(1) Task 1

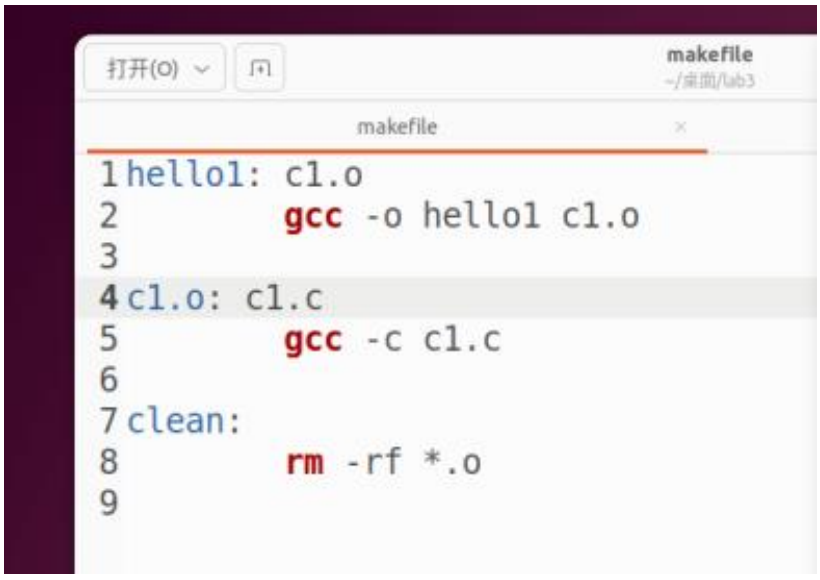
(1) Write a C program that uses standard I/O libraries to display the contents of text files. The program is compiled and linked by the make tool, which requires the generation of the.o file first, and then the generation of the executable file, and the function of deleting the intermediate file (.o) in the makefile file.

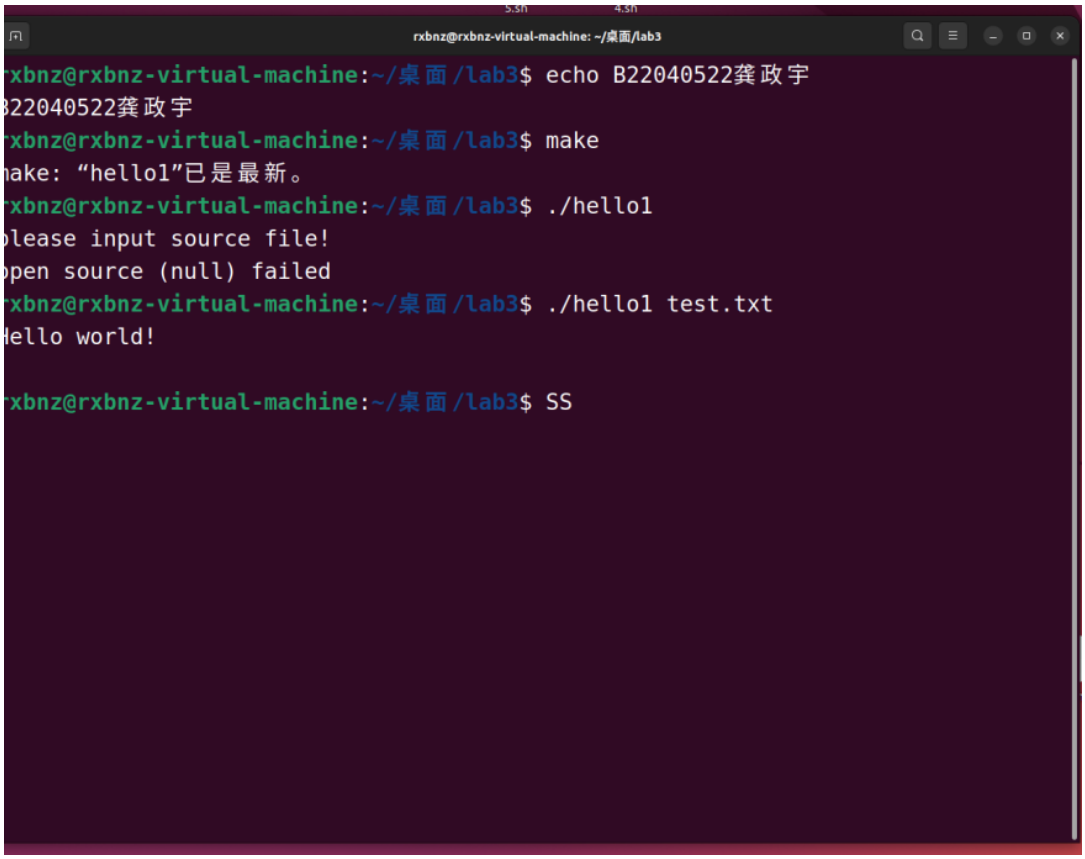
```
#include <stdio.h>
int main(int argc, char* argv[])
{
    char buf[1024] = { 0 };
    FILE* fp = fopen(argv[1],"r");
    if (argc < 2)
    {
        printf("please input source file!\n");
    }
    if (fp == NULL)
    {
        printf("open source %s failed\n", argv[1]);
        return -1;
    }
    while (fgets(buf,1024, fp))
    {
        printf("%s\n", buf);
    }
    return 0;
}
```

