DATA STRUCTURES TT1

```
Implement following functions of a stack using
   R1
        array
 2 MA
      #include <stdio.h>
       # includ exconio. h >
       # Include < stdlib-h>
       # define MAX 5
      int st [MAX], top = -1;
  (1)
       1 INSERTION
       void push (int st(], int val)
            i (top == MAX - 1)
              printf ("In STACK OVER FLOW");
                       EN TARTE (" VA - TACK IS EMPTY"
             else
               st[top] = val;
       11 DELETION
       int pop (int st [])
             int val;
             if (top == -1)
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```
BANG TO BROWN
                     printf ("In STACK OVERFLOW");
                     return -1;
                else
                    val = st [top];
                    return val; a sam and a
        11 DISPLAYING
                             - Novem , Notal Diana bis
        void display (int st [])
            int i;

if (top == -1) 11 2000 (1) 12 2000 (1) 12 2000 (1)
            printf ("In STACK IS EMPTY");
            else
                for ( i = top ; i = 0 ; i -- )
                  printf ("In %d", st [i]);
                printf("In");
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```

```
q2 write a junction to insext an element in a linked list
before a specific value present in the linked list
        void insext_before (struct node "head int value int before)
              struct node * new_node = NULL;
             struct node * tmp = "head;
              new_node = (struct node *) malloc (sizep) (struct node));
              if (new_node == NULL)
                 printf ("Failed! Out of memory);
                 return
              new_node -> val = value;
             if (("head) -> val == begore)
                  new_node -> next = + head;
                  "head = new_node;
                 return;
              while (tmp && tmp -> next)
                ij (tmp -> next -> val = = bejore)
                    new-node -> nent = tem tmp -> nent;
                    tmp -> neat = new_node;
                   return;
                 tmp = tmp -> next 130R EDUCATIONAL USE
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```

93	0 1 2 3 4 5 6 7 8 9 10 11
	ATT = [10,12,35,40,45,50,80,82,85,90,100,110]
	using 'o' indening.
	No of elements = n = 12;
	400
	fib M = 13 (Nearest fibonacci no >= 12)
	fib M1 = 8
	fib M2=5
•	g set = -1 (11 €21 mixt = 3 1 1 2 2 2 2
	N and a second and
step 1:	i = min (syset + fib M2, n-1)
,	= min (-1 + 5, 11)
	" = 4 Train webmit to thought yet and in
	a[i] = 45 ; 45 < 100
	∴ fibM = 8
	fib M1 = 5
	fib M2 = 3
	gjset = 4
## ##	——————————————————————————————————————
Step 2:	° = min (7,11)
	<i>=</i> 7
	a [i] = 82; 82 < 100
	∴ fibM = 5
	fib M, = 3
	fib M2 = 2
`	0/1set = 7
	W

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		EP :
Step 3	$\tilde{c} = \min(9, 11)$	
0,0	= 9	
	a [i] = 90; 90 < 100 primaly ("" + 10)	
	: fib m = 3 : Er = a = 220 yanta ju oid	
	$fib M_1 = 2$	
	Ab M2 = 1 (Life som lapparate to the in the Mark	
	giset = 9 Sain on	
step 4:	i = min (10, 11)	
	= 10	
	Cinn, Mater Joseph Liden - I	11 420
	a[i] =100	
	: n = 100 jound at index i = 10	
	ignormality of the state of th	
	7 : M J i	
	1 M 2 - 3	
	h = quito	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	(1,1) aim = 3	980
	CO. 2 2 3 2 2 4 4 4	
	2: 14:017	
	Fig. 14 Car	
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