Start here | .c | *Untitled2 | 33.c

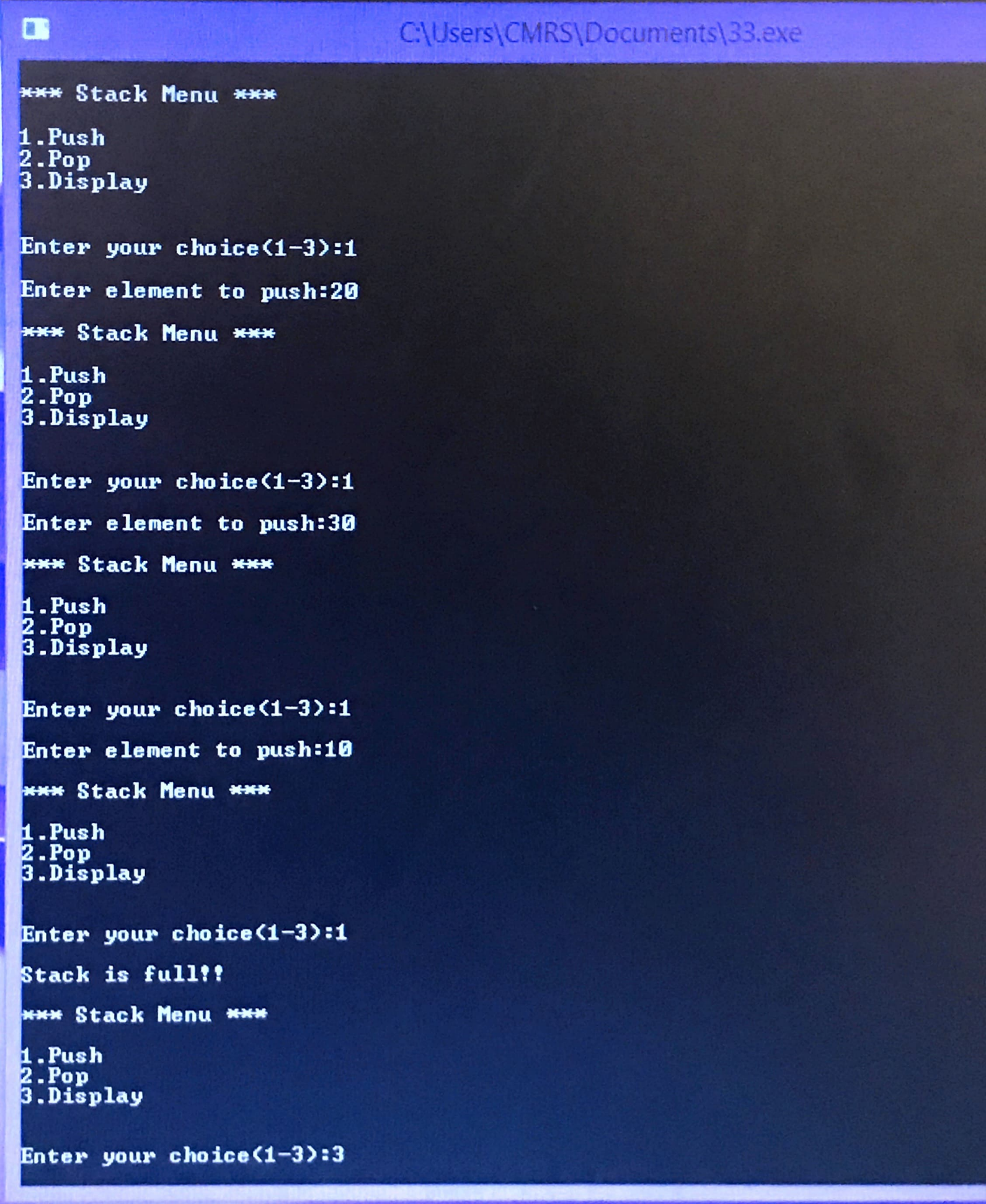
```c
#include<stdio.h>
#include<stdlib.h>
#define MAX 3
int top=-1,stack[MAX];
void push();
void pop();
void display();

void main()
{
    int ch;

    while(1)
    {
        printf("\n*** Stack Menu ***");
        printf("\n\n1.Push\n2.Pop\n3.Display\n");
        printf("\n\nEnter your choice(1-3):");
        scanf("%d",&ch);

        switch(ch)
        {
            case 1: push();
                    break;
            case 2: pop();
                    break;
            case 3: display();
                    break;
            default: printf("\nWrong Choice!!\n");
        }
    }
```

