Lab 9
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1 -two different result

```
prompt > ./p1
hello world (pid:29146)
hello, I am parent of 29147 (pid:29146)
hello, I am child (pid:29147)
prompt>
```

```
prompt > ./p1
hello world (pid:29146)
hello, I am child (pid:29147)
hello, I am parent of 29147 (pid:29146)
```

-The pid value different from one run to another.
different machines see different pid value.

- All the processes in operating system are created when a process executes the fork() system call except the startup process. The process that used the fork() system call is the parent process.

A child process is create by a parent process in operating system using a fork() system call. returns the process ID of the parent of the calling process.

process ID or PID is a number used by most operating system kernels - such as those of Unix macOS & windows - to uniquely identify an active.

- Parent fork() will return PID of child but child fork() will return 0 in stead.

2. - It calls the wait API in the else clause, which has the code that is responsible for the parent process execution.

-The wait() function shall suspend execution of the calling thread until status information for one of the terminated child processes of the calling process is available.

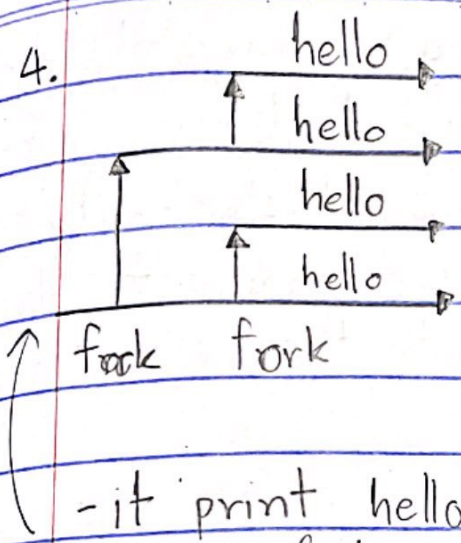
- output

```
prompt >./p2
hello world (pid:29266)
hello I am child (pid: 29267)
hello I am parent of 29267 (rc_wait: 29267) (pid: 2926
prompt >
```

3. - This program is forking a new child process, but does not intend the child process be a replica of its parent process. Instead, the child process that is forked is to run a totally different new program with the help of exec()

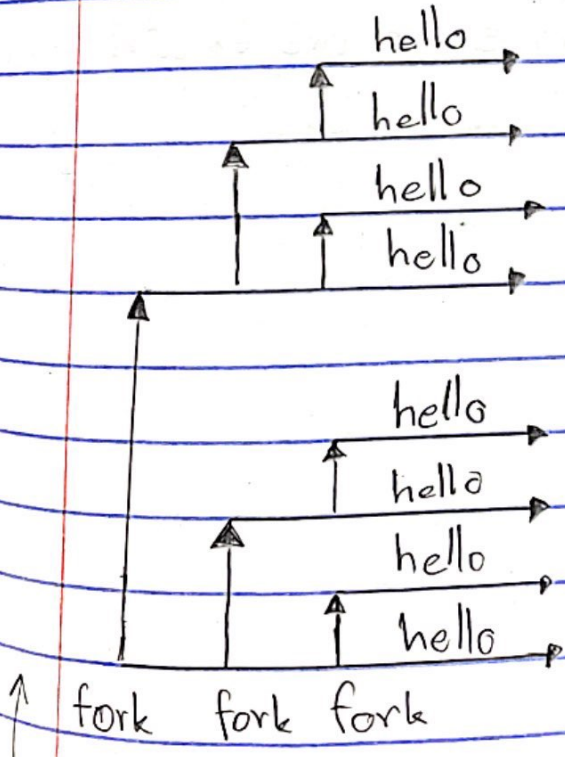
- So the main different between fork() & exec() is that fork starts new process which is a copy of the main process. the exec() replaces the current process image with new one, Both parent and child processes are executed simultaneously

4.



- it print hello 4 times it work like this. because fork() will have a child proeess So it will working for 4 times.

5.



- it will error because the third fork() not have ; but if put ; it will print hello 8 times. will be like previous question answer