stack-using-array.c

```
//write a program to implement stack using array.

#include <stdio.h>

#define max 10
int stack[10], top = -1;

void push(int data){
   stack[++top] = data;
}

int pop(){
   return stack[top--];
}

void display(){
   int i = 0;
   while(i <= top){
      printf("%d",stack[i]);
      i++;
      if(i > top){
         break;
      }
      printf(" -> ");
   }
   printf("\n");
}

int isEmpty(){
   return top == -1;
}

int isFull(){
   return top == max-1;
}

int len(){
   return top+1;
}

void main(){
   if(isEmpty()){
      printf("The stack is empty.\n");
   }else{
      printf("The stack is not empty.\n");
   }
   printf("the length of the stack is %d\n",len());
   push(10);
   printf("the length of the stack is %d\n",len());
   push(102);
   push(15);
   push(13);
   push(12);
   display();
   printf("the length of the stack is %d\n",len());
```

```
    if(isFull()){
        printf("The stack is Full.\n");
    }else{
        printf("The stack is not Full.\n");
    }
    printf("Removed %d\n",pop());
    printf("Removed %d\n",pop());
    printf("Removed %d\n",pop());
    display();
}
```

OUTPUT

```
PS S:\WorkSpace\CollegeWork\DataStructure\Temp> gcc .\stack-using-array.c
PS S:\WorkSpace\CollegeWork\DataStructure\Temp> ./a
The stack is empty.
the length of the stack is 0
the length of the stack is 1
10 -> 102 -> 15 -> 13 -> 12
the length of the stack is 5
The stack is not Full.
Removed 12
Removed 13
Removed 15
10 -> 102
PS S:\WorkSpace\CollegeWork\DataStructure\Temp>
```