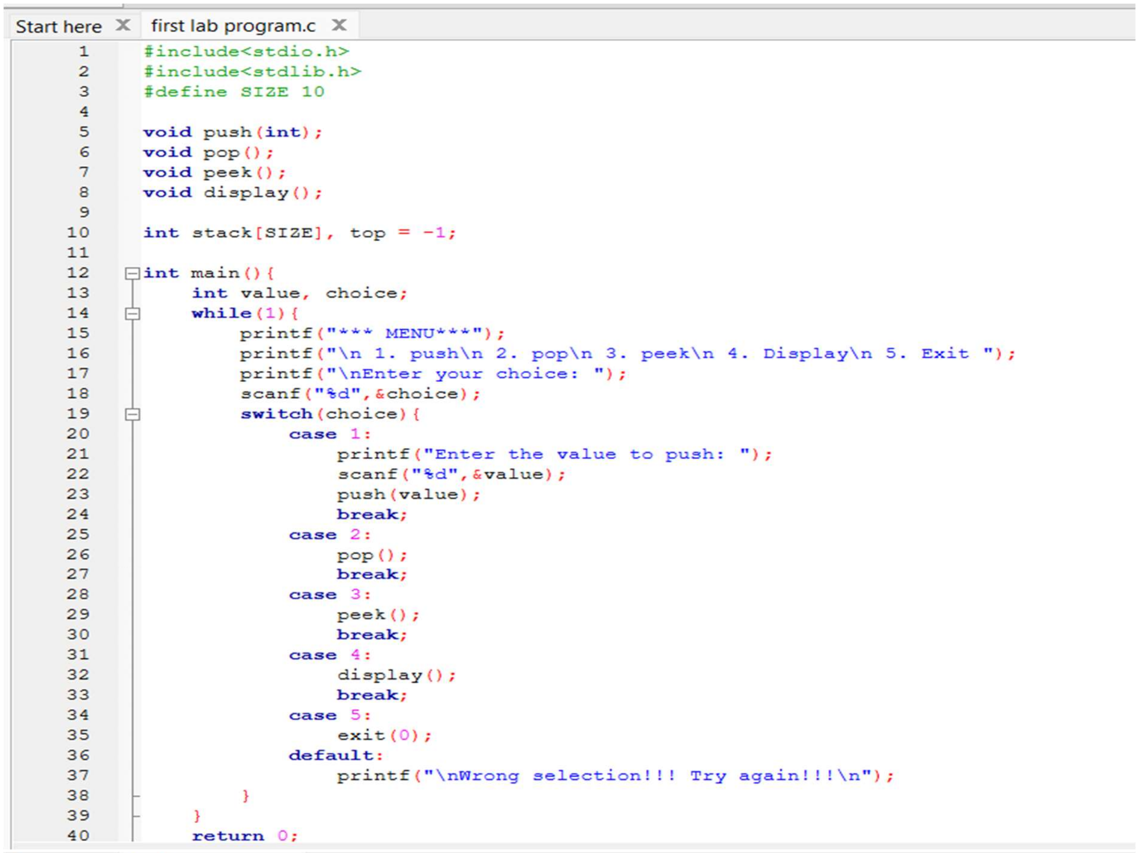
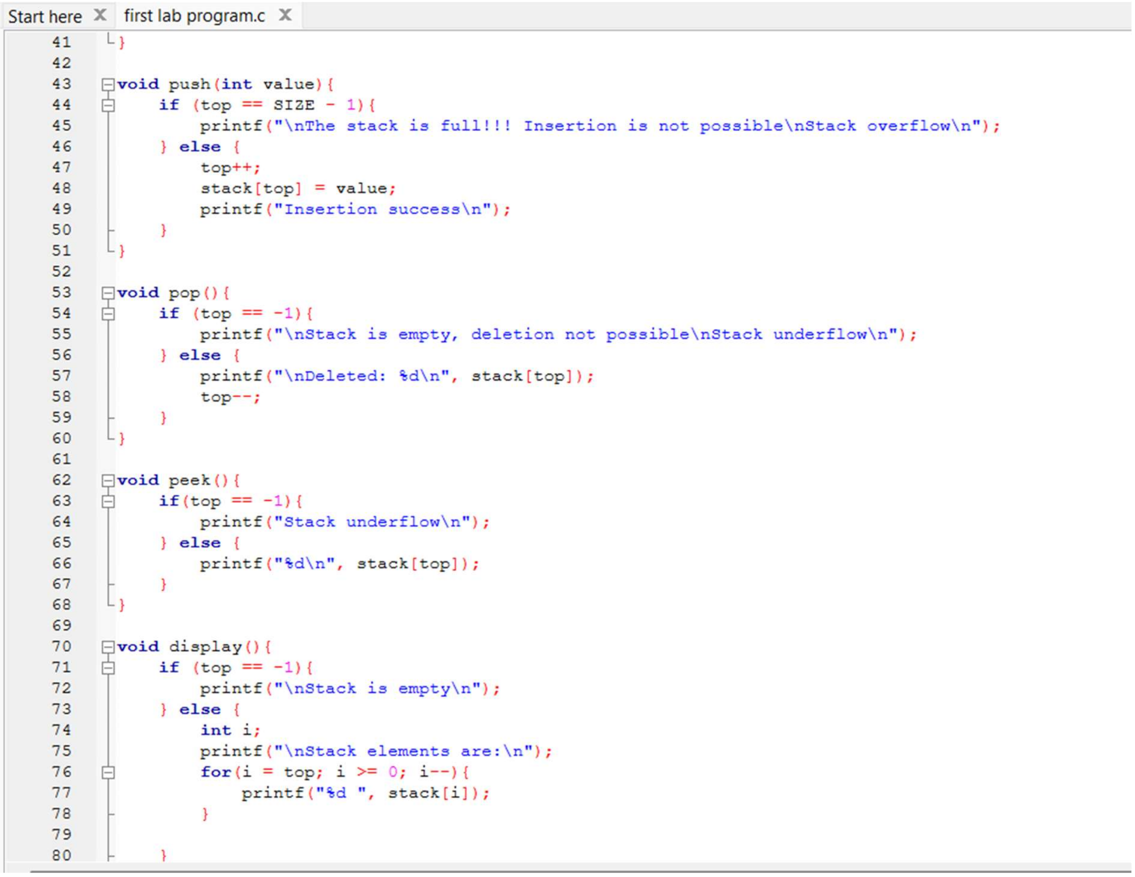
