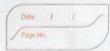


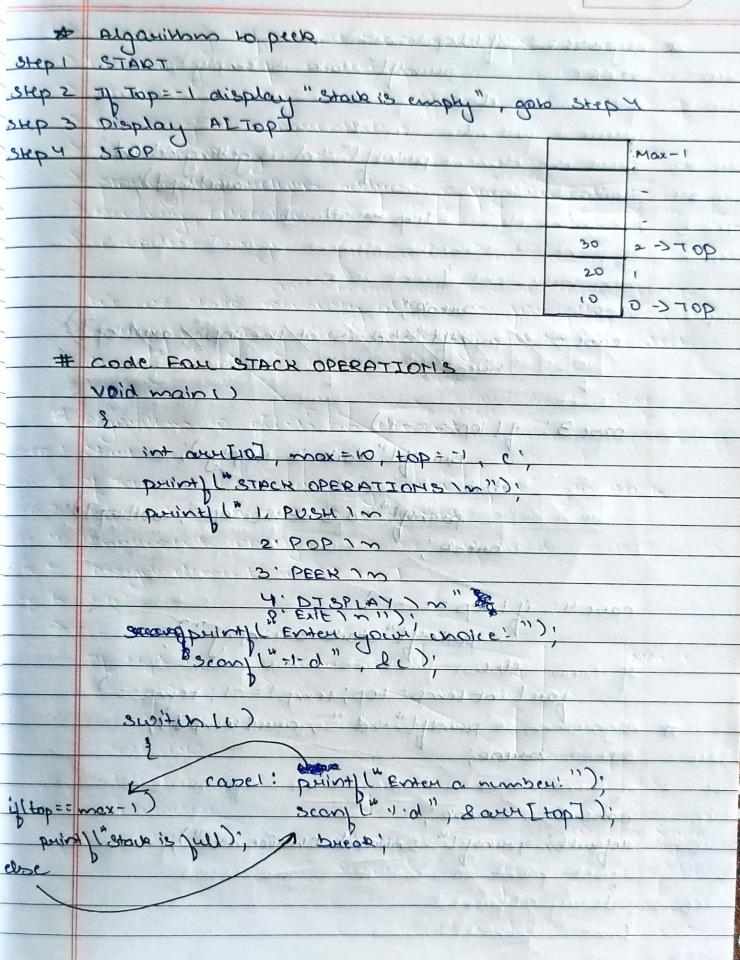
Data Structure
Data structure is a way of organising data in memor
so that it can be used efficiently at consists of
hoo pants
i) How data is auganised in memory
10 20 30 > 10 -> 20 -> 30
Here fragmented memory can be use
Every node has at least 2 fields in
data field is address field
101
100 -
15 120 - Treated Binary Search Tree.
Over Here hierary is being
15 25 Jallowed
15 25 0
the state of the s
ii) what all operations can be performed on that data
Stricture of harpings were marked and
a river found with at sandforth and
> CLASSIFICATION OF DATA STOUCTURE
to the in more than the property while the state of the state of
Rumitive Mon-Paimitive
Integer and policy state printing the
Float simple compound
character 1
Boaleon Array
Record Linear Hon- Unea
The state of the s
wished list surveys to
sinked biot curaphs

ADT Jobstract Data Type y ADT is a conceptual or mamenatical model which specifies different type of operations on that date type. However, it does not specify how these spends -ons will be implemented, it is called asserted because it only tells the operations which ADT an payporm without telling how these will be implemented. This process of providing only the ersentials while hiding the details is known as abstraction Examples of Abstract out Type are Stock Queue, List. In Stack we can penjarm the following operations i) Push: To add on element at the top of stock ii) Pop: To viernoue on element juom top of state iii) Display: To print content of stack from top to bottom iv) Peek! TO paint topmost element. THE TOP A THE CHEST POST OF THE STATE OF THE COURT There operations are specified in stack ADT which works on LIFO last In First Out? basis. To implement stack the prooptionmen will be using a suitable data structure such as array ar lineal A THE STREET SONG SERVICE HEIL # Implementing Stack using Averay Stack is on ADT which cours on LIFO basis Element placed at the last is always at the top is the element placed just it at the bottom stail is used in number of applications such as,



