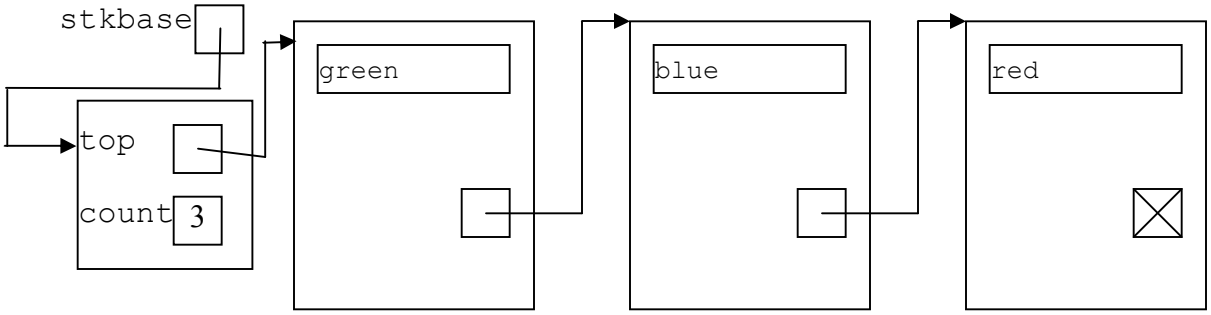
University of Massachusetts Dartmouth
Department of Electrical and Computer Engineering

ECE 161 — Submit name: dynamstk.cpp
Project 6 (worth 200 points) — Due: see http://ece161.viall.org

Design and implement a program which allows a user to “push” and “pop” a color onto or off of a stack. If there is no memory available, your program should return a "stack full" type error message. If the user tries to "pop" and item off the stack when it is empty, a "stack empty" type error message should be displayed. You must use functions for push, pop, and print (the stack). It is suggested you use a function for use interaction as well. The color field may be defined as a fixed length field (perhaps 20 characters)

Pictorially, if the colors "red", "blue", and "green" have been pushed onto the stack, the stack should look as follows:




The valid commands are "push", "pop", and "exit". Commands may be entered in any combination of upper/lower case (i.e. pUsH is a valid command). If you wish, you may (in addition) parse partial commands (i.e. "pu" = "push").

Example (user input underlined)

```
Welcome to the Stack program
Program commands:
  exit - exits the program
  push - pushes color
  pop - pops color
Command: push
  Color: red
  Stack= red
Command: pop
 Popped= red
  Stack= Empty
Command: pop
 Popped= *ERROR* Stack Empty
  Stack= Empty
Command: push
  Color: magenta
  Stack= magenta
Command: push
  Color: cyan
  Stack= cyan
         magenta
Command: push
  Color: amber
  Stack= amber
         cyan
         magenta
```

```
Command: lavender
   Item: *ERROR* Invalid Cmd
  Stack= amber
         cyan
         magenta
Command: push
  Color: gold
  Stack= gold
         amber
         cyan
         magenta
Command: pop
 Popped= gold
  Stack= amber
         cyan
         magenta
Command: pop
 Popped= amber
  Stack= cyan
         magenta
Command: pop
Popped= cyan
  Stack= magenta
Command: pop
Popped= magenta
  Stack= Empty
Command: pop
Popped= *ERROR* Stack Empty
  Stack= Empty
Command: exit
```