

01/10/2024

WEEK 01

function push

if ~~max~~ stack is full

print "stack overflow"

end if

top = top + 1

stack[top] = value

print "value pushed", value

end function

function pop

if stack is empty

print "stack overflow"

end if

value = stack[top]

top = top - 1

print "value popped", value

return value

end function

function display:

if stack is empty then

print "stack is empty"

return

endif

print "stack elements"

for i from top to down

print stack[i]

end for

end function

(2)

```
#include <stdio.h>
#include <stdlib.h>
#define size 3
```

```
int top = -1;
int stack[size];
```

```
void push(int item) {
    if (top == size - 1) {
        printf("\n stack overflow");
    } else {
        top++;
        stack[top] = item;
        printf("\n element %.d pushed to stack", item);
    }
}
```

```
void pop() {
    if (top == -1) {
        printf("\n stack overflow");
    } else {
        printf("\n element popped is %.d", stack[top]);
        top--;
    }
}
```

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



```

int main () {
    int ch, item;
    for (;;) {
        printf ("\n 1: Push");
        printf ("\n 2: Pop");
        printf ("\n 3: Display");
        printf ("\n 4: Exit");
        printf ("%d", &ch);
        switch (ch) {
            case 1:
                printf ("Enter value to be pushed");
                scanf ("%d", &item);
                push (item);
                break;
            case 2:
                printf pop();
                break;
            case 3:
                display ();
                break;
            case 4:
                exit (0);
                break;
            default:
                printf ("Invalid choice");
                break;
        }
    }
    return 0;
}

```


Output:

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice: 1

Enter value to be pushed: 10

Element 10 pushed to stack

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice: 1

Enter value to be pushed: 20

Element 20 pushed to stack

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice: 1

Enter value to be pushed: 30

Element 30 pushed to stack

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice: 3

Stack values: 30.
20
10

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice: 2

element popped is 30

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice: 1

element popped is 20

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice: 3
Stack values: 10

Shreshth B
11/10/24