

# LAB 8

## PROCESS MANAGMENT

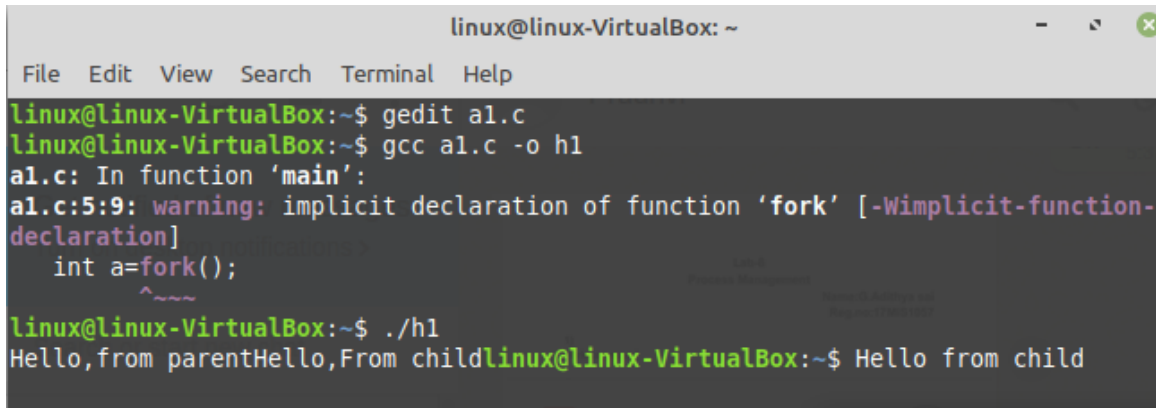
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### 1.Fork command

#### Code:

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
int a=fork();
if(a==0)
printf("Hello,from child");
else
printf("Hello,from Parent");
return 0;
}
```

#### Output:

A screenshot of a terminal window titled 'linux@linux-VirtualBox: ~'. The terminal shows the following commands and output:   
1. 'gedit a1.c' is executed.   
2. 'gcc a1.c -o h1' is executed.   
3. A warning message appears: 'a1.c: In function 'main': a1.c:5:9: warning: implicit declaration of function 'fork' [-Wimplicit-function-declaration]'.   
4. The code 'int a=fork();' is shown with a tilde '~' under the 'f' in 'fork'.   
5. './h1' is executed.   
6. The output is 'Hello,from parentHello,From child'.   
7. The prompt returns to 'linux@linux-VirtualBox:~\$'.

### 2.

#### EXECVE command

```
#include<stdio.h>
void main()
{
int pid;
```

```
pid=fork();
if(pid==0)
{
printf("\n hello child");
printf("%d",&pid);
}
else
{
printf("\n hello parent");
printf("%d",&pid);
}
}
```

```
#include<stdio.h>
int main()
{
int sum=0;
for(int i=0;i<5;i++)
{
sum=sum+i;
}
printf("%d",sum);
}
```

```
#include<stdio.h>
int main(int argc,char**argv,char**envp)
{
char*newargv[3];
int i;
newargv[0]="cat";
newargv[1]="add.c";
newargv[2]=NULL;
i=execve("/bin/cat/",newargv,envp);
exit(1);
}
```

```
eg1@AB16145CSE12: ~/Desktop
File Edit View Search Terminal Help

eg1@AB16145CSE12:~/Desktop$ ./wo
hello parent1794848308
hello child1794848308eg1@AB16145CSE12:~/Desktop$ gcc -o adv add.c
add.c: In function 'main':
add.c:9:10: warning: format '%d' expects argument of type 'int', but argument 2 has type 'int *' [-Wformat=]
printf("%d",&sum);
^
eg1@AB16145CSE12:~/Desktop$ ./adv
-1365014752eg1@AB16145CSE12:~/Desktop$ ./adv
559283360eg1@AB16145CSE12:~/Desktop$ gcc -o adv add.c
eg1@AB16145CSE12:~/Desktop$ ./adv
10eg1@AB16145CSE12:~/Desktop$ gcc -o bbj b.c
b.c: In function 'main':
b.c:8:1: error: expected ';', before 'newargv'
newargv[2]=NULL;
^
b.c:9:3: warning: implicit declaration of function 'execve' [-Wimplicit-function-declaration]
i=execve("/bin/cat/",newargv,envp);
^
b.c:10:1: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
exit(1);
^
b.c:10:1: warning: incompatible implicit declaration of built-in function 'exit'
b.c:10:1: note: include <stdlib.h> or provide a declaration of 'exit'
eg1@AB16145CSE12:~/Desktop$ gcc -o bbj b.c
b.c: In function 'main':
b.c:9:3: warning: implicit declaration of function 'execve' [-Wimplicit-function-declaration]
i=execve("/bin/cat/",newargv,envp);
^
b.c:10:1: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
exit(1);
^
b.c:10:1: warning: incompatible implicit declaration of built-in function 'exit'
b.c:10:1: note: include <stdlib.h> or provide a declaration of 'exit'
eg1@AB16145CSE12:~/Desktop$ ./bbj
eg1@AB16145CSE12:~/Desktop$
```