Start here | .c | *Untitled2 | 33.c

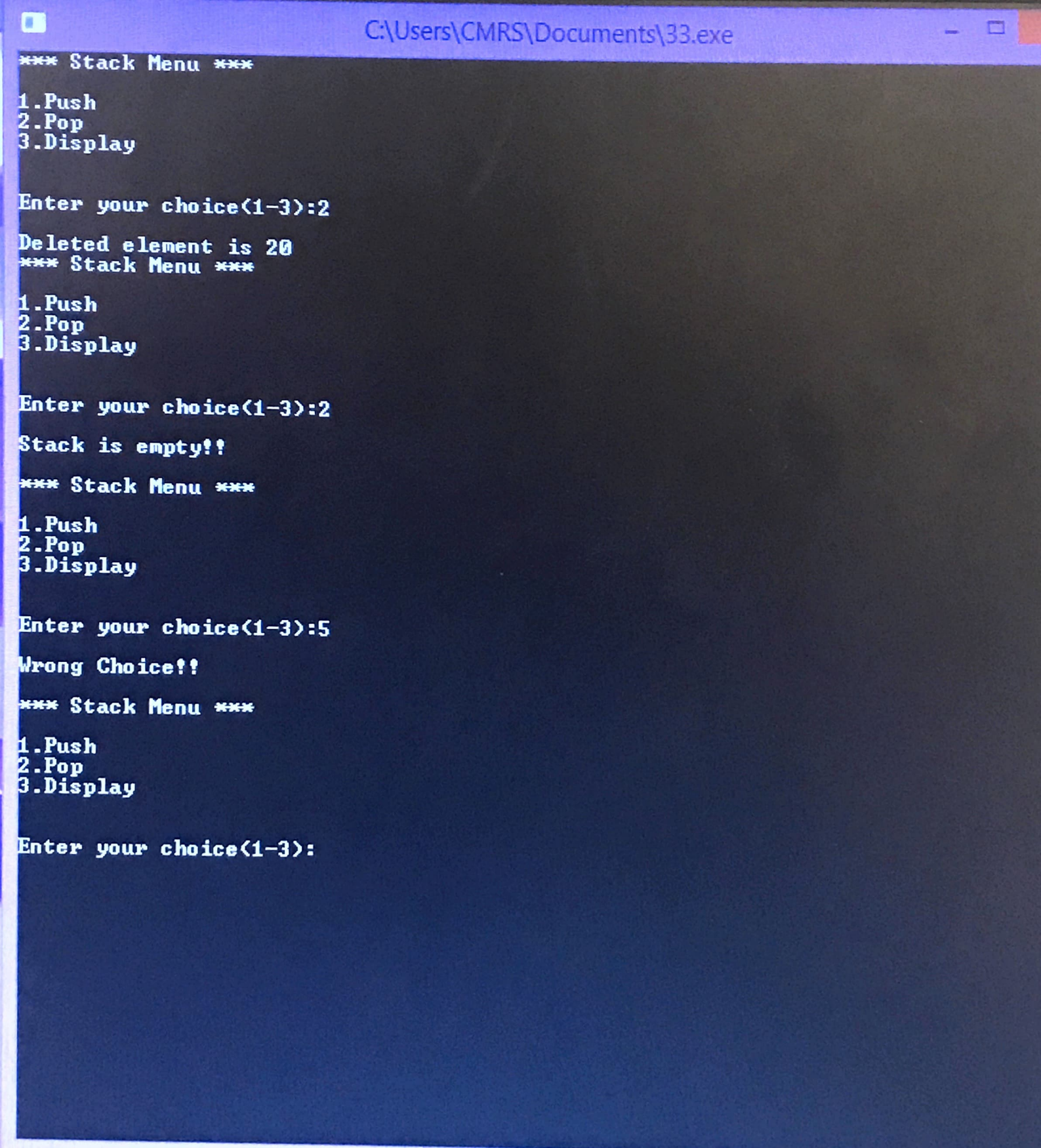
```
28                  default: printf("\nWrong Choice!!\n");
29              }
30          }
31      }
32
33      void push()
34      {
35          int val;
36
37          if(top==MAX-1)
38          {
39              printf("\nStack is full!!\n");
40          }
41          else
42          {
43              printf("\nEnter element to push:");
44              scanf("%d",&val);
45              top=top+1;
46              stack[top]=val;
47          }
48      }
49
50      void pop()
51      {
52          if(top==-1)
53          {
54              printf("\nStack is empty!!\n");
55          }
56          else
57          {
```

