

Lab 2 Prabhat Namdharani 190905442

Sample 1

```
#include <stdio.h>
#include <stdlib.h>
#include <sys/stat.h>
#include <fcntl.h>
#include <stdlib.h>
#include <unistd.h>
#include <dirent.h>

void printdir(char *dir, int depth){
    DIR *dp;
    struct dirent *entry;
    if((dp=opendir(dir))==NULL){
        fprintf(stderr,"cannot open director %s \n",dir);
        return;
    }
    while((entry=readdir(dp))!=NULL){
        printf("%s\n",entry->d_name);
    }
    closedir(dp);
}

int main(){
    printf("Enter directory to check");
    printdir("/home/Student/Desktop",2);
}
```

190905442 OS

Student@dblab-hp-28:~/Desktop/190905442 OS\$ cd "/home/Student/Desktop/190905442 OS"

Student@dblab-hp-28:~/Desktop/190905442 OS\$./"L2 Sample 1"

Content inside /home/Student/Desktop is

Old Firefox Data

..

190905442 OS

Check

190905246_CD_L_S1.pdf

190905246_CD_L_S2.pdf

190905442_CD

..

Student@dblab-hp-28:~/Desktop/190905442 OS\$

Compiled successfully!

Ln 23, Col 54 Spaces: 4

Sample 2

```
#include <stdio.h>

#include <unistd.h>

#include <dirent.h>

#include <string.h>

#include <sys/stat.h>

#include <stdlib.h>


void printdir(char *dir, int depth)
{
    DIR *dp;
    struct dirent* entry;
    struct stat statbuf;
    if((dp=opendir(dir))==NULL)
    {
        fprintf(stderr, "cannot open directory: %s\n",dir);
        return;
    }
    chdir(dir);
    while((entry=readdir(dp)) != NULL)
    {
        lstat(entry->d_name,&statbuf);
        if(S_ISDIR(statbuf.st_mode))
        {
            if(strcmp(".",entry->d_name)==0 || strcmp("..",entry->d_name)==0)
                continue;
            printf("%*s%s\n",depth,"",entry->d_name);
            printdir(entry->d_name,depth+4);
        }
    }
}
```

```

    }

    else

        printf("%s%s\n",depth,"",entry->d_name);

}

chdir("../");

closedir(dp);

}

int main()

{

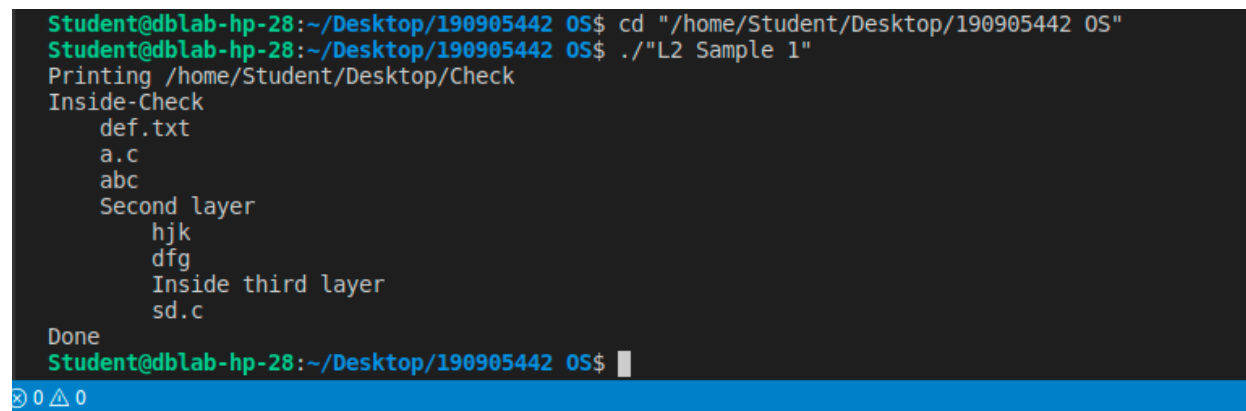
    printf("Printing /home/Student/Desktop\n");

    printdir("/home/Student/Desktop",0);

    printf("Done\n");

}

```



```

Student@dblab-hp-28:~/Desktop/190905442 OS$ cd "/home/Student/Desktop/190905442 OS"
Student@dblab-hp-28:~/Desktop/190905442 OS$ ./"L2 Sample 1"
Printing /home/Student/Desktop/Check
Inside-Check
    def.txt
    a.c
    abc
    Second layer
        hjk
        dfg
    Inside third layer
        sd.c
Done
Student@dblab-hp-28:~/Desktop/190905442 OS$

