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LAB PROGRAM 1: Write a program to simulate the working of stack using an array with the following:
 b) Push b) Pop c) Grisplay.
The peogram should print appropriate messages for stack overflow, stack underflow.
 #include & stdio. h>
 #inthode ( ) x0 (ess h)
 #include < conio. h>
  # define STACK_SIZE 5
   int top = -1 ;
   int $[10];
   int item;
   void push ()
    if (top = = STACK_SIZE -1)
      peruf ("Stack overflow \n");
     top = top + 1;
     strop]: item; print (" them has been inserted \n");
     int pop ()
       if (top==-1) return -1;
      return S [top--];
     Void display ()
      if (top = = -1) 3
```

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prints ("Stack is empty \n");
return;
return;
 printf ("Contents of the stack:\n");
for (i=0;i <= top; i++)
   prints ("%d In", s[i]);
 void main()
    int tem-deleted;
    int choice;
Clrsce();
    for (;;)
      print (" In 1. PUSH In 2: POP In 3: DISPLAY IN 4: EXITIN")
    printf ("Enter your choice \n");
     Scanf (" % d", & choice);
    Switch (choice)
     case 1: print{("Enter the item to be insexted \n");
          scanf ("%d", &item);
           prints (" tem has been instited \n");
  case 2: item-deleted=pop();
         y (item_deleted ==-1)
           puint ("Stack is empty \n");
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else prints ("stem deleted is %od \n", item_deleted);
case 3: display();
default: prints ("Invalid choice \n");
DUTPUT:
1. PUSH
2. POP
3. DISPLAY
Enter your choice
Enter the item to be inserted
 Item has been inserted
1. PUSH
2-POP
3-DISPLAY
Enter your choice
Enter the item to be inserted
Item has been inserted
 1. PUSH
2. POP
3. DISPLAY
```

Enler your choice

Enter the item to be inserted 98 Item has been inserted 1. PUSH 2. POP 3. DISPLAY Enter your choice Enter the item to be inserted Item has been inserted 1. PUSH 2. POP 3. DISPLAY Enter your choice Enter the item to be inserted 45 Them has been viseted 1. PUSH 2. POP 3. DISPLAY Enter your choice Enter item to be injulied Stack overflow 1. PUSH 2. 101 3. DISPLAY ander your choice

Contents of the stack are: 4 98 33 45 1. PUSH 2. PDP 3. DISPLAY Enter your choice Hem deleted is 45 1. PUSH 2-POP 3. DISPLAY Enter your choice 9 Hem deleted is 33 1. PUSH 2. POP 3. DISPLAY Enter your Choice Item deleted is 98 1. PUSH 2. POP 3. DISPLAY Enter your choice Item deleted is 6 1. PUSH 2 POP

3. DISPLAY
Enter your choice
2
I fem deleted is 4
1. PUSH
2. POP
3. DISPLAY
Enter your choice
2
Stack is empty
1. PUSH
2. POP
3. DISPLAY
Enter your choice

```
1. PUSH
2. POP
3. DISPLAY
Enter your choice
Enter the item to be inserted
Item has been inserted
1. PUSH
2. POP
3. DISPLAY
Enter your choice
Enter the item to be inserted
Item has been inserted

    PUSH

2. POP
3. DISPLAY
Enter your choice
Enter the item to be inserted
98
Item has been inserted
1. PUSH
2. POP
DISPLAY
Enter your choice
Enter the item to be inserted
```

Scanned with CamScanner

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55
Item has been inserted
1. PUSH
2. POP
3. DISPLAY
Enter your choice
1
Enter the item to be inserted
3 50
Item has been inserted
15,000 (10,000)
2. POP
3. DISPLAY
Enter your choice
Enter the item to be inserted
7
Stack overflow
Item has been inserted
1 4 12060
2. POP
3. DISPLAY
Enter your choice
3
Contents of the stack are:
Н
8
273
33
```

```
1. PUSH
2. POP
3. DISPLAY
Enter your choice
Item deleted is 98
1. PUSH
2. POP
3. DISPLAY
Enter your choice
Item deleted is 6
1. PUSH
2. POP
3. DISPLAY
Enter your choice
Item deleted is 4
1. PUSH
2. POP
3. DISPLAY
Enter your choice
Stack is empty
1. PUSH
2. POP
3. DISPLAY
Enter your choice
```

TENED UNISH 2. POP 3. DISPLAY Enter your choice Enter the item to be inserted Item has been inserted PUSH 2. POP 3. DISPLAY Enter your choice Enter the item to be inserted tem has been inserted PUSH 2. POP 3. DISPLAY Enter your choice Enter the item to be inserted ш tem has been inserted PUSH 2. POP 3. DISPLAY Enter your choice Enter the item to be inserted