

PRAKTIKUM SISTEM OPERASI

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Modul : 8

Fork.c

```
dikawfa: nano — Konsole
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GNU nano 4.5 fork.c
#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 process:");
        printf("\nProcess id is %d", getpid());
        printf("\nValue of x is %d", x);
        printf("\nProcess id of parent is %d\n\n", getppid());
    }
    else
    {
        printf("\nParent process:");
        printf("\nProcess id is %d", getpid());
        printf("\nValue of x is %d", x);
        printf("\nProcess id of shell is %d\n", getppid());
    }
}
```

```
dikawfa: zsh — Konsole
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dikawfa@Deutan12 ~$ nano fork.c
dikawfa@Deutan12 ~$ gcc fork.c
fork.c:5:1: warning: return type defaults to 'int' [-Wimplicit-int]
  5 | main() {
    | ^~~~
dikawfa@Deutan12 ~$ ./a.out

Parent process:
Process id is 10423
Value of x is 6
Process id of shell is 10322
Child process:
Process id is 10424
Value of x is 6
Process id of parent is 10423

dikawfa@Deutan12 ~$
```

wait.c

```
dikawfa: nano — Konsole
GNU nano 4.5 wait.c
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/wait.h>
main() {
    int i, status;
    pid_t pid;
    pid = fork();

    if (pid < 0)
    {
        printf("Pembuatan 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("\nChild starts\nNomor Ganjil:");
        for (i=1; i<=10; i+=2)
            printf("%3d", i);
        printf("\nChild ends\n");
    }
}
```

[Read 30 lines]

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```
dikawfa: zsh — Konsole
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dikawfa@Deutan12 ~$ nano wait.c
dikawfa@Deutan12 ~$ gcc wait.c
wait.c:5:1: warning: return type defaults to 'int' [-Wimplicit-int]
5 | main() {
  | ^~~~~
dikawfa@Deutan12 ~$ ./a.out

Child starts
Nomor Ganjil:  1  3  5  7  9
Child ends

Parent starts
Nomor genap:  2  4  6  8 10
Parent ends
dikawfa@Deutan12 ~$
```


exec.c

```

dikawfa: nano — Konsole
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GNU nano 4.5 exec.c
#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 arguments to load program");
        printf("\nUsage: ./a.out <path> <cmd>\n"); exit(-1);
    }
    switch(pid = fork()) {
    case -1:
        printf("Fork failed");
        exit(-1);
    case 0:
        printf("\nChild progress\n");
        i = execl(argv[1], argv[2], 0);
        if (i<0)
        {
            printf("%s program not loaded using exec system calls\n", argv[2]);
            exit(-1);
        }
    default:
        wait(NULL);
        printf("Child terminated\n");
        exit(0);
    }
}

```

```

dikawfa: zsh — Konsole <2>
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dikawfa@Deutan12 ~ nano exec.c
dikawfa@Deutan12 ~ gcc exec.c
exec.c:5:1: warning: return type defaults to 'int' [-Wimplicit-int]
  5 | main(int argc, char*argv[]) {
    | ^~~~~
exec.c: In function 'main':
exec.c:26:6: warning: implicit declaration of function 'wait' [-Wimplicit-function
-declaration]
  26 |     wait(NULL);
    |     ^~~~~
dikawfa@Deutan12 ~ ./a.out /bin/ls ls

Child progress
1.py Downloads newreactjs.jsx
72.py eclipse-workspace Pictures
73.py exec.c planmaker18free
77.py fork.c 'PlayOnLinux's virtual drives"
7.py fork.c.save powerline-shell
8.py freeoffice2018 presentations18free
Absensi-Open-Recruitment gradle Public
Android gradlew PycharmProjects
android-studio gradlew.bat settings.gradle.kts
AndroidStudioProjects guiscrcpy snap
a.out GvR SoftMaker
apa2.py IdeaProjects src
apa3.py Library stat.c
apa.py lolcat Templates
Applications lolcat-master textmaker18free
build.gradle.kts master.zip uninstall_smfreeoffice2018
cek1.py master.zip.1 Videos
cek.py master.zip.2 'VirtualBox VMs'
dead.letter MEGA wait.c
Desktop Music yay
dirlist.c NetBeansProjects zsh-syntax-highlighting
Documents newreactjs1.jsx

Child terminated
dikawfa@Deutan12 ~ |

```


stat.c

```
dikawfa: nano — Konsole
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GNU nano 4.5 stat.c Modified
#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("Group id : %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");
}

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dikawfa: zsh — Konsole
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dikawfa@Deutan12 ~ nano stat.c
dikawfa@Deutan12 ~ gcc stat.c
dikawfa@Deutan12 ~ ./a.out stat.c
User id : 1000
Group id : 1000
Block size : 4096
Blocks allocated : 8
Inode no. : 5362042
Last accessed : Tue Nov 19 15:50:35 2019
Last modified : Thu Nov 21 20:08:29 2019
File size : 1645 bytes
No. of links : 1
Permissions : -rw-r--r--
File type : Regular
dikawfa@Deutan12 ~ |
```


dirlist.c

dikawfa: nano — Konsole

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GNU nano 4.5dirlist.c

```
#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);
}
```

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dikawfa: zsh — Konsole

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```
dikawfa@Deutan12 ~$ nano dirlist.c
dikawfa@Deutan12 ~$ gcc dirlist.c
dirlist.c:4:1: warning: return type defaults to 'int' [-Wimplicit-int]
4 | main(int argc, char*argv[]){
  | ^~~~~
dikawfa@Deutan12 ~$ ./a.out Documents
FOSTISIDA
[Materi]
[ASLAB]
..
[TUGAS]
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dikawfa@Deutan12 ~$
```

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12,4 GiB free

20:53 WIB

Kamis, 21 November 2019