# Stack Program

This program will implement a ten element Stack of integers. There will be two modes that it can run; one to follow the commands in an input file, and one to respond to user-entered commands.

# The Input File

This file consists of a list of commands in this format:

PUSH 12

POP

PEEK

PRINT

END

The END command ends the input file.

# Required Function: Push

This function takes the stack and an integer as arguments. It places the value on top of the stack and returns 0 for success or an error code for failure (stack overflow.)

# Required Function: Pop

This function takes the stack as its argument. It removes the top value from the stack and returns it. It should return an error value when it fails (Stack underflow.)

# Required Function: Peek

This function takes the stack as an argument. It returns the top value of the stack but does not remove it. It should return an error code if it fails (stack empty.)

# Required Function: Print

This function takes the stack as an argument. It prints the stack to the screen or returns an error code if the stack is empty. (void function)

# Notes

Push, Pop, and Peek must have NO output apart from the return value. (NO couts)

The program needs to display an error message when a function returns an error code.

The program must check for the successful opening of all files it uses.

The program must be well-commented.

The program must be printed out and turned in with this paper attached. (OTHER SIDE UP)

ALL PROGRAMS FROM NOW ON MUST HAVE NO GLOBAL VARIABLES (20% PENALTY EACH)

Stack Program Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- |
| Criteria | Points Possible | Points Earned |
| Reads the file correctly | 5 |  |
| Interprets commands correctly | 10 |  |
| Error checks file opening correctly | 5 |  |
| Gives user the option to enter values or read file | 10 |  |
| Loops when completed to ask if user wants to go again | 5 |  |
| Pop works | 15 |  |
| Push works | 15 |  |
| Peek works | 15 |  |
| Print works | 10 |  |
| Handles errors from these functions | 5 |  |
| Commented | 5 |  |
| Late | -5 points per day late |  |
| Total: | 100 |  |