29/09/25

1) Write a program to simulate the working of stack using an array ~~using~~ with the following

a) Push
b) Pop
c) Peek
d) Display

The program should print appropriate message for stack overflow, stack underflow.

```
#include<stdio.h>
#include<~~conio~~ stdlib.h>
# define SIZE 10
   Void push(int);
    Void Pop( );
    Void PeeK();
    void display();
  int Stack [SIZE], top=-1;
Void main ()
{ int value, Choice;
   ~~clrscr();~~
   While (1) {
      printf(" *** MENU*** \n");
      Printf("1. Push  \n 2. POP \n 3. Peek  \n 4.Display \n
               5. Exit");
      Printf("Enter your Choice: ");
      Scanf ("%d", & choice);
      Switch (Choice) {
        Case1: printf ("Enter the Value to be inserted:");
               scanf ("%d", &value);
               Push (value);
               break;
        Case 2: POP();
               break;
        Case 3; ~~display~~ Peek ();
               break;
        case 4! display();
               break;
        Case 5! exit(0);
   default: printf("\n Wrong selection!!! Try Again!!!");
  }
 }
}

Void push (int  Value) {
   if (TOP = = SIZE -1 )
      Printf ("\n Stack is Full!!! Insertion is not Possible!
                                   \n stack overflow");
   else {
     top ++;
     stack [TOP]=value ;
     Printf(" \n Insertion Success!");
   }
 }

Void pop () {
  if (Top = = -1)
    Printf(" \n Stack is empty, deletetion not possible! \n
                                   \n stak underflow");
 else {
   Printf (" \n Deleted: %.d", stack (top]);
    top--;
  }
}
void peek () {

   if (Top = = -1)
 { Print f ( " underflow");
  }
 else
 { printf ( " %.d ", stak [top]);
 }
}

Void display() {
if (Top== -1)
   Printf(" \n stak isempty ");
else{
  int i;
```

```
printf (
  for (i=t
     print
   }
  }
```

Output

```
*** MEN
1. Push
2. Pop
3. Peek
4. Display
5. Exit
Enter your
Enter the
Insertion
*** MEN
1. Push
2. pop
3. peek
4. Display
5. Exit
Enter your
Enter the v
Insertion
*** M
1. push
2. pop
3. peek
4. Displa
5. Exit
Enter ~~the~~
Stack el
32   **
1. Push
2. Pop
3. peek
4. Displ
5. Exit
Enter y
Delete
```

Try Again!!!");

is not possible

low");

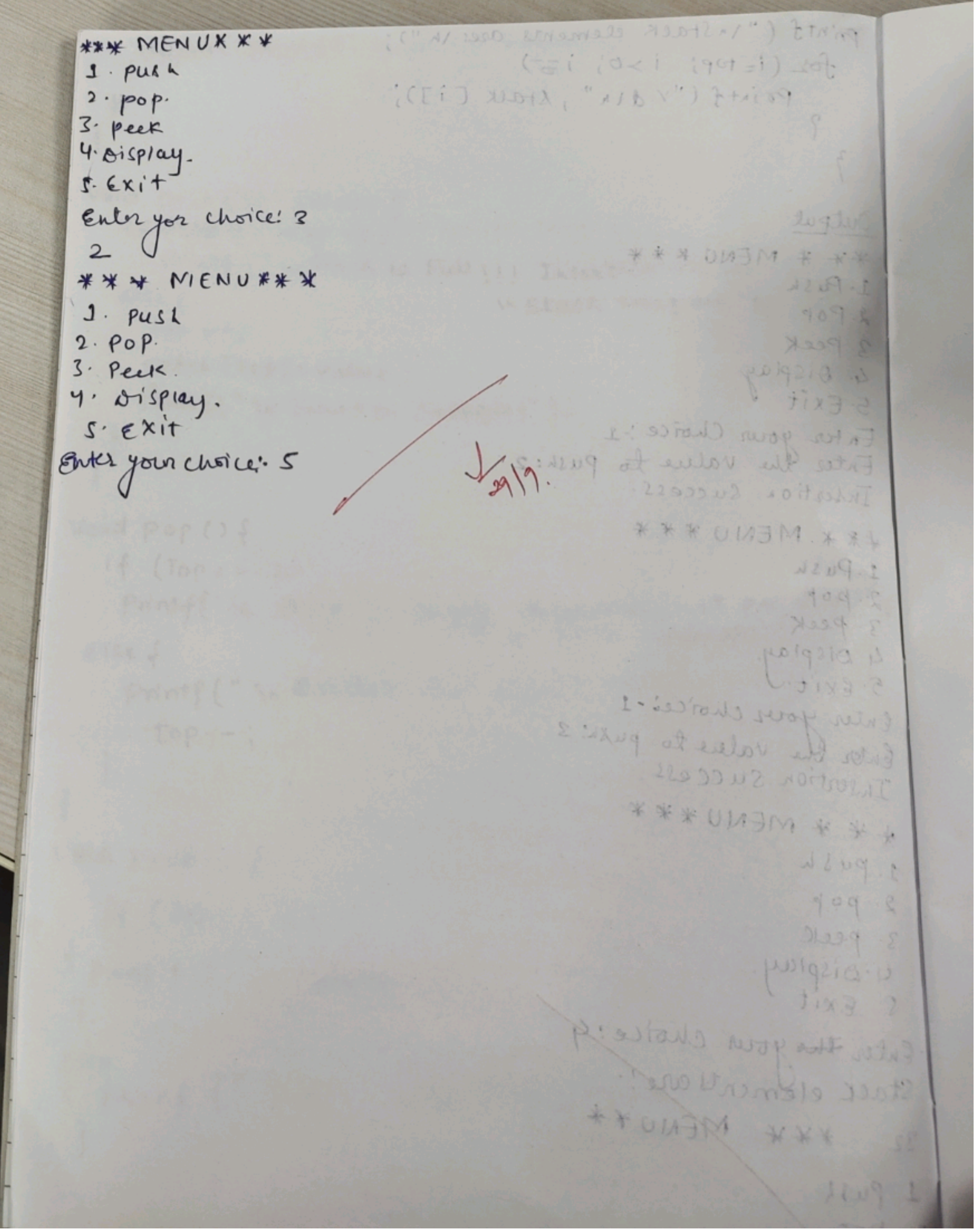
t possible!

rflow");

```
printf ("\nStack elements are: \n");
  for (i=top; i>0; i--)
     printf("%d\n", stack [i]);
    }
  }
```

Output

```
*** MENU ***
1. Push
2. Pop
3. Peek
4. Display
5. Exit
Enter your Choice :-1
Enter the value to push: 2
Insertion success.
*** MENU ***
1. Push
2. pop
3. peek.
4. Display.
5. Exit.
Enter your choice:-1
Enter the value to push: 3
Insertion success
*** MENU ***
1. push
2. pop
3. peek
4. Display.
5. Exit
Enter ~~the~~ your choice:4
Stack elements are:
32      *** MENU **
1. Push
2. pop.
3. peek
4. Display.
5. Exit
Enter your choice:2
Deleted:3
```



```
*** MENUX**
1. push
2. pop.
3. peek
4. Display.
5. Exit
Enter yor choice: 3
 2
*** MENU***
1. push
2. POP.
3. Peek.
4. Display.
5. Exit
Enter your choice: 5
```

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