

Week 1
Q) WAP to simulate the working
stack using an array with
1) Push 2) Pop 3) Peek 4) Display
functions

#include <stdio.h>

#define MAX 5

char stack[MAX];
int top = -1;

void push(char x){

if (top == MAX - 1){

printf("Stack overflow");

return;

}

stack[++top] = x;

}

void peek(){

if (top == -1){

printf("Stack underflow");

printf("Top element: %c", stack[top]);

}

```
void pop() {
    if (top == -1) {
        printf("Stack underflow\n");
        return;
    }
    printf("Popped element is : %c\n",
           stack[top - 1]);
}
```

```
void display() {
    if (top == -1) {
        printf("Stack Empty\n");
        return;
    }
    printf("Stack contents : ");
    for (int i = top; i >= 0; i--) {
        printf("%c ", stack[i]);
    }
    printf("\n");
}
```

```
int main() {
    int op;
    char x;
    while (1) {
        printf("\n 1 for push \n 2 for pop\n"
               "3 for peek \n 4 for display\n");
        printf("Enter operation : ");
        scanf(" %d", &op);
    }
}
```

```
switch(cops)
case 1:
    printf("Enter element : ");
    scanf("%d", &x);
    push(x);
    break;

case 2:
    pop();
    break;

case 3:
    display();
    break;

case 4:
    peek();
    break;

case 5:
    printf("Existing -- \n");
    return 0;
```

default :

printf("Invalid operation\n");

}

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- 1 for push
- 2 for pop
- 3 for display
- 4 for peek
- 0 to exit

Enter op:2

Stack underflow

Enter op : 3

Stack is empty

Enter op : y

Stack underflow - problem fitting

Enter op: 1 computer
op: 2

Enter element 3

Enter op: 1

enter element 3

Enter ?p : 1

~~enter element 1~~

~~enver op 1~~

Enter op 1

enter element 1

Stack overflow.