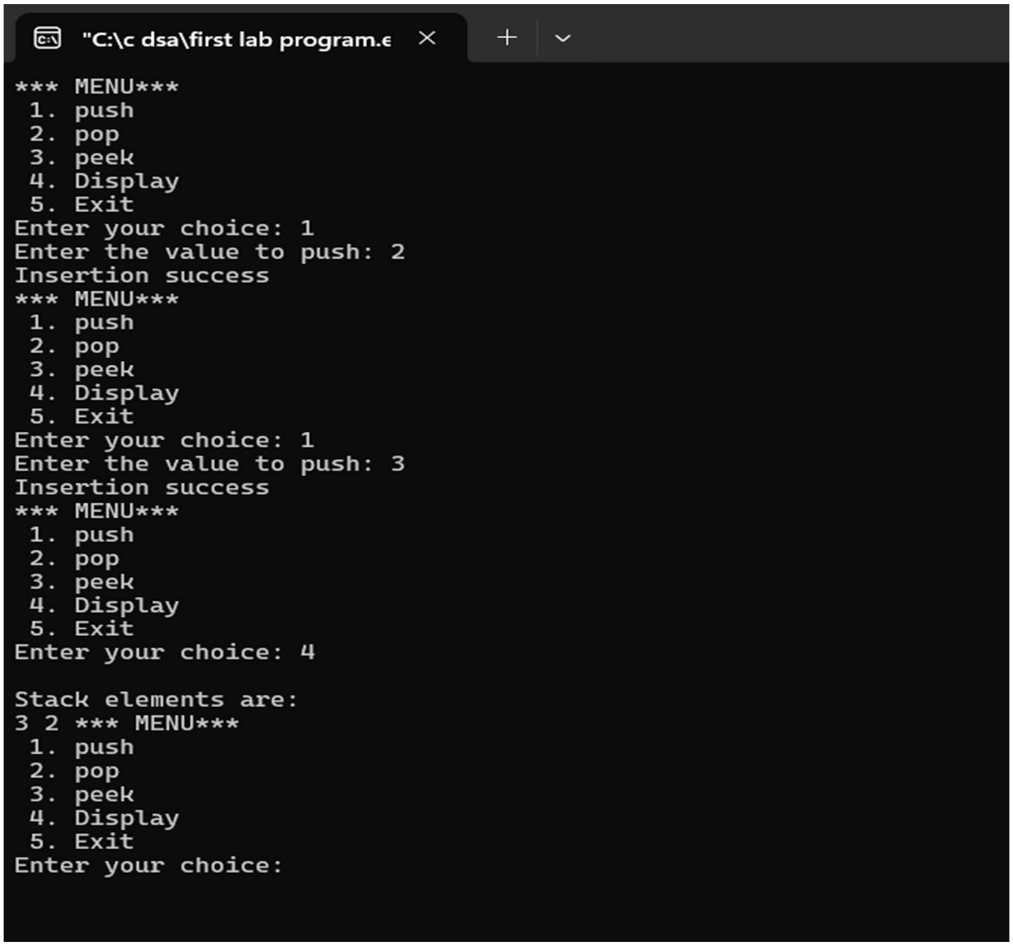


