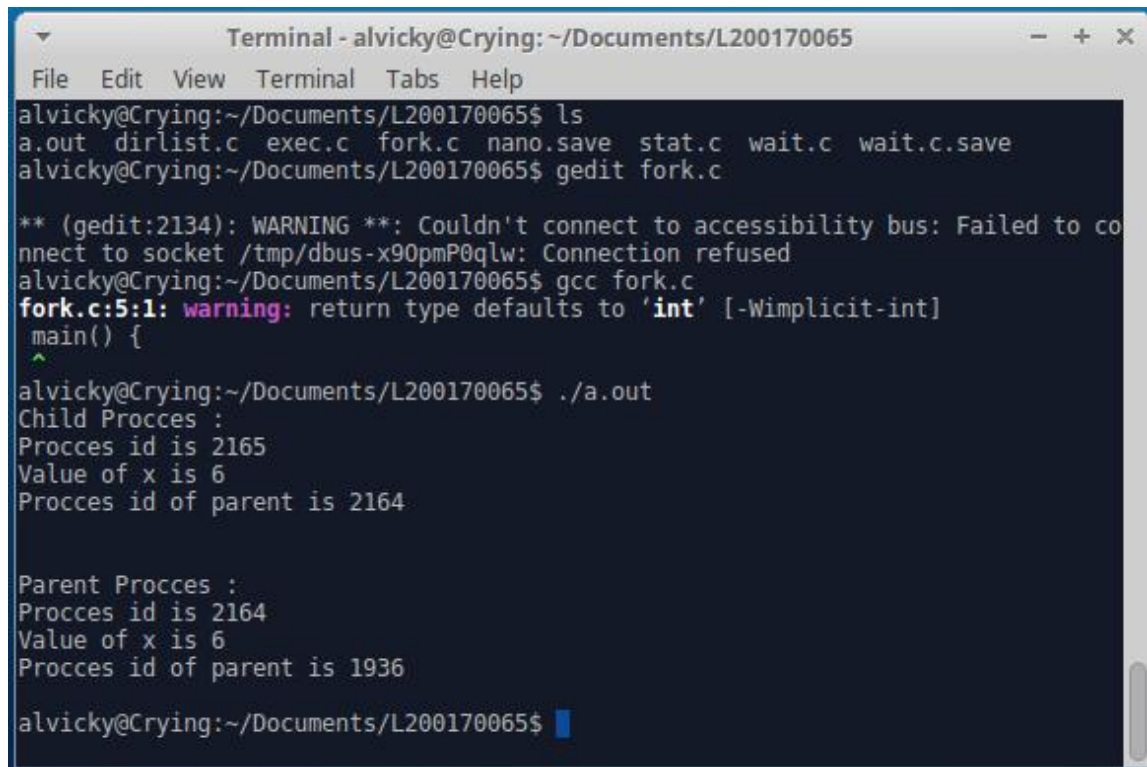


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Kelas : C
Matkul : Praktikum Sistem Operasi

