity
Time is not the only thing we worry about while
Analyzing algorithms. Space is equally important. If a function calls itself recursively n times space complexity is O(n)

	EDGE
	Quick Quiz - Calculate Space Complexity of a function which calculates factorial of a given number n.
→ →	Why can't we calculate Complexity in seconds?  Not everyone's Computer is equally powerful  Asymptotic analysis is the measure of how time (runtime)  Arows with input
A T 8.0	ing H = 2 = 4 + 2 = 4 poi
alivide (in in	I no ne simply means from many time I need to a unite sheet awide there shows that we connot divide there
·	Sour Complexity and the and there are works about 12th and the analysis of the constant of the
7	demine a whiteness first allow not made in the speed of the standard in the st