

PRAKTIKUM SISTEM OPERASI
MODUL 10: SIMULASI COMMAND (PERINTAH)



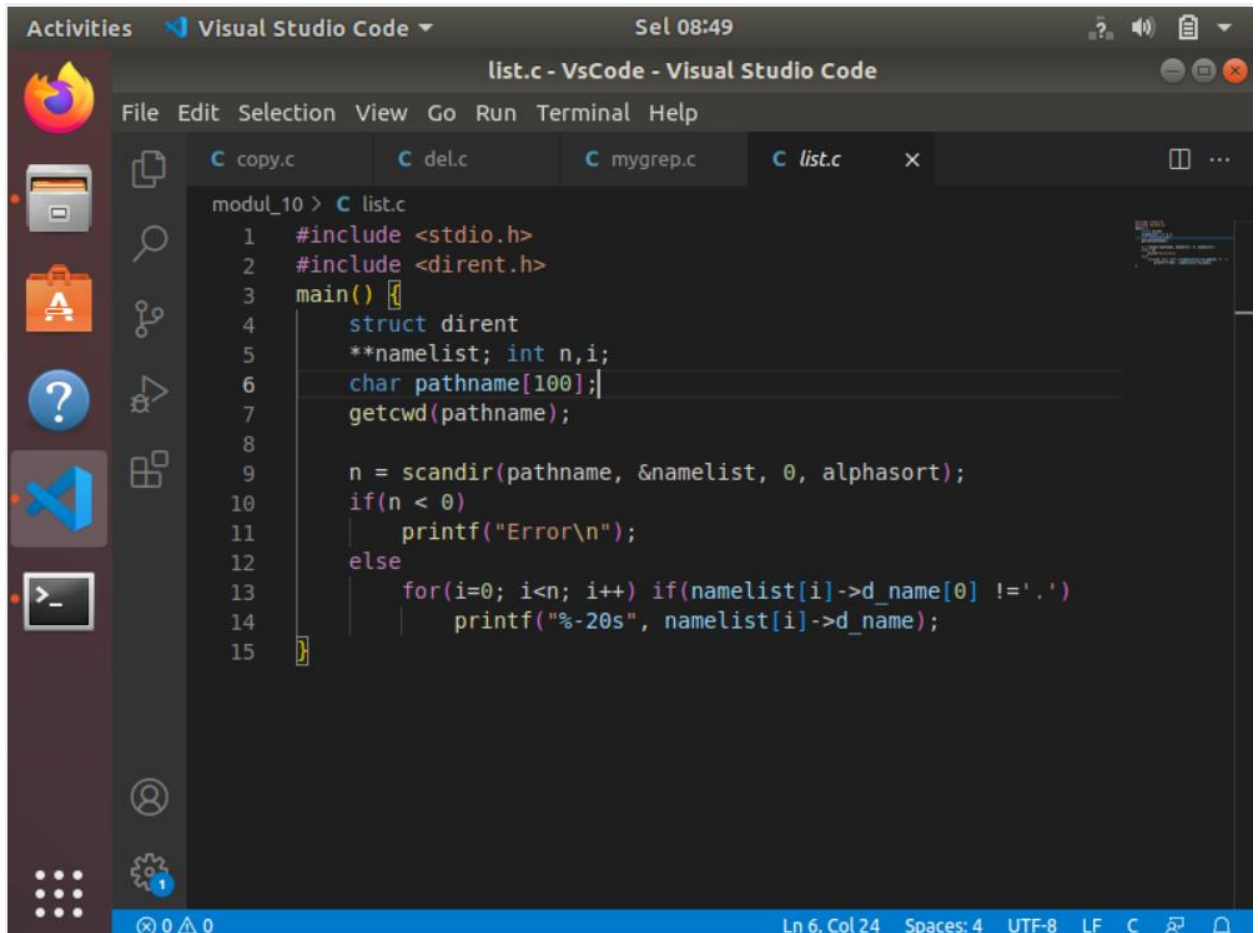
Penyusun:

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Program Studi : Informatika

PROGRAM STUDI TEKNIK INFORMATIKA
FAKULTAS KOMUNIKASI DAN INFORMATIKA
UNIVERSITAS MUHAMMADIYAH SURAKARTA 2022

1. Program untuk mensimulasi perintah 'ls'

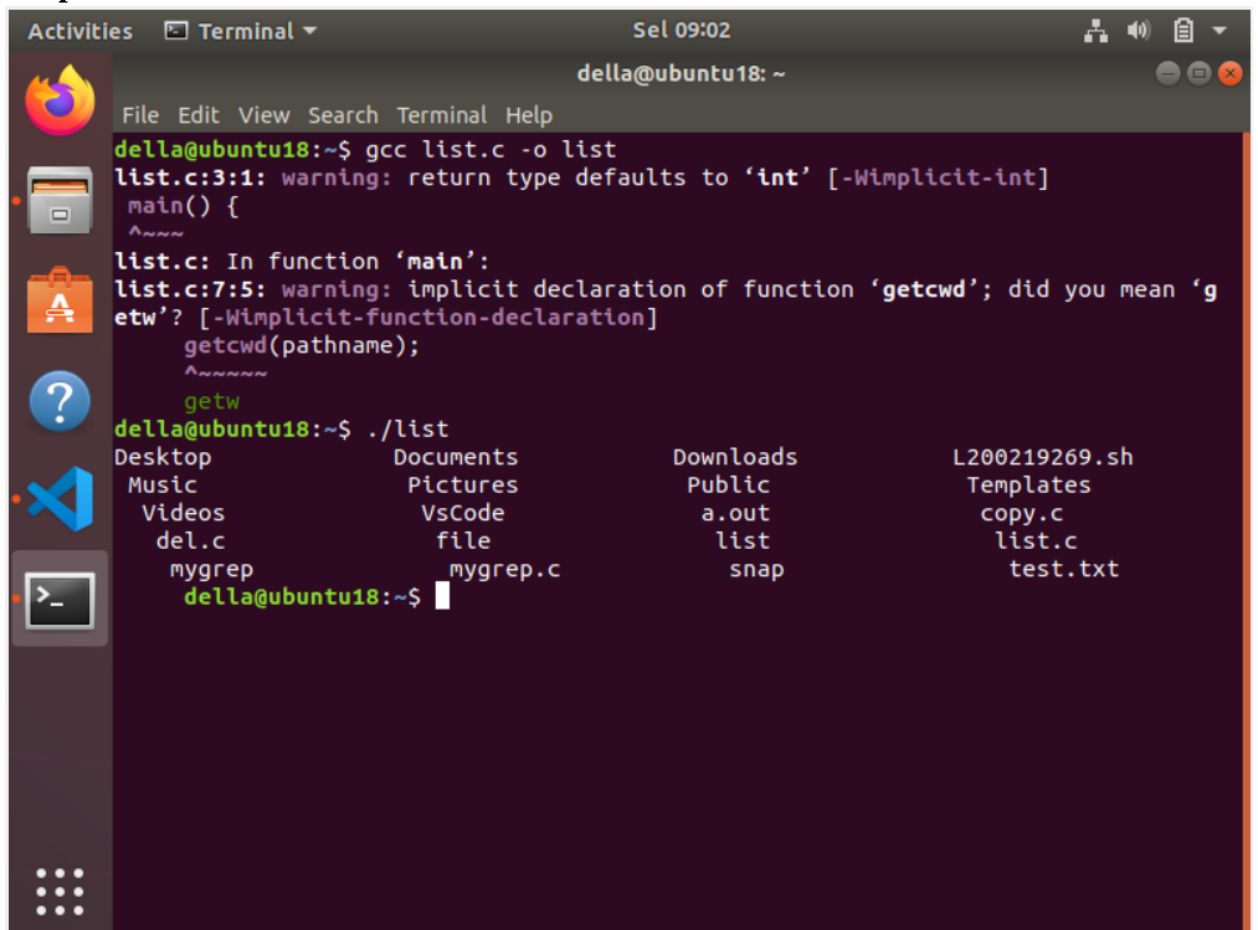
Kode program :



