



---

# OPERATING SYSTEM

---

Experiment 9&10 - overlay

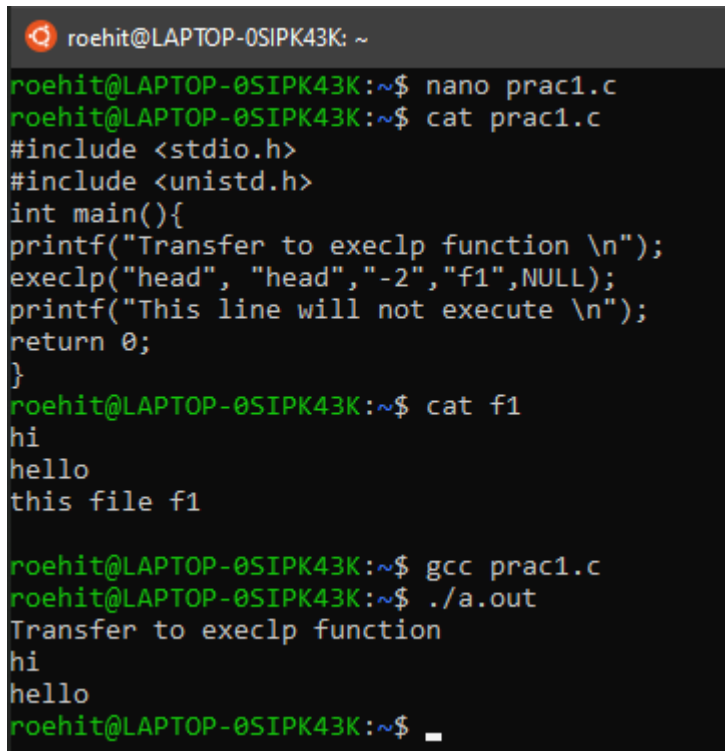


L2 -SWE

ROEHIT RANGANATHAN  
RA1911033010017

**Objective:** To understand the overlay concepts and practice how to overlay the current process to new process in Linux using C. **Overlay** is the concept which enables the user to run another new process from the currently running process address space.

### Practice questions: 1)

A terminal window with a dark background and light-colored text. The prompt is 'roehit@LAPTOP-0SIPK43K: ~'. The user enters 'nano prac1.c' and 'cat prac1.c'. The code shown is: '#include <stdio.h>', '#include <unistd.h>', 'int main(){', 'printf("Transfer to execlp function \n");', 'execlp("head", "head", "-2", "f1", NULL);', 'printf("This line will not execute \n");', 'return 0;', '}', followed by 'cat f1' showing 'hi', 'hello', 'this file f1'. Then 'gcc prac1.c' and './a.out' are entered, resulting in the output: 'Transfer to execlp function', 'hi', 'hello'.

```
roehit@LAPTOP-0SIPK43K: ~  
roehit@LAPTOP-0SIPK43K:~$ nano prac1.c  
roehit@LAPTOP-0SIPK43K:~$ cat prac1.c  
#include <stdio.h>  
#include <unistd.h>  
int main(){  
printf("Transfer to execlp function \n");  
execlp("head", "head", "-2", "f1", NULL);  
printf("This line will not execute \n");  
return 0;  
}  
roehit@LAPTOP-0SIPK43K:~$ cat f1  
hi  
hello  
this file f1  
  
roehit@LAPTOP-0SIPK43K:~$ gcc prac1.c  
roehit@LAPTOP-0SIPK43K:~$ ./a.out  
Transfer to execlp function  
hi  
hello  
roehit@LAPTOP-0SIPK43K:~$ _
```

**Why is the second printf statement not executing?**

The second print statement will not work because we are executing execlp function, it will not come back to the function where it called, it comes back when there is an error in that execution. That's why the second print statement does not work.

2)

roehit@LAPTOP-0SIPK43K: ~

```
roehit@LAPTOP-0SIPK43K:~$ nano prac2.c
roehit@LAPTOP-0SIPK43K:~$ cat prac2.c
#include <stdio.h>
#include <unistd.h>
int main (int argc, char *argv[])
{
printf("Transfer to execlp function \n");
execl("/usr/bin/head", "head", argv[1], argv[2], NULL);
printf("This line will not execute \n");
return 0;
}

roehit@LAPTOP-0SIPK43K:~$ cat f1
hi
hello
this file f1

roehit@LAPTOP-0SIPK43K:~$ gcc prac2.c
roehit@LAPTOP-0SIPK43K:~$ ./a.out -2 f1
-bash: ./a.out: No such file or directory
roehit@LAPTOP-0SIPK43K:~$ ./a.out -2 f1
Transfer to execlp function
hi
hello
roehit@LAPTOP-0SIPK43K:~$
```