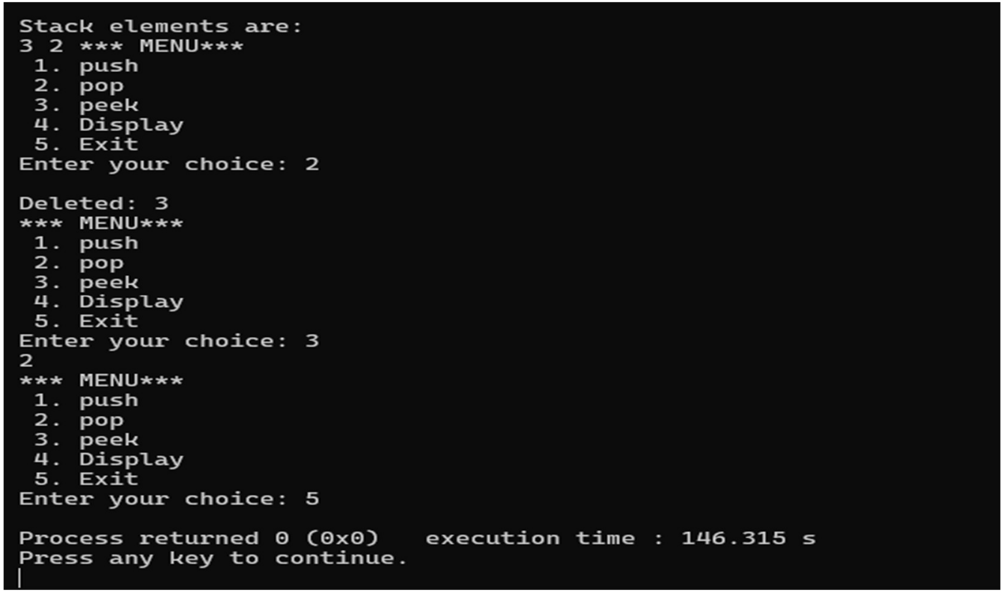
```c
#include<stdio.h>
#include<stdlib.h>
#define SIZE 10

void push(int);
void pop();
void peek();
void display();

int stack[SIZE], top = -1;

int main(){
    int value, choice;
    while(1){
        printf("*** MENU***");
        printf("\n 1. push\n 2. pop\n 3. peek\n 4. Display\n 5. Exit ");
        printf("\nEnter your choice: ");
        scanf("%d",&choice);
        switch(choice){
            case 1:
                printf("Enter the value to push: ");
                scanf("%d",&value);
                push(value);
                break;
            case 2:
                pop();
                break;
            case 3:
                peek();
                break;
            case 4:
                display();
                break;
            case 5:
                exit(0);
            default:
                printf("\nWrong selection!!! Try again!!!\n");
        }
    }
    return 0;
```



```c
}

void push(int value){
    if (top == SIZE - 1){
        printf("\nThe stack is full!!! Insertion is not possible\nStack overflow\n");
    } else {
        top++;
        stack[top] = value;
        printf("Insertion success\n");
    }
}

void pop(){
    if (top == -1){
        printf("\nStack is empty, deletion not possible\nStack underflow\n");
    } else {
        printf("\nDeleted: %d\n", stack[top]);
        top--;
    }
}

void peek(){
    if(top == -1){
        printf("Stack underflow\n");
    } else {
        printf("%d\n", stack[top]);
    }
}

void display(){
    if (top == -1){
        printf("\nStack is empty\n");
    } else {
        int i;
        printf("\nStack elements are:\n");
        for(i = top; i >= 0; i--){
            printf("%d ", stack[i]);
        }

    }
```



```
*** 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 your choice: 4

Stack elements are:
3 2 *** MENU***
 1. push
 2. pop
 3. peek
 4. Display
 5. Exit
Enter your choice:
```



```
Stack elements are:
3 2 *** MENU***
 1. push
 2. pop
 3. peek
 4. Display
 5. Exit
Enter your choice: 2

Deleted: 3
*** MENU***
 1. push
 2. pop
 3. peek
 4. Display
 5. Exit
Enter your choice: 3
2
*** MENU***
 1. push
 2. pop
 3. peek
 4. Display
 5. Exit
Enter your choice: 5

Process returned 0 (0x0)   execution time : 146.315 s
Press any key to continue.
```