The screenshot shows the Visual Studio Code editor with the file 'list.c' open. The code is as follows:

```
modul_10 > C list.c
1  #include <stdio.h>
2  #include <dirent.h>
3  main() {
4      struct dirent
5      **namelist; int n,i;
6      char pathname[100];
7      getcwd(pathname);
8
9      n = scandir(pathname, &namelist, 0, alphasort);
10     if(n < 0)
11         printf("Error\n");
12     else
13         for(i=0; i<n; i++) if(namelist[i]->d_name[0] != '.')
14             printf("%-20s", namelist[i]->d_name);
15 }
```

Output :

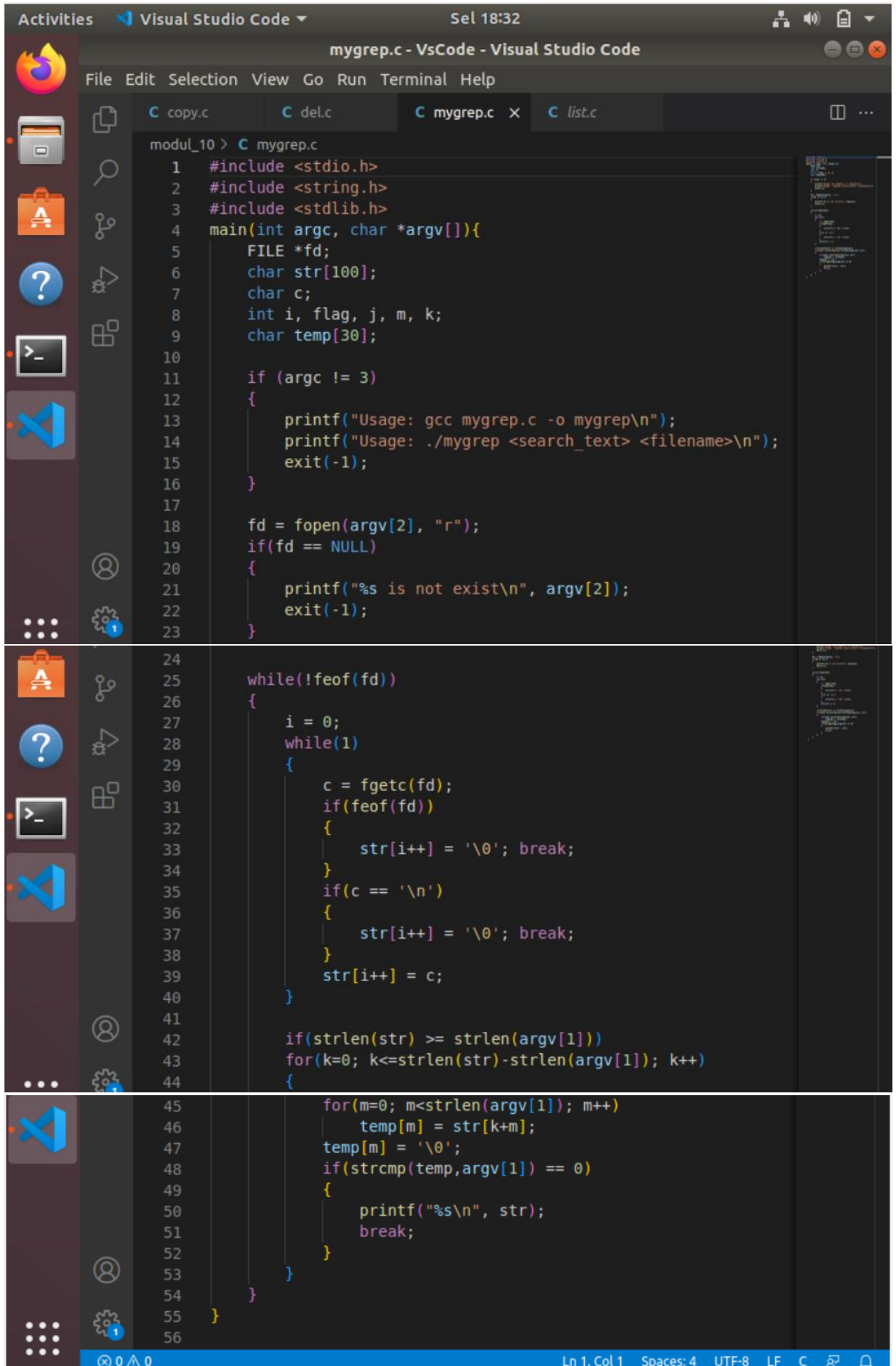


The screenshot shows a terminal window with the following output:

```
della@ubuntu18: ~
File Edit View Search Terminal Help
della@ubuntu18:~$ gcc list.c -o list
list.c:3:1: warning: return type defaults to 'int' [-Wimplicit-int]
main() {
^~~~~~
list.c: In function 'main':
list.c:7:5: warning: implicit declaration of function 'getcwd'; did you mean 'getw'? [-Wimplicit-function-declaration]
getcwd(pathname);
^~~~~~
getw
della@ubuntu18:~$ ./list
Desktop          Documents        Downloads        L200219269.sh
Music            Pictures        Public          Templates
Videos          VsCode         a.out           copy.c
del.c           file           list            list.c
mygrep          mygrep.c       snap            test.txt
della@ubuntu18:~$
```

2. Program untuk mensimulasi perintah 'grep'

