(1) Task 1

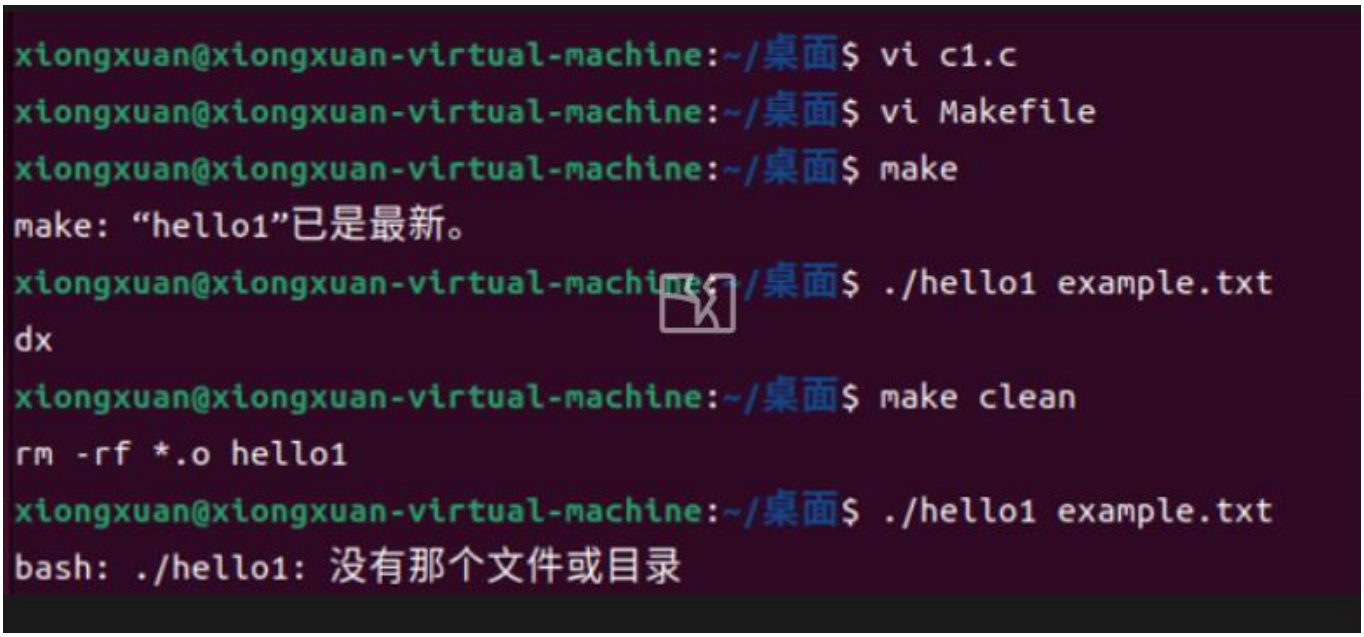
(1) Write a C program that uses standard I/O libraries to display the contents of text files. The program is compiled and linked by the make tool, which requires the generation of the.o file first, and then the generation of the executable file, and the function of deleting the intermediate file (.o)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


xiongxuan@xiongxuan-virtual-machine:~/桌面$ vi c1.c
xiongxuan@xiongxuan-virtual-machine:~/桌面$ vi Makefile
xiongxuan@xiongxuan-virtual-machine:~/桌面$ make
make: “hello1”已是最新。
xiongxuan@xiongxuan-virtual-machine:~/桌面$ ./hello1 example.txt
dx
xiongxuan@xiongxuan-virtual-machine:~/桌面$ make clean
rm -rf *.o hello1
xiongxuan@xiongxuan-virtual-machine:~/桌面$ ./hello1 example.txt
bash: ./hello1: 没有那个文件或目录

(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>

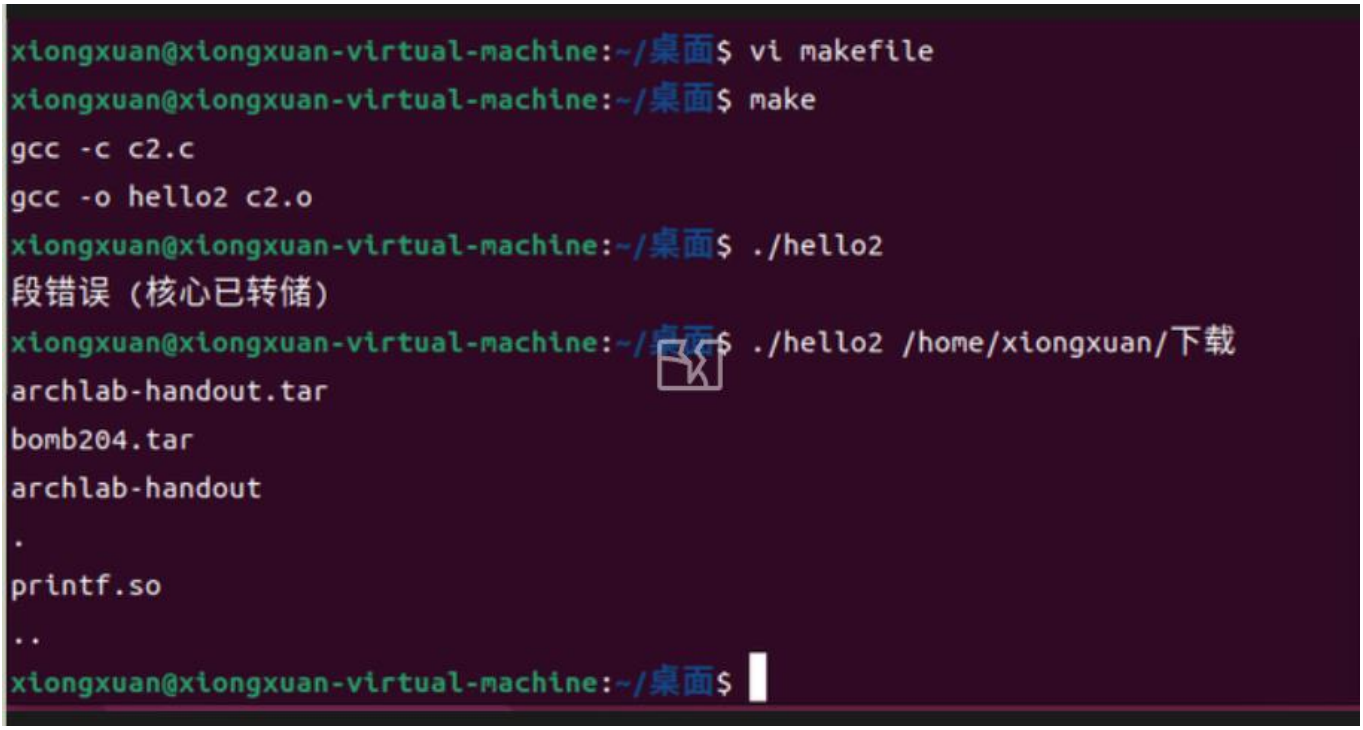
include <sys/types.h>

```
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
```



(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
```