

1. Source code hàm factorial.c và readline.c

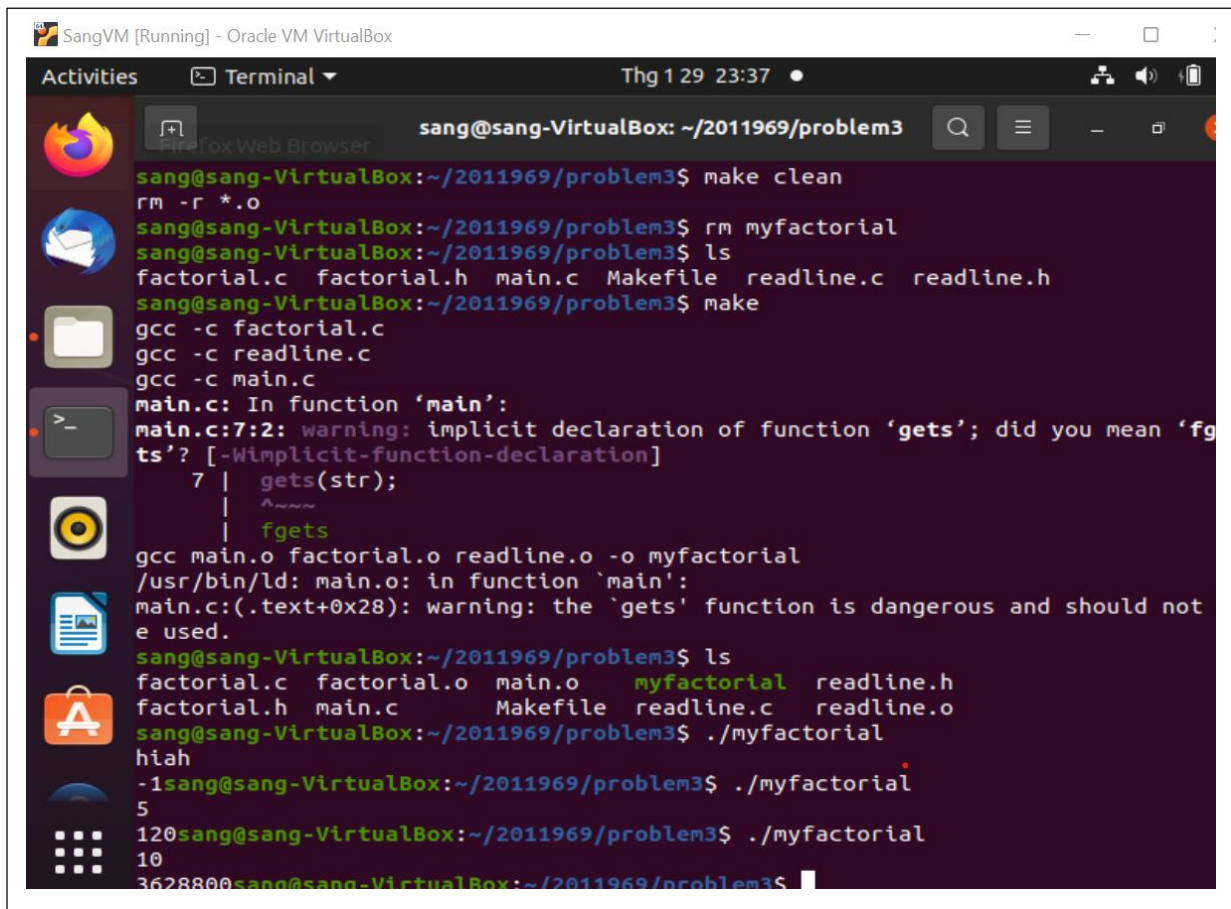
```
sang@sang-VirtualBox:~/2011969/problem3$ cat factorial.c
#include"factorial.h"
int factorial(const int aNumber){
    if(aNumber<0){
        printf("Invalid input number");
        return 0;
    }if(aNumber==0)return 1;
    return aNumber*factorial(aNumber-1);
}
sang@sang-VirtualBox:~/2011969/problem3$ cat readline.c
#include"readline.h"
int read_line(char *str){
    int j;
    j = strlen(str);
    while(j>0){
        if(str[j-1]<'0' || str[j-1]>'9')return 0;
        j--;
    }
    return 1;
}
sang@sang-VirtualBox:~/2011969/problem3$ cat main.c
```

2. Source code hàm main.c và Makefile

```
sang@sang-VirtualBox:~/2011969/problem3$ cat main.c
#include<stdio.h>
#include"readline.h"
#include"factorial.h"

int main(){
    char str[50];
    gets(str);
    if(read_line(str)==1){
        printf("%d",factorial(atoi(str)));
    }else printf("-1");
}
sang@sang-VirtualBox:~/2011969/problem3$ cat Makefile
all: main.o factorial.o readline.o
    gcc main.o factorial.o readline.o -o myfactorial
main.o: factorial.h readline.h factorial.c readline.c
    gcc -c factorial.c
    gcc -c readline.c
    gcc -c main.c
clean:
    rm -r *.o
```

3. Quá trình tạo makefile và list các file, kết quả chạy thử chương trình.



```
SangVM [Running] - Oracle VM VirtualBox
Thg 1 29 23:37
sang@sang-VirtualBox: ~/2011969/problem3
sang@sang-VirtualBox:~/2011969/problem3$ make clean
rm -r *.o
sang@sang-VirtualBox:~/2011969/problem3$ rm myfactorial
sang@sang-VirtualBox:~/2011969/problem3$ ls
factorial.c factorial.h main.c Makefile readline.c readline.h
sang@sang-VirtualBox:~/2011969/problem3$ make
gcc -c factorial.c
gcc -c readline.c
gcc -c main.c
main.c: In function 'main':
main.c:7:2: warning: implicit declaration of function 'gets'; did you mean 'fgets'? [-Wimplicit-function-declaration]
    7 |     gets(str);
      |     ^~~~~
      |     fgets
gcc main.o factorial.o readline.o -o myfactorial
/usr/bin/ld: main.o: in function 'main':
main.c:(.text+0x28): warning: the 'gets' function is dangerous and should not be used.
sang@sang-VirtualBox:~/2011969/problem3$ ls
factorial.c factorial.o main.o myfactorial readline.h
factorial.h main.c Makefile readline.c readline.o
sang@sang-VirtualBox:~/2011969/problem3$ ./myfactorial
hiah
-1sang@sang-VirtualBox:~/2011969/problem3$ ./myfactorial
5
120sang@sang-VirtualBox:~/2011969/problem3$ ./myfactorial
10
3628800sang@sang-VirtualBox:~/2011969/problem3$
```