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.

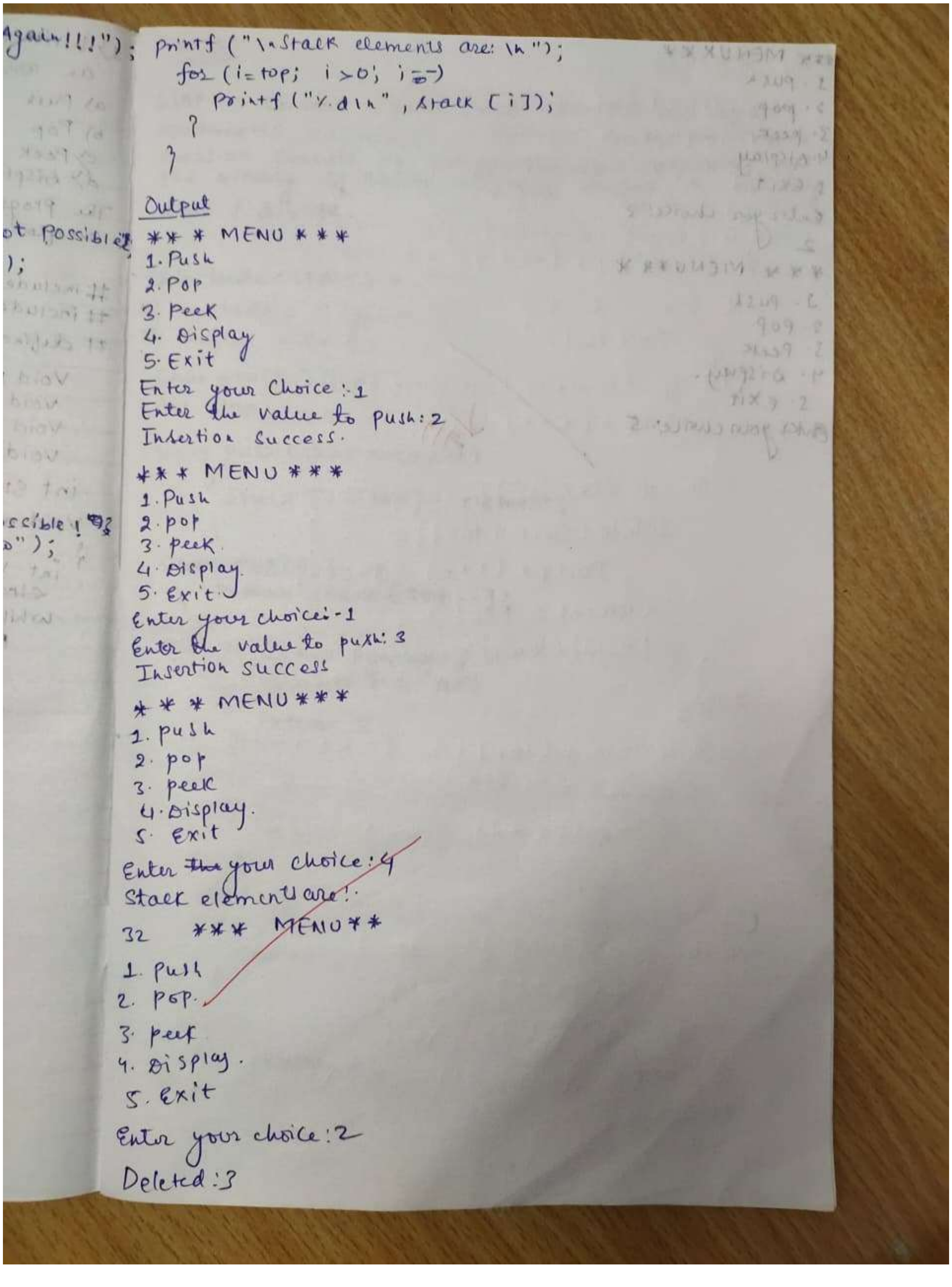
```
#include<stdio.h>
#include<stdlib.h ~~conio~~.h>
# define SIZE 10
  Void push(int);
  void Pop( );
  void Peek();
  void display();
 int Stack [SIZE], top=-1;
Void main ()
{ int value, choice;
  ~~clrscr();~~
  while (1) {
     printf(" *** MENU*** \n");
     Printf("1. Push \n 2. POP \n 3. Peek \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; Peek ~~display~~ ();
               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 stak underflow");
  else {
    printf(" \n Deleted: %d" stack [top]);
      top--;
   }
}
void peek () {
   if (Top = = -1)
  { print f (" underflow");
  }
  else
  { print f (" %d ", stak [top]);
  }
}

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

```
printf ("\n
 for (i=to
    printf
  }
 }
```

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
Insertion
*** M
1. push
2. pop
3. peek
4. Displ
5. Exit
Enter ~~the~~
Stack el
32     **
1. push
2. pop
3. peek
4. Disp
5. Exi
Enter y
Delete
```



```
Again!!!");
ot Possible
);
ssible!
o");
```

```
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
```

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

29/9.

06/10

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arithm
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```
#inclu
# incl
# def
 Char s
 int
 Void
     {
     }
 Char
   }
~~~~int
     i
```