Kode Program :



```
modul_10 > C mygrep.c
1  #include <stdio.h>
2  #include <string.h>
3  #include <stdlib.h>
4  main(int argc, char *argv[]){
5      FILE *fd;
6      char str[100];
7      char c;
8      int i, flag, j, m, k;
9      char temp[30];
10
11     if (argc != 3)
12     {
13         printf("Usage: gcc mygrep.c -o mygrep\n");
14         printf("Usage: ./mygrep <search_text> <filename>\n");
15         exit(-1);
16     }
17
18     fd = fopen(argv[2], "r");
19     if(fd == NULL)
20     {
21         printf("%s is not exist\n", argv[2]);
22         exit(-1);
23     }
24
25     while(!feof(fd))
26     {
27         i = 0;
28         while(1)
29         {
30             c = fgetc(fd);
31             if(feof(fd))
32             {
33                 str[i++] = '\0'; break;
34             }
35             if(c == '\n')
36             {
37                 str[i++] = '\0'; break;
38             }
39             str[i++] = c;
40         }
41
42         if(strlen(str) >= strlen(argv[1]))
43         for(k=0; k<=strlen(str)-strlen(argv[1]); k++)
44         {
45             for(m=0; m<strlen(argv[1]); m++)
46                 temp[m] = str[k+m];
47             temp[m] = '\0';
48             if(strcmp(temp,argv[1]) == 0)
49             {
50                 printf("%s\n", str);
51                 break;
52             }
53         }
54     }
55 }
56
```

Output :

