Secure coding lab 3

Ananthanarayanan S

CB.EN.P2CYS23007

1.System calls

```
1 #include <syscall.h>
2 #include <unistd.h>
3 #include <stdio.h>
4 #include <sys/types.h>
5 int main(void)
6 {long ID1, ID2;
7 ID1 = syscall(SYS_getpid);
8 printf ("syscall(SYS_getpid)=%ld\n",
9 ID1);
10 ID2 = getpid();
11 printf ("getpid()=%ld\n", ID2);
12 return(0);
13 }
```

output

```
(kali@ kali)-[~/Desktop]
$ gedit systemcalls.c

(gedit:12616): Gtk-WARNING **: 04:15:46.194: Calling

(kali@ kali)-[~/Desktop]
$ gcc systemcalls.c -o system

(kali@ kali)-[~/Desktop]
$ ./system
syscall(SYS_getpid)=16301
getpid()=16301
```

2. fork

Output

If else

```
fork.c
  Open ▼ ...
                                                                                                      Save 📗 🔘 🗴
1 #include <syscall.h>
2 #include <unistd.h>
3 #include <stdio.h>
            <sys/types.h>
5 int main() {
6
7
8
9
   int return_value;
      printf("Forking process\n");
      return_value = fork();
     if (return_value = 0) {
    // This is the child process
10
11
          printf("Child process: The process id is %d and return_value is %d\n ", getpid(), return_value); }
      else {
    // This is the parent process

12
13
           printf("Parent process: The process id is %d and return_value is %d\n ", getpid(), return_value); }
14
15
16 }
```

Output

```
File Actions Edit View Help

(kali@ kali)-[~]

$ cd Desktop

(kali@ kali)-[~/Desktop]

$ gedit fork.c

(kali@ kali)-[~/Desktop]

$ gcc fork.c -o fork

(kali@ kali)-[~/Desktop]

$ /fork

Forking process

Parent process: The process id is 47668 and return_value is 47669

Child process: The process id is 47669 and return_value is 0
```

3. Exec.c

output

```
(kali⊗ kali)-[~/Desktop]
$ ./ex
PID = 49604
Back to exec.c - This line will not be executed
```

hello.c

Output

```
(kali@kali)-[~/Desktop]
$ gcc hello.c -o hello

(kali@kali)-[~/Desktop]
$ ./hello
We are in Hello.c
PID of hello.c = 52724
```

After saving both file and executing exec.c

```
(kali⊗ kali)-[~/Desktop]
$ ./ex
PID = 53689
We are in Hello.c
PID of hello.c = 53689
```