Assignment 5: Kernel data structures II

Introduction

The goal of this assignment is to get used to essential data structures in Linux Kernel. Basically, we will extend assignment 4 by adding more data structures including `hash table`, `red-black tree` and `XArray`. For ease of testing, we will add a file in the `/proc` file system to print out the contents of data structures.

Recommended Background Reading

- Linux /proc file system
- Bash Scripting Tutorial for Beginners
- Explain Shell

Instructions (~60 minutes)

[35 points] Download the source code attached -- `hw5.tar.gz`. Carefully read the code to understand the template code given and what you need to write. Then, add comments (`X7-X10`) explaining each code block's meaning and implement features (`X1-X6`). You can test your program by executing `test-hw5.sh`. Make a **screenshot** (named `hw5_firstname.png|jpg`) of what you observe when executing the `test-hw5.sh` script. Upload the screenshot to Blackboard.

Rename the folder `code` to `hw5_firstname` and create **a gzip-ed tarball named** **`hw5_firstname.tar.gz`**. Upload a gzip-ed tarball.

Grading rubric

```
hw5.c
- Implementation - X1-X6  - 5pts each, 30pts total
- Explanation - X7-X10  - 1pt each, 4pts total

Screenshot  - 1pt
```