Ankit is a 5-year-old kid, who is playing in a boardroom with a basket and balls. Each ball is

having numbered on it like 1, 2, 3, …, 9. Ankit’s aunt asked him to put all boll inside the basket.

Here, the scenario is that basket is long enough to hold all balls but squeezed in width and can

hold only one boll at a time. When the next ball is inserted, then that ball can lie on top of the old

boll like this way.

• Push ball numbered as 1 inside the basket

• Push ball numbered as 8 inside the basket

• Push ball numbered as 9 inside the basket

• Push ball numbered as 7 inside the basket

• Push ball numbered as 2 inside the basket

• Pop ball from the basket

• Pop ball from the basket

• Push ball numbered as 3 inside the basket

Input Format

1 8 9 7 2 3

Output Format

1 8 9 3

Constraints

 size should not exceed 9

Code:

#*include* <stdio.h>

#*include* <stdbool.h>

#*define* *MAX\_SIZE* 100

typedef struct {

    int arr[*MAX\_SIZE*];

    int top;

} Stack;

void *initStack*(Stack \*stack) {

    stack->top = -1;

}

*bool* *isFull*(Stack \*stack) {

*return* stack->top == *MAX\_SIZE* - 1;

}

*bool* *isEmpty*(Stack \*stack) {

*return* stack->top == -1;

}

void *push*(Stack \*stack, int value) {

*if* (*isFull*(stack)) {

*printf*("Stack Overflow! Cannot push element.\n");

*return*;

    }

    stack->arr[++stack->top] = value;

*printf*("%d pushed to the stack.\n", value);

}

void *pop*(Stack \*stack) {

*if* (*isEmpty*(stack)) {

*printf*("Stack Underflow! Cannot pop element.\n");

*return*;

    }

    int value = stack->arr[stack->top--];

*printf*("%d popped from the stack.\n", value);

}

void *display*(Stack \*stack) {

*if* (*isEmpty*(stack)) {

*printf*("Stack is empty.\n");

*return*;

    }

*printf*("Stack elements: ");

*for* (int i = 0; i <= stack->top; i++) {

*printf*("%d ", stack->arr[i]);

    }

*printf*("\n");

}

int *main*() {

    Stack stack;

    int choice, value;

*initStack*(&stack);

*do* {

*printf*("\n1. Push\n");

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

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

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

*printf*("Enter your choice: ");

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

*switch* (choice) {

*case* 1:

*printf*("Enter the value to push: ");

*scanf*("%d", &value);

*push*(&stack, value);

*break*;

*case* 2:

*pop*(&stack);

*break*;

*case* 3:

*display*(&stack);

*break*;

*case* 4:

*printf*("Exiting the program.\n");

*break*;

*default*:

*printf*("Invalid choice! Please try again.\n");

        }

    } *while* (choice != 4);

*return* 0;

}

Output:

