

25/9/20 Lab 1 - Stack

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

```
int main()
{
```

```
    int stack[size], choice, element;
```

```
char ch;
```

```
do {
```

```
    printf("Enter your choice : \n");
```

```
    printf("1. Push \n");
```

```
    printf("2. Pop \n");
```

```
    printf("3. Display \n");
```

```
    printf("4. Exit \n");
```

```
    scanf("%d", &choice);
```

```
    switch(choice)
```

```
{
```

```
    case 1: printf("Enter the element to be pushed : \n");
```

```
    scanf("%d", &element);
```

```
    push(stack, element);
```

```
    break;
```

```
    case 2: element = pop(stack);
```

```
    if (element == -1)
```

```
        printf("Stack Underflow \n");
```

```
    else
```

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```
printf ("Popped element is %d \n", element);
break;
```

```
case 3: display (stack);
break;
```

```
case 4: printf ("Exit");
break;
```

```
default: printf ("Invalid choice");
```

```
} while (choice != 4);
```

```
return 0;
}
```

```
void push (int stack[], int item)
```

```
{ if (top == size - 1)
{
```

```
    printf ("Stack Overflow");
}
```

```
else
{
```

```
    top++;

```

```
    stack[top] = item;
}
```

```
}
```

```
, int pop (int stack[])
{
```

```
    int popitem;

```

```
    if (top == -1)

```

```
        return -1;
    }
```

```
    else
{
```

```
        popitem = stack[top];

```

```
        top--;

```

```
        return (popitem);
    }
```

(2)

```
{ if (front == -1) { cout << "The stack is empty"; }
```

```
void display (int stack[])
```

```
{ int i;
```

```
printf ("The stack element : \n");
```

```
for (i = top; i >= 0; i--)
```

```
{ printf ("%d ", stack[i]); }
```

```
}
```