

# Cmpe 322 Fall 2005 Project

Due 9.1.2006, 11:59 AM

## 1 Basic Description

In this project you are going to implement a Linux kernel module that gives out *fortune cookies*.

## 2 Details

You are going to implement a module that will watch for a proc FS file called `/proc/mycookie`, which will first read a list of *fortune cookies* from the user, (multiple lines possible). Later, when a user tries to read from that device, the module will print a line (randomly chosen each time) from the cookie list. Users may add new cookies to the list later on.

## 3 More details

This project requires you to write a module that will support a file in the proc filesystem, we shall name this file as `/proc/mycookie`. This special file is responsible for storing and randomly giving back one-line sentences (called *fortune cookies*) submitted by the users. A demo is given below.

Let's assume you have a file called **cookielist.txt** with the following content

```
‘‘Computer Science if no more about computers than astronomy is  
about telescopes’’ Edsger W. Dijkstra
```

```
‘‘Don’t Panic’’ HHGTTG
```

```
‘‘Forty Two’’ HHGTTG
```

```
You are just beginning to live
```

```
Lucky you: Your fortune is meaningless
```

```
It has been just discovered that research causes cancer in rats
```

```
I used to be arrogant. Now I’m simply perfect
```

```
‘‘If you don’t gamble, you’ll never win’’ Bukowski
```

```
SATTERING’S LAW: ‘‘It works better if you plug it in’’
```

```
The man who makes no mistakes does not usually make anything
```

First you load your file, like:

```
$ cat cookielist.txt > /proc/mycookie
```

Later you can get random fortune cookies from the module like:

```
$ cat /proc/mycookie  
Lucky you: Your fortune is meaningless  
$
```

If you call it again, you get another random cookie:

```
$ cat /proc/mycookie  
‘‘Don’t Panic’’ HHGTTG  
$
```

## 4 Notes

- Note that a lot of choices are not explained and left to you, being engineers you are supposed to deal with them, not copy from your friends. Such behaviors will not be tolerated.
- To pass the course, you must get a passing grade from the project.
- **Deadline is 9.01.2006, 11.59 AM. SHARP.** There will not be any extensions.
- This is not a team project, work alone. Cheaters, collaborators, copiers, plagiarists, "did not know that this was an alone-project"s, etc, whatever you name it, will be penalized.
- You are welcome to consult your friends, internet (there are similar works all over the web), books but the code must be your own only. Heavy usage of external resources (like codes taken directly from the net) is not tolerated.
- You must be able to explain the details of your code in a satisfactory manner when asked
- **IMPORTANT:** Do not make useless/meaningless/not-justifiable assumptions, because if your assumption is not meaningful enough then you will lose points. Think well about your assumptions and decisions. Plan ahead, start early and finish early.
- **What to submit:** You will submit
  - a CD/diskette or some other medium that contains the module you have **compiled**.
  - a diskette with the codes you have changed in the kernel or added to the kernel will be submitted.
  - a detailed project report in **hard copy** (Detailed in terms of information; not words/figures). Your report should explain the work you have accomplished, not the reason of using  $j$  as the name of a variable of your functions.

- Notice again that you will give a hard-copy of your report, meaning if you try to email the report on the last day it will be just **ignored and not accepted**.

## 5 What is a fortune cookie?

Definition of fortune cookie:

From Wikipedia, ([http://en.wikipedia.org/wiki/Fortune\\_cookie](http://en.wikipedia.org/wiki/Fortune_cookie)):  
The fortune cookie is a cookie with a piece of paper inside with words of wisdom and/or prophecy, commonly found at Chinese restaurants throughout the United States. The idea of fortune cookies was introduced in the early 20th century by Makoto Hagiwara at the Japanese Tea Garden in Golden Gate Park, San Francisco, as a refreshment to be taken while strolling the tea garden.

From <http://www.archivemag.co.uk/gloss/F.html>:  
Fortune cookie an inane/witty/profound comment that can be found around the net

Good Luck.

Again, "Don't Panic".