

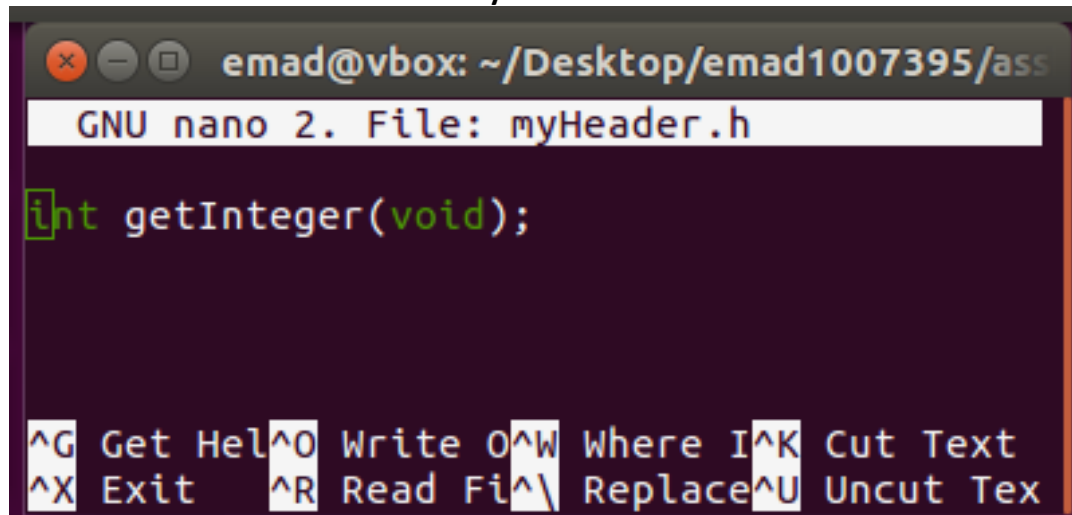
Q1

Create a function in (.c) file and create its header in (.h) file, in a new separate (.c) file create your main program, then use separate-compilation to compile the program (i.e. create a MakeFile).

- Function: ask the user for an integer and check for errors entered.
- Main Program: compute factorial and print the results.

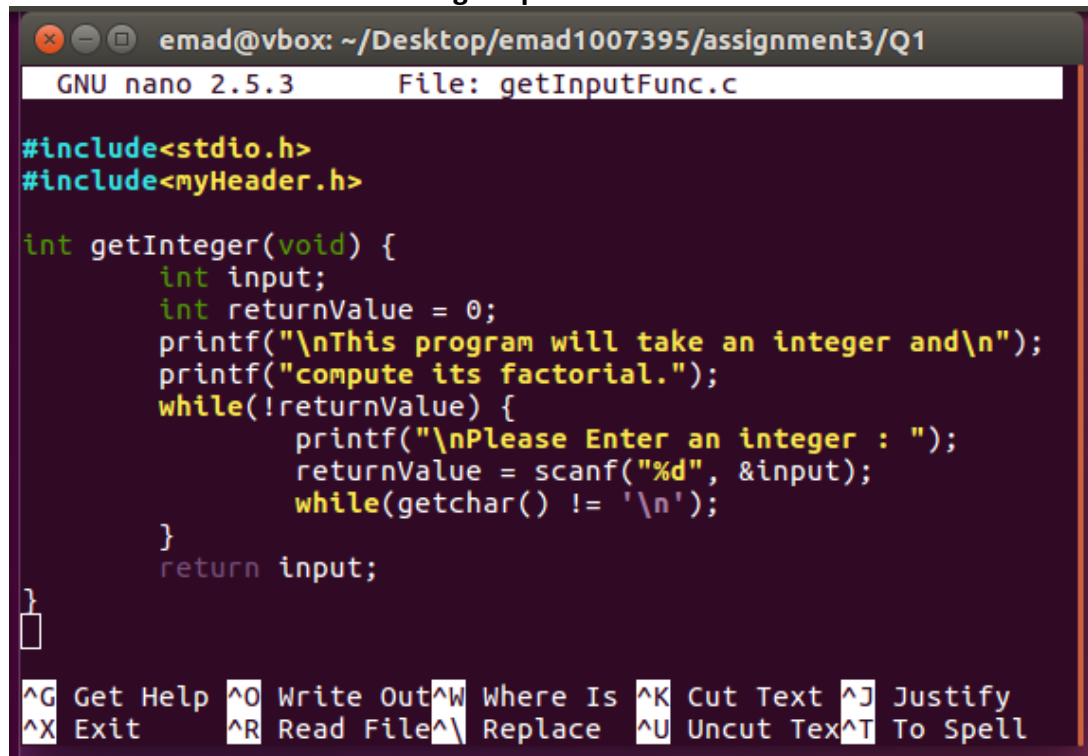
Code

myHeader.h



```
int getInteger(void);
```

getInputFunc.c



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

int getInteger(void) {
    int input;
    int returnValue = 0;
    printf("\nThis program will take an integer and\n");
    printf("compute its factorial.");
    while(!returnValue) {
        printf("\nPlease Enter an integer : ");
        returnValue = scanf("%d", &input);
        while(getchar() != '\n');
    }
    return input;
}
```

integerFactorial.c