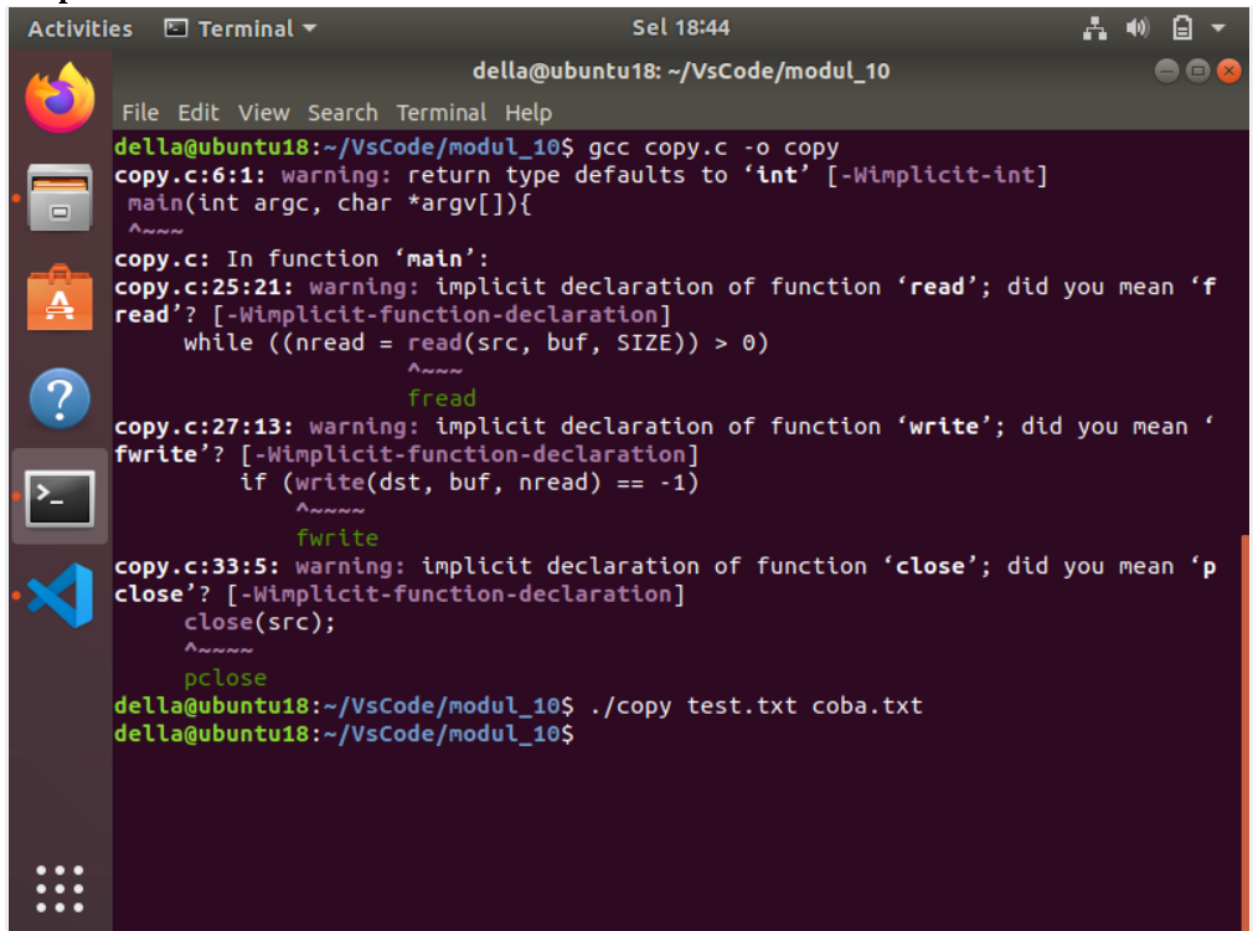
```
Activities Terminal Sel 18:37
della@ubuntu18: ~/VsCode/modul_10
File Edit View Search Terminal Help
della@ubuntu18:~/VsCode/modul_10$ gcc mygrep.c -o mygrep
mygrep.c:4:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(int argc, char *argv[]){
^
della@ubuntu18:~/VsCode/modul_10$ ./mygrep Della test.txt
Della Fitria Lestari (L200219268)
della@ubuntu18:~/VsCode/modul_10$
```

3. Program untuk mensimulasi perintah 'cp'

Code Program :

