

Implementation of Stack using Array

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#include <stdio.h>

#include <stdlib.h>

#define SIZE 10

void push(int);

void pop();

void display();

int stack[SIZE], top = -1;

int main() {

    int value, choice;

    while (1) {

        printf("\n\n***** MENU *****\n");

        printf("1. Push\n2. Pop\n3. Display\n4. Exit\n");

        printf("Enter your choice: ");

        scanf("%d", &choice);

        switch (choice) {

            case 1:

                printf("Enter the value to be inserted: ");

                scanf("%d", &value);

                push(value);

                break;

            case 2:

                pop();

                break;

            case 3:

                display();

                break;

            case 4:

                exit(0);

            default:

                printf("\nWrong selection! Try again.");
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    }
}
return 0;
}

void push(int value) {
    if (top == SIZE - 1) {
        printf("\nStack is Full! Insertion is not possible.");
    } else {
        top++;
        stack[top] = value;
        printf("\nInsertion success! %d pushed.", value);
    }
}

void pop() {
    if (top == -1) {
        printf("\nStack is Empty! Deletion not possible.");
    } else {
        printf("\nDeleted: %d", stack[top]);
        top--;
    }
}

void display() {
    if (top == -1) {
        printf("\nStack is Empty!");
    } else {
        int i;
        printf("\nStack elements are:\n");
        for (i = top; i >= 0; i--) {
            printf("%d\n", stack[i]);
        }
    }
}

```

}

main.c	Output
<pre>1 #include <stdio.h> 2 #include <stdlib.h> 3 4 #define SIZE 10 5 6 void push(int); 7 void pop(); 8 void display(); 9 10 int stack[SIZE], top = -1; 11 12 int main() { 13 int value, choice; 14 15 while (1) { 16 printf("\n\n***** MENU *****\n"); 17 printf("1. Push\n2. Pop\n3. Display\n4. Exit\n"); 18 printf("Enter your choice: "); 19 scanf("%d", &choice); 20 21 switch (choice) { 22 case 1: 23 printf("Enter the value to be inserted: "); 24 scanf("%d", &value); 25 push(value); 26 break; 27 28 case 2: 29 pop();</pre>	<pre>***** MENU ***** 1. Push 2. Pop 3. Display 4. Exit Enter your choice: 1 Enter the value to be inserted: 10 Insertion success! 10 pushed. ***** MENU ***** 1. Push 2. Pop 3. Display 4. Exit Enter your choice: 3 Stack elements are: 10 ***** MENU ***** 1. Push 2. Pop 3. Display 4. Exit Enter your choice: 1</pre>