/\*

\* builtin.c : check for shell built-in commands

\* structure of file is

\* 1. definition of builtin functions

\* 2. lookup-table

\* 3. definition of is\_builtin and do\_builtin

\*/

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

#include <unistd.h>

#include "shell.h"

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* builtin function definitions \*/

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/\* "echo" command. Does not print final <CR> if "-n" encountered. \*/

/\* Fill in code. \*/

static void bi\_echo(char \*\*argv) {

/\* Fill in code. \*/

int number = strcmp(argv[1],"-n");

if(number == 0){

int a;

a = atoi(argv[2]);

printf("%s\n",argv[a+2]);

}else{

int i;

for(i=1;argv[i]!=NULL;i++)

{

printf("%s ",argv[i]);

}

printf("\n");

}

}

static void bi\_quit(char \*\*argv) {

/\* Fill in code. \*/

exit(0);

}

static void bi\_exit(char \*\*argv) {

/\* Fill in code. \*/

exit(0);

}

static void bi\_bye(char \*\*argv) {

/\* Fill in code. \*/

exit(0);

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* lookup table \*/

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static struct cmd {

char \* keyword; /\* When this field is argv[0] ... \*/

void (\* do\_it)(char \*\*); /\* ... this function is executed. \*/

} inbuilts[] = {

/\* Fill in code. \*/

{ "echo", bi\_echo }, /\* When "echo" is typed, bi\_echo() executes. \*/

{ "quit", bi\_quit },

{ "exit", bi\_exit },

{ "bye", bi\_bye },

{ NULL, NULL } /\* NULL terminated. \*/

};

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* is\_builtin and do\_builtin \*/

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

static struct cmd \* this; /\* close coupling between is\_builtin & do\_builtin \*/

/\* Check to see if command is in the inbuilts table above.

Hold handle to it if it is. \*/

int is\_builtin(char \*cmd) {

struct cmd \*tableCommand;

for (tableCommand = inbuilts ; tableCommand->keyword != NULL; tableCommand++)

if (strcmp(tableCommand->keyword,cmd) == 0) {//strcmp two string is equal return 0, first string >two string return >1

this = tableCommand;

return 1;

}

return 0;

}

/\* Execute the function corresponding to the builtin cmd found by is\_builtin. \*/

int do\_builtin(char \*\*argv) {

this->do\_it(argv);

}