```

Question 1

```
#include <unistd.h>
```

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

```

#include <sys/stat.h>
#include <sys/types.h>
#include <dirent.h>

int main()
{
    DIR * dp;

    struct dirent * entry;

    struct stat statbuf;

    if(!(dp = opendir(".")))
    {
        printf("Cannot open directory \n");
        return 0;
    }

    chdir(".");

    while(entry = readdir(dp))
    {
        lstat(entry->d_name, &statbuf);

        if(!S_ISDIR(statbuf.st_mode))
        {
            printf("%s \t \t", entry->d_name);

            printf((S_ISDIR(statbuf.st_mode)) ? "d" : "-");

            printf((statbuf.st_mode & S_IRUSR) ? "r" : "-");

            printf((statbuf.st_mode & S_IWUSR) ? "w" : "-");

            printf((statbuf.st_mode & S_IXUSR) ? "x" : "-");

            printf((statbuf.st_mode & S_IRGRP) ? "r" : "-");

            printf((statbuf.st_mode & S_IWGRP) ? "w" : "-");

            printf((statbuf.st_mode & S_IXGRP) ? "x" : "-");

```

```

printf((statbuf.st_mode & S_IROTH) ? "r" : "-");
printf((statbuf.st_mode & S_IWOTH) ? "w" : "-");
printf((statbuf.st_mode & S_IXOTH) ? "x" : "-");
printf("\n");
}
}
}

```

A terminal window showing a directory listing. The prompt is 'Student@dblab-hp-28:~/Desktop/190905442 OS\$./"L2Q1"'. The output shows a directory listing with permissions: L2Q1 (-rwxrwxr-x), L2 Sample 1.c (-rw-rw-r--), L2 Sample.c (-rw-rw-r--), L2 Sample (-rwxrwxr-x), L2 Sample 1 (-rwxrwxr-x), and L2Q1.c (-rw-rw-r--). Below this, the prompt is 'Student@dblab-hp-28:~/Desktop/190905442 OS\$ ls -a', and the output shows: '. .. L2Q1 L2Q1.c L2 Sample L2 Sample 1 L2 Sample 1.c L2 Sample.c test'.

Question 2

```

#include <stdio.h>

#include <unistd.h>

#include <dirent.h>

#include <string.h>

#include <sys/stat.h>

#include <stdlib.h>

void printdir(char *dir, int depth)
{
    DIR *dp;
    struct dirent* entry;
    struct stat statbuf;

```

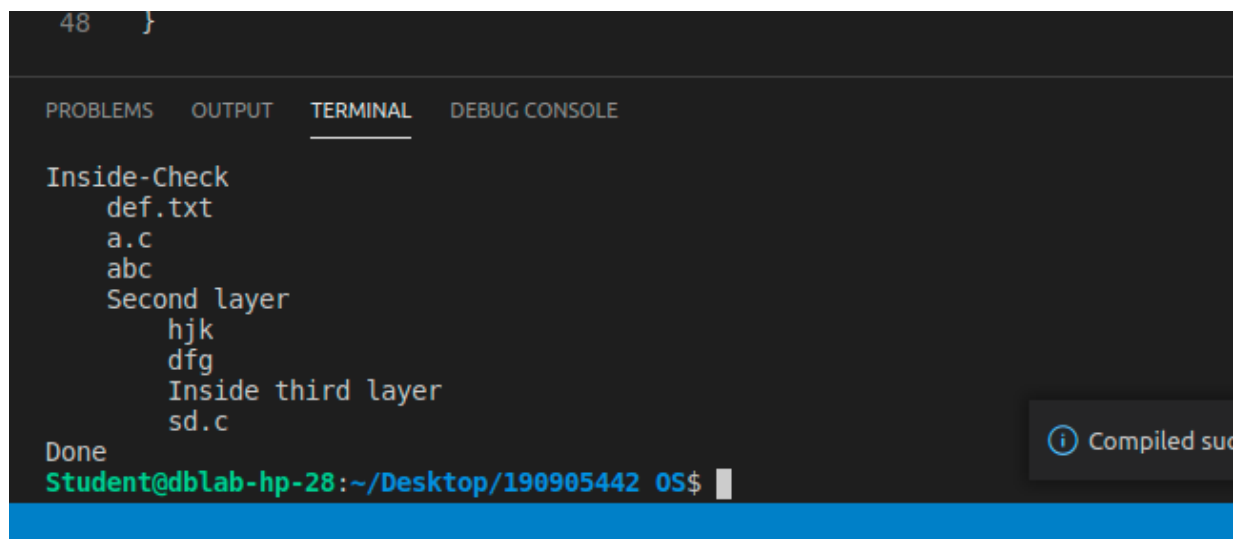
```

if((dp=opendir(dir))==NULL)
{
    fprintf(stderr, "cannot open directory: %s\n",dir);
    return;
}
chdir(dir);
while((entry=readdir(dp)) != NULL)
{
    lstat(entry->d_name,&statbuf);
    if(S_ISDIR(statbuf.st_mode))
    {
        if(strcmp(".",entry->d_name)==0 || strcmp("..",entry->d_name)==0)
            continue;
        printf("%*s%s\n",depth,"",entry->d_name);
        printdir(entry->d_name,depth+4);
    }
    else
        printf("%*s%s\n",depth,"",entry->d_name);

}
chdir("..");
closedir(dp);
}

