3) (10 pts) ALG (Stacks)

A stack of ***positive integers*** is implemented using the struct shown below. Using this implementation of the stack write the ***push*** and ***peek*** functions. ***Assume that when a struct stack is empty, its top variable is equal to -1.***

```
#define MAX 12

struct stack{
   int top;   /* indicates index of top */
   int nodes[MAX] ;
};

// Attempts to push value onto the stack pointed to by s.
// If the stack is full 0 is returned and no action is taken.
// Otherwise, value is pushed onto the stack and 1 is returned.
int push(struct stack* s, int value){

    if(s->top >= MAX-1)
        return 0;

    s->nodes[s->top + 1] = value;
    s->top++;
    return 1;
}
```

Grading: 2 pts for full case, 2 pts for insertion, 1 pt update top, 1 pt return

```
// Returns the value at the top of the stack. If the stack is
// empty, -1 is returned.
int peek(struct stack* s){

    if(s-> top == -1)
       return -1;

    return s->nodes[s->top];
}
```

Grading: 2pt for empty case, 2 pts for return in regular case.