

Q2

Write C program that creates 2 children, each one creates one child, all processes must print their process identification number (PID) as well as their parent process identification number (PPID).

Code

```
emad@vbox: ~/Desktop/emad1007395/assignment4/Q2
GNU nano 2.5.3 File: q2.c Modified

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

int main() {
    pid_t id[5];
    // id[0]: Main process
    // id[1]: Process_1
    // id[1]: Process_2
    // id[1]: Process_1_1
    // id[1]: Process_2_1

    if( fork() ) {
        if( fork() ){
            id[0] = getpid();
            printf("Main process: PID = %d\n", id[0]);
            wait();
        }else {
            if( fork() ) {
                id[2] = getpid();
                printf("    process_2: PID = %d\tPPID = %d\n", id[2], getppid() );
                wait();
            }else {
                id[4] = getpid();
                printf("    process_2_1: PID = %d\tPPID = %d\n", id[4], getppid() );
                wait();
            }
        }
        wait();
    }else {
        if( fork() ) {
            id[1] = getpid();
            printf("    process_1: PID = %d\tPPID = %d\n", id[1], getppid() );
            wait();
        }else {
            id[3] = getpid();
            printf("    process_1_1: PID = %d\tPPID = %d\n", id[3], getppid() );
            wait();
        }
        wait();
    }
    wait();
    return 0;
}

[ XOFF ignored, mumble mumble ]
^G Get Help  ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify
^X Exit       ^R Read File  ^\ Replace    ^U Uncut Text ^T To Spell
```

Screenshot

```
emad@vbox: ~/Desktop/emad1007395/assignment4/Q2
emad@vbox:~/Desktop/emad1007395/assignment4/Q2$ gcc q2.c
q2.c: In function 'main':
q2.c:17:7: warning: implicit declaration of function 'wait'
      [-Wimplicit-function-declaration]
      wait();
      ^
emad@vbox:~/Desktop/emad1007395/assignment4/Q2$ ./a.out
Main process: PID = 3961
  process_2: PID = 3963      PPID = 3961
  process_1: PID = 3962      PPID = 3961
  process_1_1: PID = 3965     PPID = 3962
  process_2_1: PID = 3964     PPID = 3963
emad@vbox:~/Desktop/emad1007395/assignment4/Q2$ ./a.out
Main process: PID = 3970
  process_2: PID = 3972      PPID = 3970
  process_1: PID = 3971      PPID = 3970
  process_2_1: PID = 3973     PPID = 3972
  process_1_1: PID = 3974     PPID = 3971
emad@vbox:~/Desktop/emad1007395/assignment4/Q2$
```