Make sure your filename is c1.c

We can use the following makefile.

```
hello1:c1.o
    gcc -o hello1 c1.o
c1.o:c1.c
    gcc -c c1.c
clean:
    rm -rf *.o
```




5.sh
4.sh
rxbnz@rxbnz-virtual-machine: ~/桌面/lab3
rxbnz@rxbnz-virtual-machine:~/桌面/lab3$ echo B22040522龚政宇
B22040522龚政宇
rxbnz@rxbnz-virtual-machine:~/桌面/lab3$ make
make: “hello1”已是最新。
rxbnz@rxbnz-virtual-machine:~/桌面/lab3$ ./hello1
Please input source file!
Open source (null) failed
rxbnz@rxbnz-virtual-machine:~/桌面/lab3$ ./hello1 test.txt
Hello world!
rxbnz@rxbnz-virtual-machine:~/桌面/lab3$ SS

(2) Task 2

(2) Write a C program that displays all the file names in the current directory. The program is compiled and linked by the make tool, which requires the generation of the.o file first, and then the generation of the executable file, and the function of deleting the intermediate file (.o) in the makefile file.

include <stdio.h>

include <dirent.h>

include <sys/types.h>

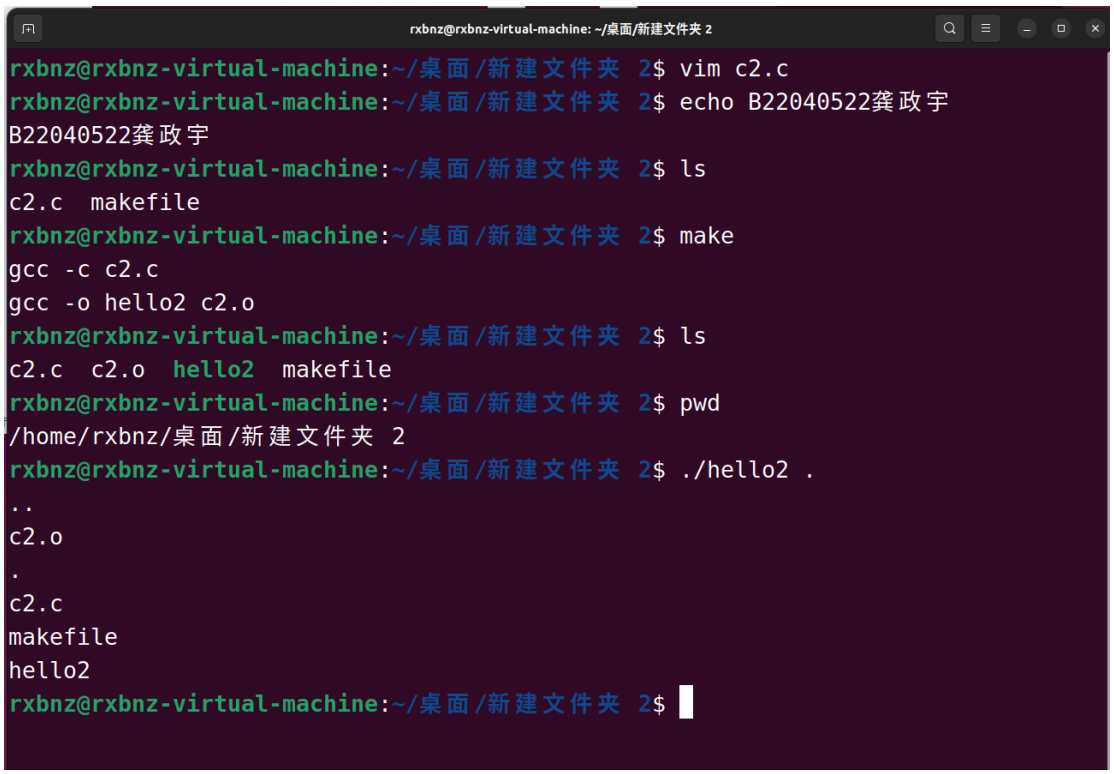
```
int  main(int argc, char* argv[])
{
    DIR* dirp;
    struct dirent* direntp;
    if ((dirp = opendir(argv[1])) == NULL) {
        printf("error\n");
     //   exit(1);
    }
    while ((direntp = readdir(dirp)) != NULL)
        printf("%s\n", direntp->d_name);
    closedir(dirp);
    // exit(0);
}
```

Make sure your filename is c2.c

We can use the following makefile.

```
hello2:c2.o
    gcc -o hello1 c2.o
c2.o:c2.c
    gcc -c c2.c
clean:
    rm -rf *.o
```

```
1 hello2:c2.o
2         gcc -o hello2 c2.o
3 c2.o:c2.c
4         gcc -c c2.c
5 clean:
6         rm -rf *.o
```


rxbnz@rxbnz-virtual-machine: ~/桌面/新建文件夹 2
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 2$ vim c2.c
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 2$ echo B22040522龚政宇
B22040522龚政宇
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 2$ ls
c2.c makefile
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 2$ make
gcc -c c2.c
gcc -o hello2 c2.o
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 2$ ls
c2.c c2.o hello2 makefile
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 2$ pwd
/home/rxbnz/桌面/新建文件夹 2
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 2$ ./hello2 .
..
c2.o
.
c2.c
makefile
hello2
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 2$

(3) Task 3

(3) Write a C program that changes the working directory of the current process. The program is compiled and linked by the make tool, which requires the generation of the.o file first, and then the generation of the executable file, and the function of deleting the intermediate file (.o) in the makefile file.

