

Name :- Aishwarya Ganesh Rawade

Roll No :- 25092034

Library Book Return Counter using Stack

```
#include <stdio.h>
#include <string.h>

#define MAX 10

char stack[MAX][50];
int top = -1;

void push(char book[]) {
    if (top == MAX - 1)
        printf("Shelf is full! Cannot add more books.\n");
    else {
        strcpy(stack[++top], book);
        printf("Book returned: %s\n", book);
    }
}

void pop() {
    if (top == -1)
        printf("No books to re-shelve!\n");
    else {
```

```
    printf("Re-shelving book: %s\n", stack[top--]);  
}  
}  
  
void peek() {  
    if (top == -1)  
        printf("No books in the pile.\n");  
    else  
        printf("Top book waiting: %s\n", stack[top]);  
}  
  
void display() {  
    if (top == -1)  
        printf("No books in the return pile.\n");  
    else {  
        printf("\n Books at the Return Counter (Top to Bottom):\n");  
        for (int i = top; i >= 0; i--)  
            printf(" %d. %s\n", i + 1, stack[i]);  
        printf("-----\n");  
    }  
}  
  
int main() {  
    int choice;  
    char book[50];
```

```
printf(" Library Book Return Counter Simulation using Stack
\n");

while (1) {

    printf("\n1. Return a Book\n2. Re-shelve Top Book\n3. View
Top Book\n4. Display All Returned Books\n5. Exit\n");

    printf("Enter your choice: ");

    scanf("%d", &choice);

    getchar(); // consume newline


switch (choice){

    case 1:

        printf("Enter book title: ");

        gets(book);

        push(book);

        break;

    case 2:

        pop();

        break;

    case 3:

        peek();

        break;

    case 4:

        display();
```

```
break;  
  
case 5:  
    printf("Exiting Library Simulation.\n");  
    return 0;  
  
default:  
    printf("Invalid choice! Try again.\n");  
}  
}  
}
```

Application:-

At a library return counter:

- When people return books, the most recently returned book stays on top of the pile.
- When the librarian picks up books to re-shelve, they take from the top — following LIFO (Last In, First Out) order.