**Lab 4 Server Team Protocol**

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# Intro

In this lab, client programs access a linux shared memory space using the older System V api. Information on attaching to a segment is available on the shmop (shared operations) [linux manual page](https://www.man7.org/linux/man-pages/man2/shmop.2.html). Information on creating and getting a shared memory identifier is available on the shmget [linux manual page](https://www.man7.org/linux/man-pages/man2/shmget.2.html). You will also need to use [shmat](https://linux.die.net/man/2/shmat) to read the shared memory.

# Key

Shared memory is accessed by using a special key. The key used for this lab is 0x727 (1831 decimal).

# Shared Memory Structure

The shared memory contains an array of student structures. The array is 17 entries in length.

Each student structure looks as the following:

/\*\* The Student struct holds an entry for a single student's data. \*/

typedef struct

{

    char userID[9]; //null-terminated string with capacity 9

    char fullName[21]; //null-terminated string with capacity 21

    short age;

    float gpa;

    short active; // 0 == inactive, otherwise active

    time\_t lastLogin; // the time the user last logged in

    int loginDuration; // total time the user has been logged into draco1 (in seconds)

} Student; //in total the structure is 56 bytes in size

Technically the 17 entries also include Professor Chen, who is not a student, so you may want to name this struct differently.