

How to add a shell command:

<http://xinu.mscs.mu.edu/Shell>

Lets say we want to add an echo command that echo s the words that list after the command “echo”

1. Update include directory shell.h file include/shell.h to include prototype

```
command xsh_echo(ushort stdin, ushort stdout, ushort stderr, ushort nargs,
char *args[])
```

2. Update shell/shell.c command table to include command as an entry

```
{echo, FALSE, xsh_echo}
```

The second parameter says “FALSE” because echo is not a built-in function.

3. Add xsh_command.c in the shell directory

Add xsh_echo.c file in the shell directory.

Its content is as follows:

```
=====

/**
 * @file      xsh_echo.c
 * @provides  xsh_echo
 *
 * $Id$
 */
/* Embedded XINU, Copyright (C) 2007.  All rights reserved. */

#include <kernel.h>
#include <stdio.h>
#include <string.h>

/**
 * Shell command echos input text to standard out.
 * @param stdin descriptor of input device
 * @param stdout descriptor of output device
 * @param stderr descriptor of error device
 * @param args array of arguments
 * @return OK for success, SYSERR for syntax error
 */
command xsh_echo(ushort stdout, ushort stdin, ushort stderr, ushort nargs,
char *args[])
{
    int i; /* counter for looping through arguments */

    /* Output help, if '--help' argument was supplied */
    if (nargs == 2 && strncmp(args[1], "--help", 6) == 0)
    {
        fprintf(stdout, "Usage: clear\n");
        fprintf(stdout, "Clears the terminal.\n");
        fprintf(stdout, "\t--help\t display this help and exit\n");
        return SYSERR;
    }
}
```

```

}

/* loop through the arguments printing each as it is displayed */
for ( i = 1; i < nargs; i++ )
{
    fprintf(stdout, "%s ", args[i]);
}

/* Just so the next prompt doesn't run on to this line */
fprintf(stdout, "\n");

/* there were no errors so, return OK */
return OK;
}

```

4. Update compile/Makefile to add the newly created shell file to be included in the compilation process.

In the SHL=...

add xsh_echo.c

5. Compile and upload

cd compile

gmake

xinu-status

(find a free server: do not use the server name with a 1)

To upload:

mips-console server_name

ex: mips-console moiz

6. If everything worked alright you will see xsh> prompt.
7. Type help to see "echo" listed as one of the shell commands
8. Type the command "echo" and some words. You will see the words you types echoed back.

Lets discuss Makefile and make utility for those who are not familiar with it.