MODUL 8

Fork.c



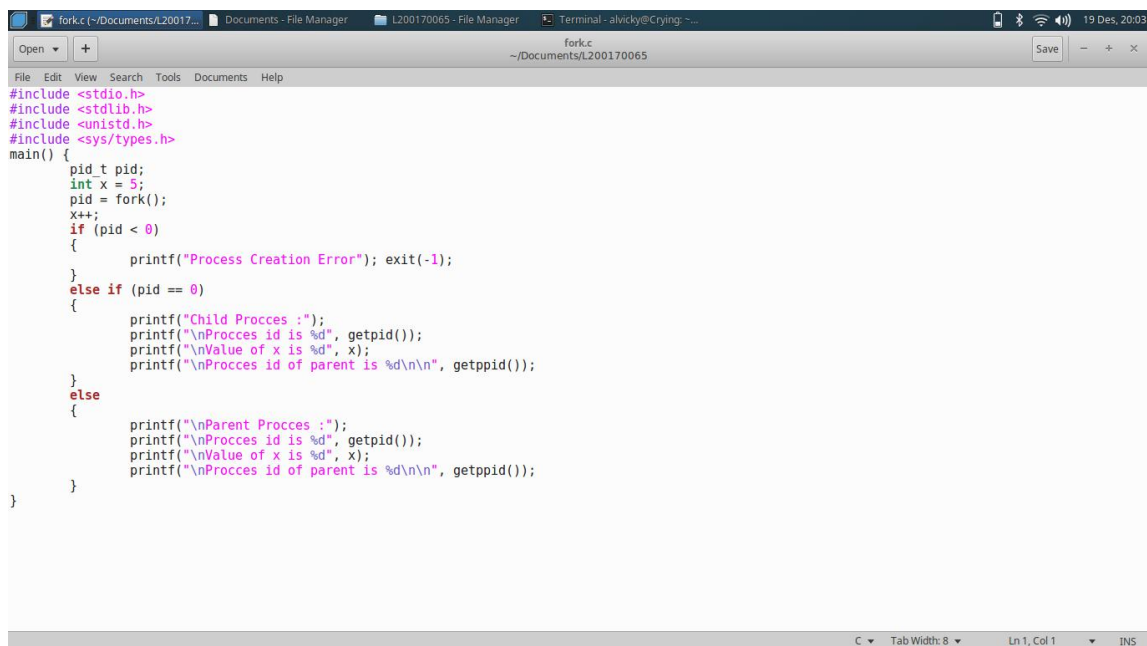
```
Terminal - alvicky@Crying: ~/Documents/L200170065
File Edit View Terminal Tabs Help
alvicky@Crying:~/Documents/L200170065$ ls
a.out dirlist.c exec.c fork.c nano.save stat.c wait.c wait.c.save
alvicky@Crying:~/Documents/L200170065$ gedit fork.c

** (gedit:2134): WARNING **: Couldn't connect to accessibility bus: Failed to connect to socket /tmp/dbus-x90pmP0qlw: Connection refused
alvicky@Crying:~/Documents/L200170065$ gcc fork.c
fork.c:5:1: warning: return type defaults to 'int' [-Wimplicit-int]
main() {
^
alvicky@Crying:~/Documents/L200170065$ ./a.out
Child Procces :
Procces id is 2165
Value of x is 6
Procces id of parent is 2164

Parent Procces :
Procces id is 2164
Value of x is 6
Procces id of parent is 1936

alvicky@Crying:~/Documents/L200170065$
```

Source Code Fork.c



```
fork.c (~/.Documents/L200170065)
Documents - File Manager
L200170065 - File Manager
Terminal - alvicky@Crying: ~
19 Des, 20:03

Open + Save - + x
File Edit View Search Tools Documents Help
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/types.h>
main() {
    pid_t pid;
    int x = 5;
    pid = fork();
    x++;
    if (pid < 0)
    {
        printf("Process Creation Error"); exit(-1);
    }
    else if (pid == 0)
    {
        printf("Child Procces :");
        printf("\nProcces id is %d", getpid());
        printf("\nValue of x is %d", x);
        printf("\nProcces id of parent is %d\n", getppid());
    }
    else
    {
        printf("\nParent Procces :");
        printf("\nProcces id is %d", getpid());
        printf("\nValue of x is %d", x);
        printf("\nProcces id of parent is %d\n", getppid());
    }
}
```

Wait.c

```
Terminal - alvicky@Crying: ~/Documents/L200170065
File Edit View Terminal Tabs Help

Parent Procces :
Procces id is 2164
Value of x is 6
Procces id of parent is 1936

alvicky@Crying:~/Documents/L200170065$ gedit wait.c

** (gedit:2176): WARNING **: Couldn't connect to accessibility bus: Failed to connect to socket /tmp/dbus-x90pmP0qlw: Connection refused
alvicky@Crying:~/Documents/L200170065$ gcc wait.c
wait.c:6:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(){
^
alvicky@Crying:~/Documents/L200170065$ ./a.out wait.c
child starts
Nomor Ganjil: 1 3 5 7 9
Child ends

Parent starts
Nomor Genap : 2 4 6 8 10
Parent ends
alvicky@Crying:~/Documents/L200170065$
```

