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//source file for fork and exec

/\*head files\*/

**#include** "stdio.h"

**#include** "unistd.h"

**#include** <stdlib.h>

**#include** <string.h>

**#include** <sys/wait.h>

//function declaration

**void** **break\_down\_line**(**char** \*input, **char** \*\*data, **int** &num);

/\*main function\*/

**int** **main**()

{

**char** \*input0 = NULL;

size\_t len = 0;

size\_t flag = 0;

**char** \*argv[6];

**int** i = 0;

**int** status;

**int** num = 0;

//init arguments, the maximum number of arguments is 5

//argv[5] is always NULL

**for** (i=0; i<6; i++)

{

argv[i]=NULL;

}

**while**(1)

{

//get the command\_line from the user

//if errors exist, exit

**printf**("Please input your command:\n");

**if**((flag = getline(&input0, &len, stdin)) == -1)

{

**return** 0;

}

**else**//break down the input from user

{

**char** \*input1 = **new** **char**[len];

**strcpy**(input1, input0);

input1[**strlen**(input1) - 1] = ' '; //change "\n" into " "

break\_down\_line(input1, argv, num);

**delete** input1;

}

//if user types "exit", exit

**if**(**strcmp**(argv[0],"exit")==0)

{

exit(0);

}

//After read commands from user,

//create a child process using fork()

**int** pid = fork();

//executes the command in the child process

//displays the results if any

**if**(pid == 0)

{

**if**( execvp(argv[0],argv) < 0) exit(1);

}

**else**

{

//wait for the child process to execute

**while** (wait(&status) != pid);

}

}

**for**(i = 0; i < num; i ++)

{

**delete**[]argv[i];

}

**return** 0;

}

//use " " to seperate each parameter for execvp.

**void** **break\_down\_line**(**char** \*input, **char** \*\*data, **int** &num)

{

**char** \*token;

**int** count = 0;

token=**strtok**(input, " ");

**while** (token!=NULL && count < 6)

{

data[count] = **new** **char**[**strlen**(token) + 1];

**strcpy**(data[count++],token);

token=**strtok**(NULL, " ");

}

num = count - 1;

}