

using execve system call + 1 arg like pwd + must take tool path

use by

I am a simple shell, enter your command \$ /usr/bin/ls

```
#include <stdio.h>
#include <stdlib.h>
#include <sys/wait.h>
#include <unistd.h>
#include <string.h>

#define BUF_SIZE 100
int main()
{
    char buf[BUF_SIZE];

    while(1) {
        printf("I am a simple shell, enter your command $ ");
        fgets(buf, BUF_SIZE, stdin);
        buf[strlen(buf) - 1] = 0;
        if (strlen(buf) == 0)
            continue;

        pid_t pid = fork();
        if (pid > 0) {
            int status;
            printf("PARENT: my pid = %d, my child pid = %d\n", getpid(),
                pid);
            wait(&status);
            printf("PARENT: my pid = %d, my child status = %d\n", getpid(),
                WEXITSTATUS(status));
        } else if (pid == 0) {
            printf("CHILD: my pid = %d, my parent pid = %d\n", getpid(),
                getppid());
            char *newargv[] = { buf, NULL };
            char *newenvp[] = { NULL };
            execve(buf, newargv, newenvp);
            printf
                ("Exec failed, kernel is not the mode of executing programs\n");
            exit(-1);
        } else {
```

```

        printf("PARENT: failed to fork\n");
    }
}
return 0;
}

```

using wrapper execlp here 1 arg but take only tool name not path and it searches for u

Enter command to run: ls

```

#include <string.h>
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/wait.h>

int main() {
    char buf[256];
    while(1){
        printf("Enter command to run: ");
        if (fgets(buf, sizeof(buf), stdin) == NULL) {
            perror("fgets failed");
            return -1;
        }
        // Remove newline
        buf[strlen(buf) - 1] = 0;
        if (strlen(buf) == 0)
            continue;
        pid_t pid = fork();

        if (pid > 0) {
            // Parent process
            int status;
            wait(&status); // wait for child
            printf("PARENT: my pid = %d, my child status = %d\n",
                getpid(), WEXITSTATUS(status));
        } else if (pid == 0) {
            // Child process
            printf("CHILD: my pid = %d, my parent pid = %d\n", getpid(),
                getppid());

            // Use execlp: first arg = file to run, followed by argv list, ending

```

```
with NULL
    execlp(buf, buf, (char *)NULL);
    // Only reached if exec fails
    perror("Exec failed");
    exit(-1);
} else {
    // Fork failed
    perror("PARENT: failed to fork");
    return -1;
}
}
return 0;
}
```