Source Code Wait.c

```
wait.c (~Documents/L200170065) [stat0.png - Image Viewer (7...)] [Documents - File Manager] [Documents - File Manager] [Terminal - alvicky@Crying: ~...] 19 Des, 20:05
Open +
wait.c
~/Documents/L200170065
File Edit View Search Tools Documents Help

#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/wait.h>
main(){
    int i,status;
    pid_t pid;
    pid = fork();

    if (pid < 0){
        printf("\nPembuatan proses gagal\n");
        exit (-1);
    }
    else if (pid>0){
        wait (NULL);
        printf("\nParent starts\nNomor Genap :");
        for(i=2;i<=10;i+=2)
            printf("%3d",i);
        printf ("\nParent ends\n");
    }
    else if (pid == 0){
        printf ("child starts\nNomor Ganjil:");
        for (i=1;i<=10;i+=2)
            printf("%3d",i);
        printf ("\nChild ends\n");
    }
}
```

Exec.c

```
Terminal - alvicky@Crying: ~/Documents/L200170065
File Edit View Terminal Tabs Help
Insufficient Argument to load program
usagr: ./a.out <path> <cmd>
Child process
A NULL argv[0] was passed through an exec system call.
Child Terminated
alvicky@Crying:~/Documents/L200170065$ ./a.out exec.c

Insufficient Argument to load program
usagr: ./a.out <path> <cmd>
Child process
(null) Program not loaded using exec System call
Child Terminated
alvicky@Crying:~/Documents/L200170065$ ./a.out exec.c

Insufficient Argument to load program
usagr: ./a.out <path> <cmd>
Child process
(null) Program not loaded using exec System call
Child Terminated
alvicky@Crying:~/Documents/L200170065$ ./a.out /bin/ls ls
Child process
a.out dirlist.c exec.c fork.c nano.save stat.c wait.c wait.c.save
Child Terminated
alvicky@Crying:~/Documents/L200170065$
```

Source Code Exec.c

```
exec.c (~Documents/L200170065) [hashil.png - Image View... [Documents - File Manager] [Documents - File Manager] Terminal - alvicky@Crying: ~... 19 Dec, 20:07
Open +
exec.c
~/Documents/L200170065
File Edit View Search Tools Documents Help
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/types.h>
main(int argc, char*argv[]) {
    pid_t pid;
    int i;
    if(argc != 3)
    {
        printf("\nInsufficient Argument to load program");
        printf("\nusagr: ./a.out <path> <cmd>\n");
    }

    switch(pid = fork())
    {
        case -1:
            printf("Fork Failed");
            exit(-1);
        case 0:
            printf("Child process\n");
            i = execl(argv[1], argv[2], 0);
            if(i < 0)
            {
                printf("%s Program not loaded using exec System call\n", argv[2]);
                exit(-1);
            }
        default:
            wait(NULL);
            printf("Child Terminated\n");
            exit(0);
    }
}
```

