P1 Write a program to simulate the work of stack using array with following push, pop & display & program shld print appropriate in case of stack overflow & underflow

ANS

```c
#include <stdio.h>
#define OM 108
int toh=-1;
int stack[OM];

void push()

{ int pushite;
  if ( toh == (OM-1))
  {     printf ("Stack Overflow\n"); }
  else

  {   printf (" Enter element to be pushed: ");
      scanf ( "%d", & pushite);
      top++;
      stack[toh] = pushite; }

}
void pop ()
{   if (toh== (-1))
       { printf (" Stack Underflow \n"); }
    else
    { printf ( " Popped element will be : %d", stack[top])
         top-- ; }
}
```

```c
void display ()
{ int i;
  if (top == -1)
    printf ("Stack is empty");
  else
  {   printf ( for (i= top; i>=0; i--)
      printf ("%d, stack[i]);
  }
}

int main ()
{ int opt
  do {
  printf ( "1.\nPush");
  punf ("\n 2. Pop");
  punf ("\n 3. Display);
  punf ("\n 4. Exit");
  punf ("\n Enter choice");
```

```c
scanf ("%d", &opt);

switch (opt)

{   case 1:

        push ();
        break;
    case 2:

        pop ();
        break;
    case 3:

        display ();
        break;

    case 4: break;

    default: printf ("invalid choice");

} } while (opt != 4);

}
```

OUTPUT.

1. Push.
2. Pop.
3. Display
4. Quit
   Enter your choice : 1.
      Enter element to be pushed : 11.

1. Push
2. Pop
3. display
4. Exit

Enter your choice: 2
popped item is 11.

1. Push
2. Pop
3. display
4. Exit

Enter your choice: 3
  Empty stack

1. Push
2. Pop
3. Display
4. Exit

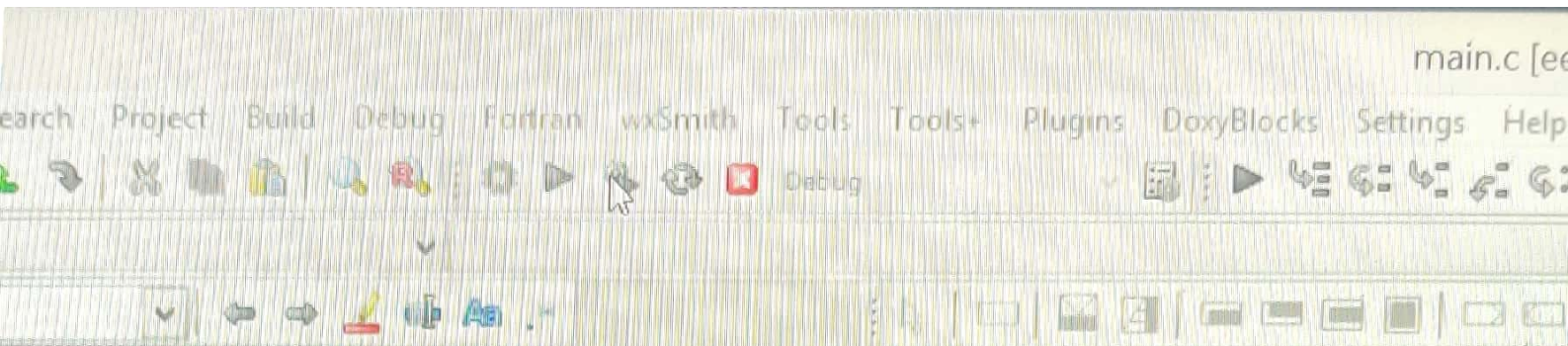2. Pop. Enter your choice: 2
    Stack underflow

1. Push
2. Pop
3. display
4. Exit
Enter your choice: 4.
program returned 0 (0x0)

```
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 1
Enter the item to be pushed in stack : 11
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 2
Popped element is : 11
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 3
Stack is empty
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 1
Enter the item to be pushed in stack : 100
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 1
Enter the item to be pushed in stack : 200
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 3
Stack elements :
200
100
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 4

Process returned 0 (0x0)    execution time : 38.983 s
Press any key to continue.
```

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"C:\SHIVANSHU\1ST YEAR C PROGRAMMING BASIC\eee\bin\Debug\eee.exe"   —

```
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 2
Stack Underflow
1.Push
2.Pop
3.Display
4.Quit
Enter your choice : 4

Process returned 0 (0x0)    execution time : 53.695 s
Press any key to continue.
```

```
25              if (top == -1)
26                  printf ("Stack Underflow\n");
```

Search results X   Build log X   Build messages X   CppCheck/Vera++ X   CppCheck/Vera+

(all items are up-to-date).

Debug in eee (compiler: GNU GCC Compiler)----------------

ence: C:\SHIVANSHU\1ST YEAR C PROGRAMMING BASIC\eee\bin\Debug\eee.exe
ram Files (x86)\CodeBlocks/cb_console_runner.exe" "C:\SHIVANSHU\1ST YEAR C PROGRAMMIN