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
int main(){
    char buf[1024] = {0};
```

```
    char buf2[1024]={0};
    getcwd(buf, 1024);
    printf("%s\n", buf);
    if(chdir("/home")<0){
        printf("error\n");
    }
    else
    {
        printf("success\n");
    }
    getcwd(buf2,1024);
    printf("%s\n",buf2);
    return 0;
}
```

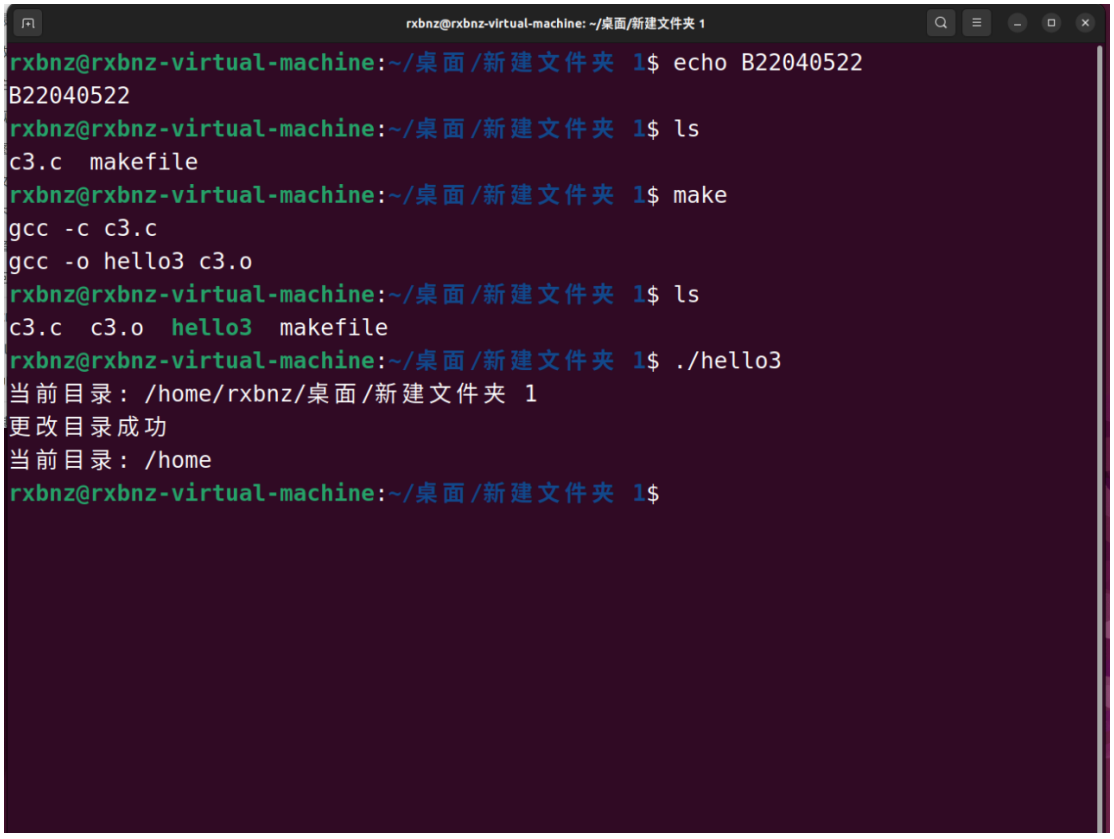
Make sure your filename is c3.c

We can use the following makefile.

```
hello3:c3.o
    gcc -o hello1 c3.o
c3.o:c3.c
    gcc -c c3.c
clean:
    rm -rf *.o
```

打开(O)

```
1 hello3:c3.o
2         gcc -o hello3 c3.o
3 c3.o:c3.c
4         gcc -c c3.c
5 clean:
6         rm -rf *.o
```


rxbnz@rxbnz-virtual-machine: ~/桌面/新建文件夹 1
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 1$ echo B22040522
B22040522
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 1$ ls
c3.c makefile
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 1$ make
gcc -c c3.c
gcc -o hello3 c3.o
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 1$ ls
c3.c c3.o hello3 makefile
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 1$ ./hello3
当前目录：/home/rxbnz/桌面/新建文件夹 1
更改目录成功
当前目录：/home
rxbnz@rxbnz-virtual-machine:~/桌面/新建文件夹 1$