Stat.c

```
Terminal - alvicky@Crying: ~/Documents/L200170065
File Edit View Terminal Tabs Help

has type '__ino_t {aka long unsigned int}' [-Wformat=]
printf("__Inode no. : %d\n", file.st_ino);

stat.c:24:9: warning: format '%d' expects argument of type 'int', but argument 2
has type '__off_t {aka long int}' [-Wformat=]
printf("File size : %d bytes\n", file.st_size);

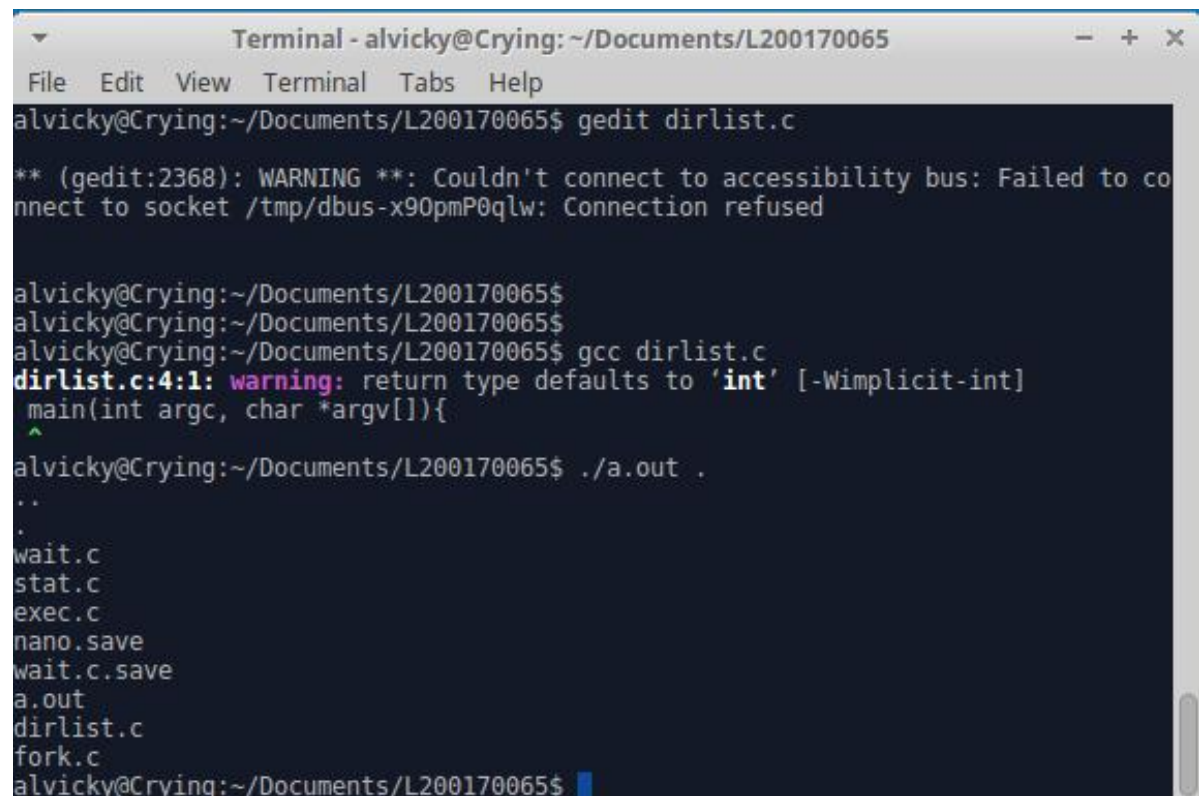
stat.c:25:9: warning: format '%d' expects argument of type 'int', but argument 2
has type '__nlink_t {aka long unsigned int}' [-Wformat=]
printf("No. of links : %d\n", file.st_nlink);

alvicky@Crying:~/Documents/L200170065$ ./a.out stat.c
User id :1000
Groupid :1000
Block size : 4096
Blocks allocated : 8
Inode no. : 534149
last accessed : Wed Dec 19 20:11:12 2018
last modified : Fri Nov 30 10:35:36 2018
File size : 1372 bytes
No. of links : 1
Permissions : -rw-r--r--
File type : regular
alvicky@Crying:~/Documents/L200170065$
```

Source Code Stat.c

```
stat.c (~/.Documents/L200170065)
#include <stdio.h>
#include <sys/stat.h>
#include <stdlib.h>
#include <time.h>
int main(int argc, char*argv[]) {
    struct stat
    file; int n;
    if (argc != 2)
    {
        printf("Usage : ./a.out <filename>\n"); exit(-1);
    }
    if ((n = stat(argv[1], &file)) == -1)
    {
        perror(argv[1]);
        exit(-1);
    }
    printf("User id :%d\n", file.st_uid);
    printf("Groupid :%d\n", file.st_gid);
    printf("Block size : %d\n", file.st_blksize);
    printf("Blocks allocated : %d\n", file.st_blocks);
    printf("Inode no. : %d\n", file.st_ino);
    printf("last accessed : %s", ctime(&file.st_atime));
    printf("last modified : %s", ctime(&file.st_mtime));
    printf("File size : %d bytes\n", file.st_size);
    printf("No. of links : %d\n", file.st_nlink);
    printf("Permissions : ");
    printf((S_ISDIR(file.st_mode)) ? "d" : "-");
    printf((file.st_mode & S_IRUSR) ? "r" : "-");
    printf((file.st_mode & S_IWUSR) ? "w" : "-");
    printf((file.st_mode & S_IXUSR) ? "x" : "-");
    printf((file.st_mode & S_IRGRP) ? "r" : "-");
    printf((file.st_mode & S_IWGRP) ? "w" : "-");
    printf((file.st_mode & S_IXGRP) ? "x" : "-");
    printf((file.st_mode & S_IROTH) ? "r" : "-");
    printf((file.st_mode & S_IWOTH) ? "w" : "-");
    printf((file.st_mode & S_IXOTH) ? "x" : "-");
    printf("\n");
    if(file.st_mode & S_IFREG)
        printf("File type : regular\n");
    if(file.st_mode & S_IFDIR)
        printf("File type : Directory\n");
}
```