->	conventing in hix expression to postix	o stine or	u X	
->	Evaluating postlix expression	WARA	2 101	
->	Reverse à string	1 = 901	y ton	
->	therbing the parenthesis	4 justos	1 6 93	
>	Back Triaiking	Jarrass	S KAR	
->	storing the return address in function	llas c	-5 Bas	
->	Memory selocation			
	compiler Design	way was	10	
	1 0 P Careella Man	1-20	, -	
	we use static memory allocation for	alloca	alina the	
	array memory is memory will	be alle	med	
3.5	during completes times:			
	during compilation time.	V 12	1.1/2	
A	Alaquidas to alleta an eleverat	See a see	mily Tries	
Shen I	Algarithm to push an element	- Decrese	AN AL	
	Start of the start			
sier 3	If Top= Max-1, then display "stock is full"	, good s	uch 10	
	Input the element to be pushed			
	Inversent top by			
	Assign element to AL Top I			
SKP 0	STOP	a me	es Harte	
	The start is complete them Top = -1	1	Max-1	
	If starts is empty then Top=-1	Jan	13	
		an)		
	1124-11		1-	
	Tide to the second seco	The same	2	
	Charles To The State of the Sta		<01	
	SP 43 6 LERCY KERNET OF BURNING VILLEY	10	905 <- 0	
	a Remid Mario		SHEEL LINES	
	0 11 6 0 0 0	No.		
			1311	

×	Algarithm to pop an element	arrepa	HILLASS C		
	START	malle	Wallact C		
Steb 1	START Ty Top=-1 then display "Stark is empty", goto step 5				
Step 2	Discher the contents of Al Tool				
step 3	Display the contents of Al Top?				
Step 4	Decument Top by				
Skp 5	STOP WAY A SUCHOOL	1801	6 Max-1		
		1	4 -		
	Over here as stock is empty, in	312 377	1900		
30 35/0	Top = - (
10/1/27	Reside mil amorale in savian a	not?	,2		
1521	sold bet the control of the property	1 Post	1000000		
	letter Hart.	Top=-1			
		icy-			
	Also or house delle	O1 27	Minispla &		
×	Algarithm to display the elements				
	top to softom and when and				
	START HONEY DENER THERE		THE RESIDENCE OF THE PARTY OF T		
	If Top = - 1 men dieplay " stock is emply", got step 8				
	Take an integer variable temp				
Step 4	Assign top to temp	date d			
step 5	Repeat step & to 7 untill temp=-1	(('))	Marine .		
Step &	Display the contents of Altempo	Calle Control			
Step 7	som Secrement temp by	186			
	STOP	(Tan			
Control of the second	The later was a second	33213	Mex-1		
3.4		SHIERA			
	The Cal Astron	232101	. 7 / 2		
nord-b	K-quest of the manufact of temp->	30	2-3700		
	The most of the second	20	1		
		10	90-2-0		



casez: if (top===-1) porint) (" stock is empty); promote established the state of the state o print (" 1.0) is getting deleted",

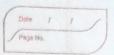
aux I top I); toop == +=1 maj when y & your to g case 3: puixy 1 1 d/s at the top , any top] case 9: 1 (lop = = -1) purint 1 stack is empty); else letter response sais 1/65 mes (Egation, " gas set to si bit stering case " if I hop == -1)

case " if I hop == -1)

else

else faulint temp: top; temp!=-1; temp--) print[" +d", are [remp]); case 0: break;

default: print (" Invalid Chipice In");



Queue some some of the sound Queue ADT can be implemented using an average or Minted dist data structure siene we are implementing queue ADT waing on arrivary # Applications of Queue > processor scheduling Fin implementing BEST Breadth First search for graph traversal algorithm -> In service provider orgotems where more one multiple In flight landing to take off systems, as mare than one aexoplane compete for single running at a given time for donding and take off. # Queue operations -> Enqueue: To add on element at the wear end of the -> Dequeue: To remove on element from brant of me -> Display: To puint all elements in queue prom front to near > Peek: To print front element of the evene # Implementing Queue wring on array Assumptions: we have an integer away with a size max where max is a constant. Take not integer variables pront to near to initialize them to - as initially queue is

* Algarithm to Implement Queue Step 1 If ((near +1) 4. max) = brown men display a message grene is full goto step 7 Input the element to be inscuted Step 93 rear = (reart) .1. max SKD 84 Assign the element to a Lucar J 3kp 5 If pront = -1 it means element inscribed is just element Step 6 then increment front to o. SKOP 7 0 1 2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 90 100 + -> Queue is full Reay (9+1)4.10=0 ire (seconti) + mond + front (att) +10 +3 If (reauti) 1- mox = front > Queue is full * Algorium to implement Dequeue SEP 3 gold Step b. SKD 3 golo Step b. sup 4 7 pront = near men display the value of al pronts to reset front to rear to -1, goto step 6 Step 5 Display at front] front = (front + 1) + max