```
eg1@AB16145CSE12: ~/Desktop
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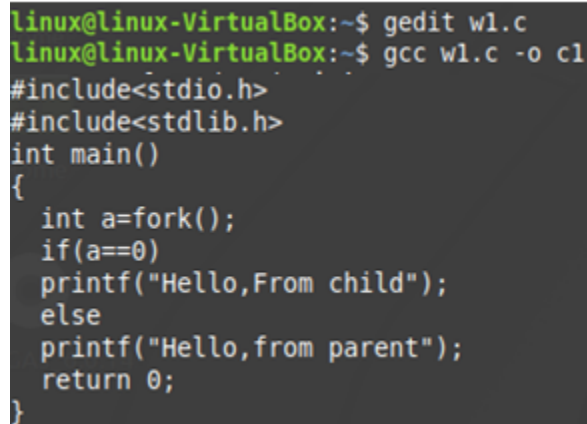
eg1@AB16145CSE12:~/Desktop$ ./adv
-1365014752eg1@AB16145CSE12:~/Desktop$ ./adv
559283360eg1@AB16145CSE12:~/Desktop$ gcc -o adv add.c
eg1@AB16145CSE12:~/Desktop$ ./adv
10eg1@AB16145CSE12:~/Desktop$ gcc -o bbj b.c
b.c: In function 'main':
b.c:8:1: error: expected ';', before 'newargv'
newargv[2]=NULL;
^
b.c:9:3: warning: implicit declaration of function 'execve' [-Wimplicit-function-declaration]
i=execve("/bin/cat/",newargv,envp);
^
b.c:10:1: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
exit(1);
^
b.c:10:1: warning: incompatible implicit declaration of built-in function 'exit'
b.c:10:1: note: include <stdlib.h> or provide a declaration of 'exit'
eg1@AB16145CSE12:~/Desktop$ gcc -o bbj b.c
b.c: In function 'main':
b.c:9:3: warning: implicit declaration of function 'execve' [-Wimplicit-function-declaration]
i=execve("/bin/cat/",newargv,envp);
^
b.c:10:1: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
exit(1);
^
b.c:10:1: warning: incompatible implicit declaration of built-in function 'exit'
b.c:10:1: note: include <stdlib.h> or provide a declaration of 'exit'
eg1@AB16145CSE12:~/Desktop$ ./bbj
eg1@AB16145CSE12:~/Desktop$ gcc -o nnn j.c
j.c: In function 'main':
j.c:7:9: warning: implicit declaration of function 'fork' [-Wimplicit-function-declaration]
if((pid=fork())<0)
^
j.c:13:1: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
exit(0);
^
j.c:13:1: warning: incompatible implicit declaration of built-in function 'exit'
j.c:13:1: note: include <stdlib.h> or provide a declaration of 'exit'
eg1@AB16145CSE12:~/Desktop$ ./nnn
parent terminateseg1@AB16145CSE12:~/Desktop$
```

3)  
Cat command using exeve in c:  
Code:

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

```
#include <unistd.h>
int main()
{
char* argv[3] = {"/bin/cat", "fork.c", NULL};
execve("/bin/cat", argv, NULL);
}
```

### Output:



```
linux@linux-VirtualBox:~$ gedit w1.c
linux@linux-VirtualBox:~$ gcc w1.c -o c1
#include<stdio.h>
#include<stdlib.h>
int main()
{
    int a=fork();
    if(a==0)
        printf("Hello,From child");
    else
        printf("Hello,from parent");
    return 0;
}
```

### 4)

#### Wait and status in process:

##### Code:

```
#include<stdio.h>
#include<stdlib.h>
#include<sys/wait.h>
int main(void)
{
    pid_t pid;
    int status;
    if((pid=fork())<0)
        {printf("Error");}
    else if(pid==0)
        {exit(0);}
    if(wait( &status!=pid))
        {printf("wait Error\n");}
    //pr_exit(status);
    if((pid=fork())<0)
        {printf("Fork Error");}
```

```
else if(pid==0)
{abort();}
}
```

### Output:

```
linux@linux-VirtualBox:~$ gedit w1.c
linux@linux-VirtualBox:~$ gcc w1.c
w1.c: In function 'main':
w1.c:8:9: warning: implicit declaration of function 'fork' [-Wimplicit-function-declaration]
  if((pid=fork())<0)
      ^~~~~
w1.c:16:16: warning: comparison between pointer and integer
  if(wait(&status!=pid))
      ^~
w1.c:16:9: warning: passing argument 1 of 'wait' makes pointer from integer without a cast [-Wint-conversion]
  if(wait(&status!=pid))
      ^
In file included from w1.c:3:0:
/usr/include/x86_64-linux-gnu/sys/wait.h:77:16: note: expected 'int *' but argument is of type 'int'
  extern __pid_t wait (int *__stat_loc);
                  ^~~~~
linux@linux-VirtualBox:~$ ./a.out
wait Error
```