Dirlist.c

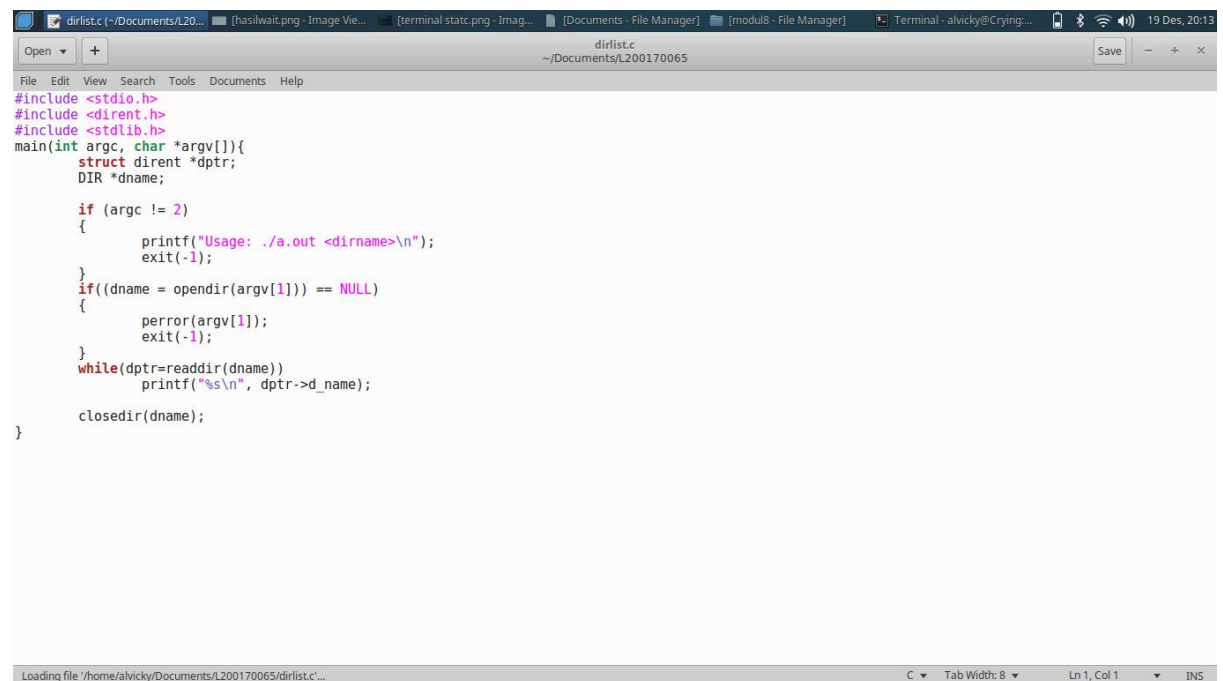


```
Terminal - alvicky@Crying: ~/Documents/L200170065
File Edit View Terminal Tabs Help
alvicky@Crying:~/Documents/L200170065$ gedit dirlist.c

** (gedit:2368): WARNING **: Couldn't connect to accessibility bus: Failed to co
nnect to socket /tmp/dbus-x90pmP0qlw: Connection refused

alvicky@Crying:~/Documents/L200170065$
alvicky@Crying:~/Documents/L200170065$
alvicky@Crying:~/Documents/L200170065$ gcc dirlist.c
dirlist.c:4:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(int argc, char *argv[]){
^
alvicky@Crying:~/Documents/L200170065$ ./a.out .
..
.
wait.c
stat.c
exec.c
nano.save
wait.c.save
a.out
dirlist.c
fork.c
alvicky@Crying:~/Documents/L200170065$
```

Source Code Dirlist.c



```
dirlist.c
~/Documents/L200170065
File Edit View Search Tools Documents Help
#include <stdio.h>
#include <dirent.h>
#include <stdlib.h>
main(int argc, char *argv[]){
    struct dirent *dptr;
    DIR *dname;

    if (argc != 2)
    {
        printf("Usage: ./a.out <dirname>\n");
        exit(-1);
    }
    if((dname = opendir(argv[1])) == NULL)
    {
        perror(argv[1]);
        exit(-1);
    }
    while(dptr=readdir(dname))
        printf("%s\n", dptr->d_name);

    closedir(dname);
}
```