```
#include <stack>
stack<char> s;
char x, y, z
```

Results after each line of code

a)
```
s.push('a');
s.push('b');
s.push('c');
s.pop();
s.pop();
s.pop();
```

s = [a]
s = [a, b]
s = [a, b, c]
s = [a, b]
s = [a]
s = []

b)
```
s.push('a');
s.push('b');
s.push('c');
x = s.top();
s.pop();
y = s.top();
s.pop();
s.push(x);
s.push(y);
s.pop();
```

s = [a]	x = NaN	y = NaN
s = [a, b]	x = NaN	y = NaN
s = [a, b, c]	x = NaN	y = NaN
s = [a, b, c]	x = 'c'	y = NaN
s = [a, b]	x = 'c'	y = NaN
s = [a, b]	x = 'c'	y = 'b'
s = [a]	x = 'c'	y = 'b'
s = [a, c]	x = 'c'	y = 'b'
s = [a, c, b]	x = 'c'	y = 'b'
s = [a, c]	x = 'c'	y = 'b'

c)
```
s.push('a');
s.push('b');
s.push('c');
while(!s.empty()) s.pop(); - 1st
while(!s.empty()) s.pop(); - 2nd
while(!s.empty()) s.pop(); - 3rd
while(!s.empty()) s.pop(); - 4th
```

s = [a]	
s = [a, b]	
s = [a, b, c]	
s = [a, b]	Loop starts
s = [a]	Loop runs
s = []	Loop runs
s = []	Loop exits

d)
```
s.push('a');
s.push('b');
while(!s.empty()) x = s.top(); s.pop(); - 1st
while(!s.empty()) x = s.top(); s.pop(); - 2nd
while(!s.empty()) x = s.top(); s.pop(); - 3rd
s.push('c');
s.pop();
s.push('a');
s.pop();
s.push('b');
s.pop();
```

s = [a]		x = NaN
s = [a, b]		x = NaN
s = [a]	Loop starts	x = 'b'
s = []	Loop runs	x = 'a'
s = []	Loop exits	x = 'a'
s = [c]		x = 'a'
s = []		x = 'a'
s = [a]		x = 'a'
s = []		x = 'a'
s = [b]		x = 'a'
s = []		x = 'a'