```

```
int main()
{
    char name[100];
    printf("Enter directory to print\n");
    scanf("%s",name);
    printdir(name,0);
    printf("Done\n");
}
```

A screenshot of a terminal window with a dark background. At the top, the text '48 }' is visible. Below it, a tabbed interface shows 'PROBLEMS', 'OUTPUT', 'TERMINAL' (which is selected and underlined), and 'DEBUG CONSOLE'. The 'TERMINAL' tab displays the output of a program: 'Inside-Check', 'def.txt', 'a.c', 'abc', 'Second layer', 'hjk', 'dfg', 'Inside third layer', and 'sd.c'. At the bottom of the terminal output, it says 'Done'. A status bar at the very bottom shows 'Student@dblab-hp-28:~/Desktop/190905442 OS\$' with a cursor. On the right side of the terminal, there is a small grey box with an information icon and the text 'Compiled suc'.

Question 3

dpkg -l

OR

apt list


```
C L2Q2.c > main()
28     printf("%s\n",depth,"",entry->d_name);
29     printf(entry->d_name,depth+4);

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE 2: C/C++ Compile Run + - X

zsh-doc/xenial-updates,xenial-updates,xenial-security,xenial-security 5.1.1-1ubuntu2.3 all
zsh-lovers/xenial,xenial 0.8.3-0ubuntu2 all
zsh-static/xenial-updates,xenial-security 5.1.1-1ubuntu2.3 amd64
zsh-syntax-highlighting/xenial,xenial 0.4.1-1 all
zshdc/xenial,xenial 0.09+git20150123-1 all
zsnes/xenial 1.510+bz2-8build1 i386
zsnes-dbg/xenial 1.510+bz2-8build1 i386
zssh/xenial 1.5c.debian.1-3.2 amd64
zstd/xenial-updates 1.3.1+dfsg-1-ubuntu0.16.04.1 amd64
zsync/xenial 0.6.2-1ubuntu1 amd64
ztclocalagent/xenial 5.0.0.30-0ubuntu1 amd64
ztex-bmp/xenial 20120314-2 amd64
zulucrypt-cli/xenial 4.7.7-3 amd64
zulucrypt-gui/xenial 4.7.7-3 amd64
zulumount-cli/xenial 4.7.7-3 amd64
zulumount-gui/xenial 4.7.7-3 amd64
zulusafe-cli/xenial 4.7.7-3 amd64
zurl/xenial 1.5.1-1build1 amd64
zutils/xenial 1.4-1 amd64
zutils-dbg/xenial 1.4-1 amd64
zvbi/xenial 0.2.35-10 amd64
zygrib/xenial 7.0.0-4build1 amd64
zygrib-maps/xenial,xenial 7.0.0-4build1 all
zynadd/xenial 1+git.20100609+dfsg0-2 amd64
zynaddsubfx/xenial 2.5.2-2ubuntu1 amd64
zynaddsubfx-data/xenial,xenial 2.5.2-2ubuntu1 all
zynaddsubfx-dbg/xenial 2.5.2-2ubuntu1 amd64
zynaddsubfx-dssi/xenial 2.5.2-2ubuntu1 amd64
zyne/xenial,xenial 0.1.2-2 all
zynjacku/xenial 6-4build1 amd64
zypper/xenial-updates 1.12.4-1build0.1 amd64
zypper-common/xenial-updates,xenial-updates 1.12.4-1build0.1 all
zypper-doc/xenial-updates,xenial-updates 1.12.4-1build0.1 all
zziplib-bin/xenial-updates,xenial-security 0.13.62-3ubuntu0.16.04.2 amd64
Student@dblab-hp-28:~/Desktop/190905442 OS$
```

Question 4

rpm -qa | wc -l

```
190905442 CD
.
Student@dblab-hp-28:~/Desktop/190905442 OS$ rpm -qa | wc -l
0
Student@dblab-hp-28:~/Desktop/190905442 OS$
```