HOMEWORK 1, CS350 – Operating Systems

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Due Date: 1.March.2020, Sunday, 23:55 (10 points)

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Prerequisites:

- Download and Install VmPlayer (or Oracle VirtualBox)
- Download latest Ubuntu Linux ISO image and install it as a VM. Start Ubuntu.
- Practice with the following Linux commands using the "terminal" application.
    - ls, cd, mkdir, rmdir, pwd, nano, cat, grep, top, nice, date
    - su, sudo, passwd, chmod, apt-get install, make, lsmod

1. C: "Hello World!" And "Hello Driver" (3 pts)

- Write a C file (**hello.c**) that prints "Hello World!" to the screen
- Write a C driver (**hello_driver.c**) that prints "Hello World!" to the Kernel log
- Write a single **Makefile** that compiles both

2. System Calls (2 pts)

- Write a C program (**getpid.c**) that uses both kernel syscall "SYS_getpid" and C library function getpid() to print the process id of the program when you compile and run it. Compare the results.

3. You will implement a simple C database called "ozudb" (5 pts)

- Ozudb (**ozudb.c**) has 6 commands: **C** (Create table), **R** (Read file), **A** (Append new person), **D** (Delete a person), **P** (Print table), **E** (Exit)
- In your program you will create a simple 5 row People table as "**struct person People[5]**", therefore you need to define a C "**struct person**" (in **person.h**) with 3 fields <id, firstname, lastname>
- You will import data from the "**People.csv**" file which contains <id,firstname,lastname>.
- Your database program should run until the user enters **exit(E)** command.
- To test your code, you can do the following steps and **print table(P)** after each step:
    1. Create the ***People*** table
    2. Read data from ***People.csv file*** in LMS.
    3. Append **your name** into the table.
    4. Delete the entry with the ***id 4*** (*4, Dummy, Person*)
    5. Exit from the program and **take the screenshot** of the terminal. **Include screenshot(s)** in your submission.

SUBMISSION GUIDE:

- Create a folder "<studentid>_hw1" and put all your files in that folder.
- Compress the folder using the following command. Change the student id accordingly.
- **tar -zcvf <studentid>_hw1.tar.gz <studentid>_hw1/**
- Upload the tar.gz file to LMS Homework1.