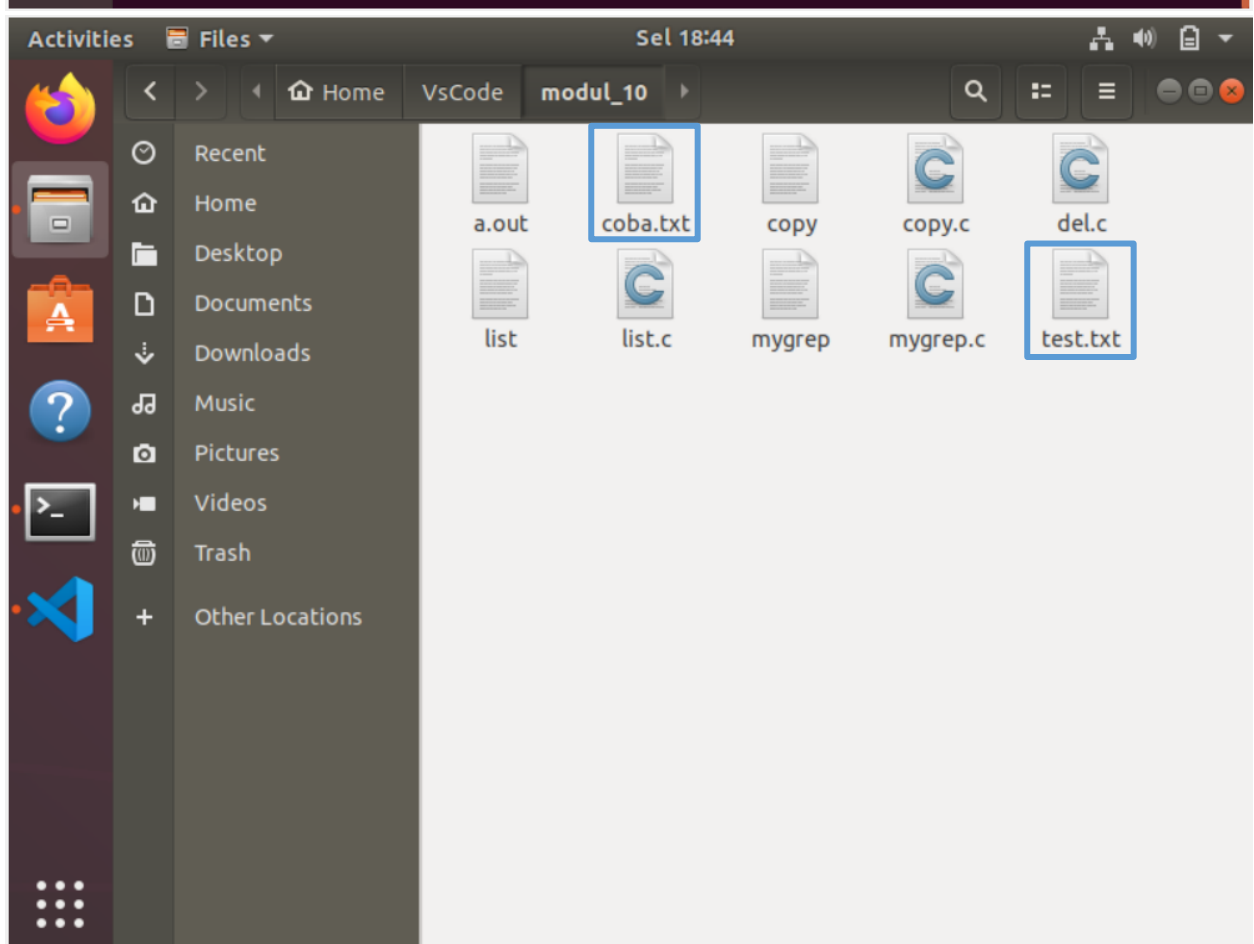
```
Activities Visual Studio Code Sel 18:43
copy.c - VsCode - Visual Studio Code
File Edit Selection View Go Run Terminal Help
C copy.c X C del.c C mygrep.c C list.c
modul_10 > C copy.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <fcntl.h>
4 #include <sys/stat.h>
5 #define SIZE 1024
6 main(int argc, char *argv[]){
7     int src, dst, nread;
8     char buf[SIZE];
9     if (argc != 3)
10    {
11        printf("Usage: gcc copy.c -o copy\n");
12        printf("Usage: ./copy <filename> <newfile>\n");
13        exit(-1);
14    }
15    if ((src = open(argv[1], O_RDONLY)) == -1)
16    {
17        perror(argv[1]);
18        exit(-1);
19    }
20    if ((dst = creat(argv[2], 0644)) == -1)
21    {
22        perror(argv[1]);
23        exit(-1);
24    }
25    while ((nread = read(src, buf, SIZE)) > 0)
26    {
27        if (write(dst, buf, nread) == -1)
28        {
29            printf("can't write\n");
30            exit(-1);
31        }
32    }
33    close(src);
34    close(dst);
35 }
```

Output :



The terminal window shows the following commands and output:

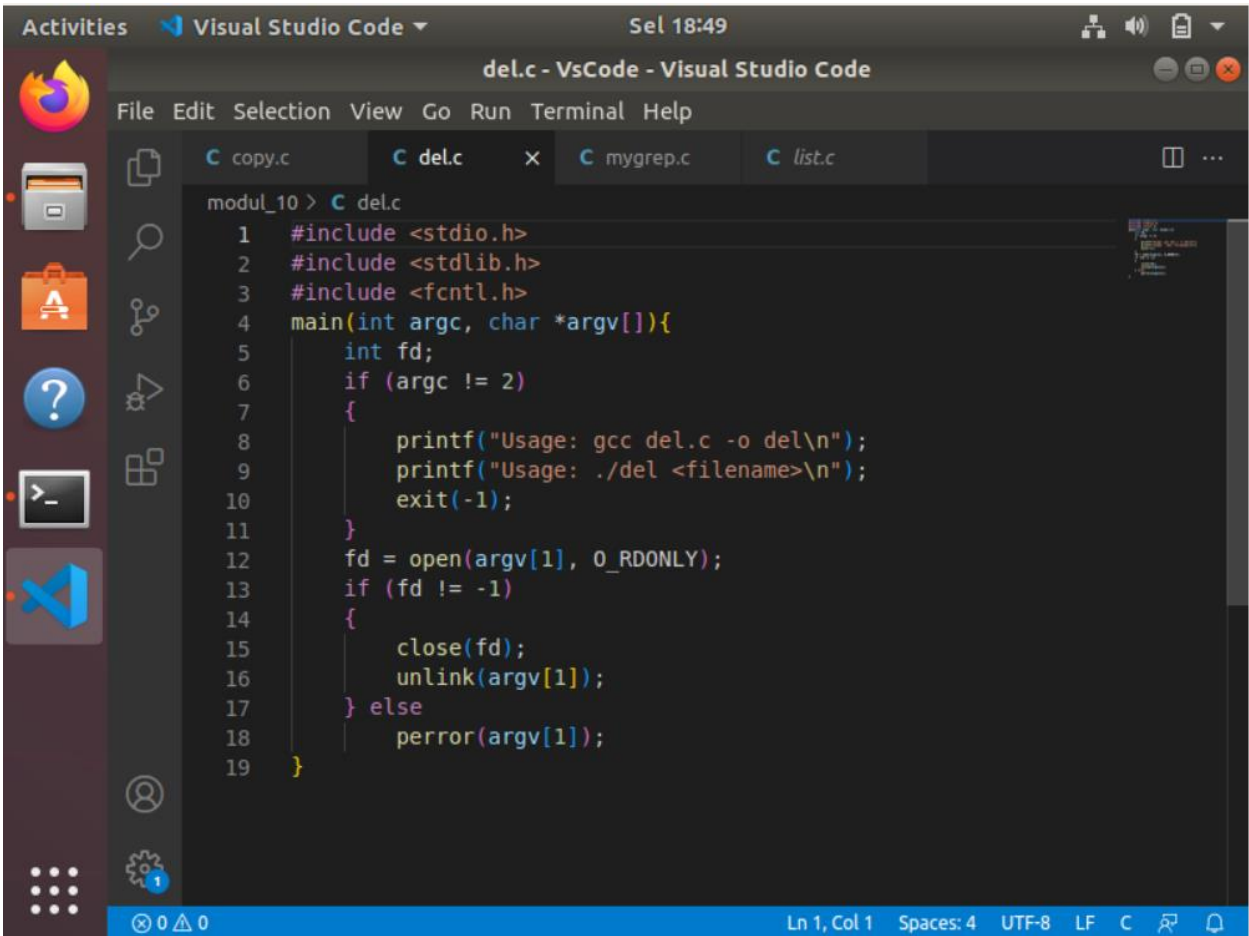
```
della@ubuntu18: ~/VsCode/modul_10
della@ubuntu18:~/VsCode/modul_10$ gcc copy.c -o copy
copy.c:6:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(int argc, char *argv[]){
^~~~~
copy.c: In function 'main':
copy.c:25:21: warning: implicit declaration of function 'read'; did you mean 'f
read'? [-Wimplicit-function-declaration]
while ((nread = read(src, buf, SIZE)) > 0)
^~~~~
copy.c:27:13: warning: implicit declaration of function 'write'; did you mean '
fwrite'? [-Wimplicit-function-declaration]
if (write(dst, buf, nread) == -1)
^~~~~
copy.c:33:5: warning: implicit declaration of function 'close'; did you mean 'p
close'? [-Wimplicit-function-declaration]
close(src);
^~~~~
pclose
della@ubuntu18:~/VsCode/modul_10$ ./copy test.txt coba.txt
della@ubuntu18:~/VsCode/modul_10$
```



The file manager window shows the following files in the 'modul_10' directory:

- a.out
- coba.txt
- copy
- copy.c
- del.c
- list
- list.c
- mygrep
- mygrep.c
- test.txt

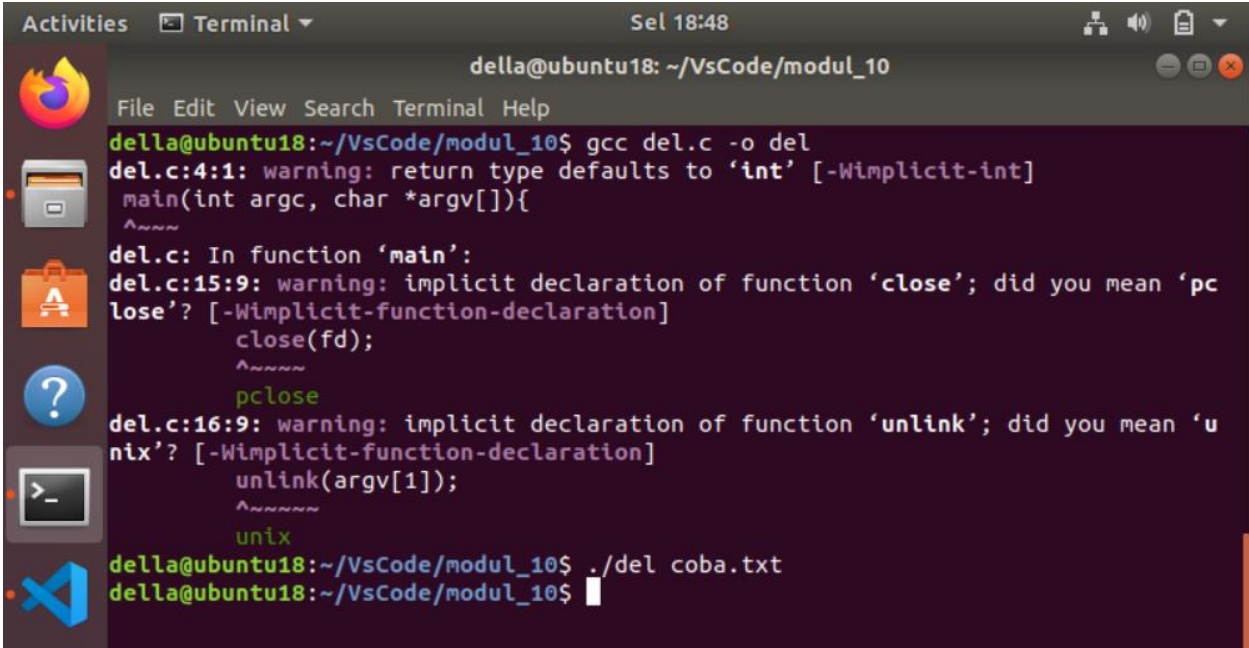
4. Program untuk mensimulasi perintah ‘rm’
Kode Program :



The screenshot shows the Visual Studio Code editor with the file `del.c` open. The code is as follows:

```
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <fcntl.h>
4 main(int argc, char *argv[]){
5     int fd;
6     if (argc != 2)
7     {
8         printf("Usage: gcc del.c -o del\n");
9         printf("Usage: ./del <filename>\n");
10        exit(-1);
11    }
12    fd = open(argv[1], O_RDONLY);
13    if (fd != -1)
14    {
15        close(fd);
16        unlink(argv[1]);
17    } else
18        perror(argv[1]);
19 }
```

Output :



The screenshot shows a terminal window with the following output:

```
della@ubuntu18: ~/VsCode/modul_10
della@ubuntu18:~/VsCode/modul_10$ gcc del.c -o del
del.c:4:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(int argc, char *argv[]){
~~~~~
del.c: In function 'main':
del.c:15:9: warning: implicit declaration of function 'close'; did you mean 'pclose'? [-Wimplicit-function-declaration]
close(fd);
~~~~~
pclose
del.c:16:9: warning: implicit declaration of function 'unlink'; did you mean 'unix'? [-Wimplicit-function-declaration]
unlink(argv[1]);
~~~~~
unix
della@ubuntu18:~/VsCode/modul_10$ ./del coba.txt
della@ubuntu18:~/VsCode/modul_10$
```