Start here | .c | *Untitled2 | 33.c

```
50  void pop()
51  {
52      if(top==-1)
53      {
54          printf("\nStack is empty!!\n");
55      }
56      else
57      {
58          printf("\nDeleted element is %d",stack[top]);
59          top=top-1;
60      }
61  }
62
63  void display()
64  {
65      int i;
66
67      if(top==-1)
68      {
69          printf("\nStack is empty!!\n");
70      }
71      else
72      {
73          printf("\nStack is...\n");
74          for(i=top;i>=0;--i)
75              printf("%d\n",stack[i]);
76      }
77  }
78
```


C:\Users\CMRS\Documents\33.exe
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):1
Enter element to push:20
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):1
Enter element to push:30
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):1
Enter element to push:10
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):1
Stack is full!!
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):3

```
Enter your choice(1-3):3

Stack is...
10
30
20

*** Stack Menu ***

1.Push
2.Pop
3.Display


Enter your choice(1-3):2

Deleted element is 10
*** Stack Menu ***

1.Push
2.Pop
3.Display


Enter your choice(1-3):2

Deleted element is 30
*** Stack Menu ***

1.Push
2.Pop
3.Display


Enter your choice(1-3):2

Deleted element is 20
*** Stack Menu ***

1.Push
2.Pop
3.Display


Enter your choice(1-3):2

Stack is empty!!

*** Stack Menu ***

1.Push
2.Pop
3.Display
```


C:\Users\CMRS\Documents\33.exe
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):2
Deleted element is 20
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):2
Stack is empty!!
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):5
Wrong Choice!!
*** Stack Menu ***
1.Push
2.Pop
3.Display
Enter your choice(1-3):

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1. Write a program to simulate the working of a stack using an array with the following:
   a) push
   b) pop
   c) display
   for stack over flow - print a appropriate message

Code:

```
#include <stdio.h>
#include <stdlib.h>
#define MAX 3
int stack [MAX];
int top = -1;
void push ();
    pop ();    void display ();
    main ()
{
  int ch;
  while (1)
{

printf ("*** Stack Menu ***");
printf ("1. push \n");
printf ("2. pop \n");
printf ("3. display \n");
printf ("Enter your choice from (1-3): ");
    Scanf ("%d", &ch);
Switch (ch)
  {
   case 1 : push ();
        break;
    Case 2: pop ();
```

```
        break;
    Case 3: display ();
        break;
    default : printf ("Wrong choice ! \n");
      }
    }
    }
     Void push ()
   {
    int val;
      if (top == Max-1);
   {
    printf ("Stack Overflow !");
   } else
     printf ("Enter element to push : ");
      scanf ("%d, &val);
        top = top +1;
       stack [top] = val;
   }
   }
      Void pop ()
{ if (top == -1)
   { printf ("\n Stack is Empty !");
   }
   else { printf ("\n deleted element is %d",
                    stack [top]);
       top = top -1; } }
  Void display ()
{ int i;
      if (top == -1)
   { printf ("\n Stack is Empty !!");
} else
```

```
{ printf ("\n stack is.... \n");
  for (i=top; i>=0; i--)
   printf ("%d \n", stack[i]);
      }
      }
```

Output:

*** Stack Menu ***
1. push
2. pop
3. display
Enter your choice from (1-3): 1
enter element to push : 20
*** Stack Menu ***
1. push
2. pop
3. display
Enter your choice from (1-3): 1
enter element to push : 30
*** Stack Menu ***
1. push
2. pop
3 display
Enter your choice from (1-3): 1
enter element to push : 10
*** Stack Menu ***
1. push
2. pop
3. display
Enter your choice from (1-3) : 1
Stack Overflow!

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*** Stack menu ***
1. push
2. pop
3. display
Enter your choice from (1-3): 3
stack is...
20
30
10
*** Stack Menu ***
1. push
2. pop
3. display
Enter your choice from (1-3): 2
deleted element is: 20.