```
emad@vbox: ~/Desktop/emad1007395/assignment3/Q1
GNU nano 2.5.3 File: integerFactorial.c Modified

#include<stdio.h>
#include<myHeader.h>

int main() {
    int a = getInteger();
    int result = 1;
    for(int i=1; i <= a; i++){
        result = result * i;
    }
    printf("\nThe factorial of [ %d ] is : %d\n\n", a, result);
    return 0;
}

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify
^X Exit ^R Read File ^\ Replace ^U Uncut Tex ^T To Spell
```

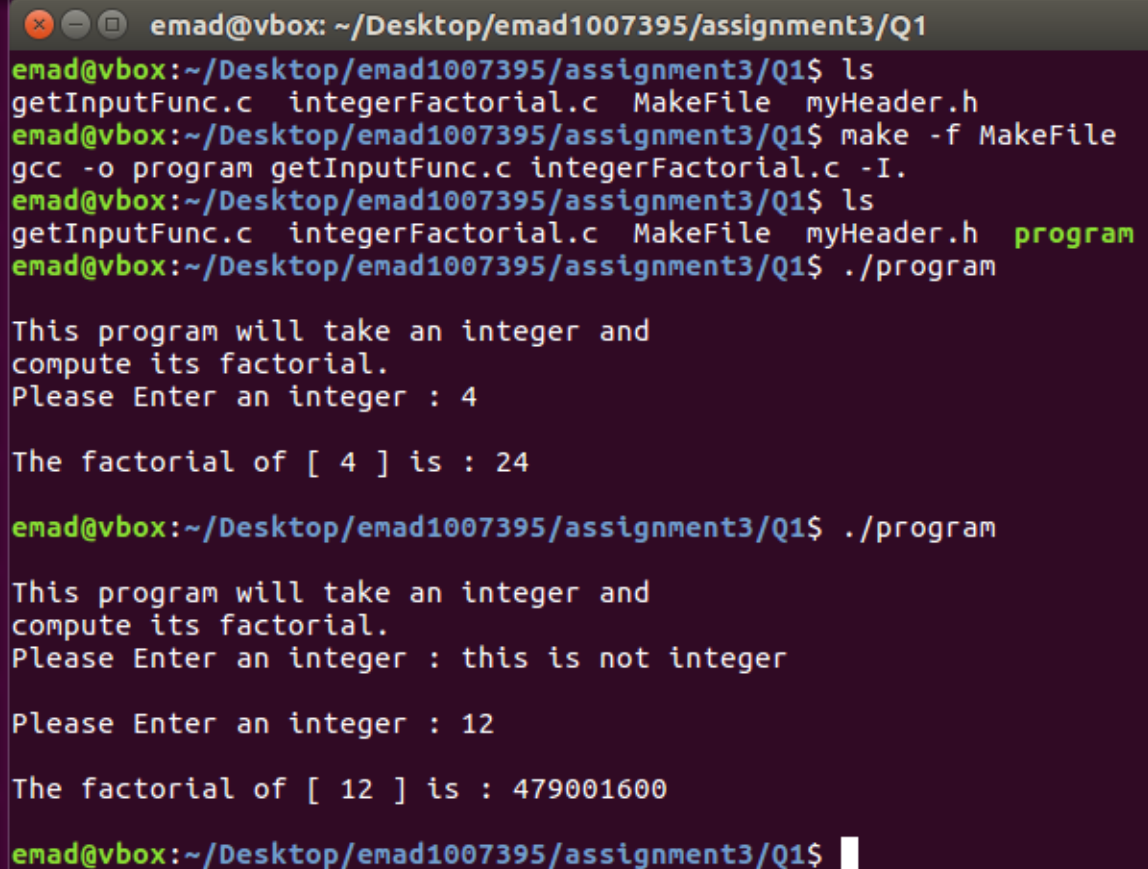
MakeFile

```
emad@vbox: ~/Desktop/emad1007395/assignment3/Q1
GNU nano 2.5.3 File: MakeFile

program: getInputFunc.c integerFactorial.c
gcc -o program getInputFunc.c integerFactorial.c -I.

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify
^X Exit ^R Read File ^\ Replace ^U Uncut Tex ^T To Spell
```

Screenshot



```
emad@vbox: ~/Desktop/emad1007395/assignment3/Q1
emad@vbox:~/Desktop/emad1007395/assignment3/Q1$ ls
getInputFunc.c  integerFactorial.c  MakeFile  myHeader.h
emad@vbox:~/Desktop/emad1007395/assignment3/Q1$ make -f MakeFile
gcc -o program getInputFunc.c integerFactorial.c -I.
emad@vbox:~/Desktop/emad1007395/assignment3/Q1$ ls
getInputFunc.c  integerFactorial.c  MakeFile  myHeader.h  program
emad@vbox:~/Desktop/emad1007395/assignment3/Q1$ ./program

This program will take an integer and
compute its factorial.
Please Enter an integer : 4

The factorial of [ 4 ] is : 24

emad@vbox:~/Desktop/emad1007395/assignment3/Q1$ ./program

This program will take an integer and
compute its factorial.
Please Enter an integer : this is not integer

Please Enter an integer : 12

The factorial of [ 12 ] is : 479001600

emad@vbox:~/Desktop/emad1007395/assignment3/Q1$
```