Advanced OS
Assignment #2 - Adding and testing a new system call to Linux kernel
New Deadline - 18/10/2021

Objective:

- Add new system calls to Linux kernel and test them.
- Get understanding of how system call works, their structure.

Prerequisites:

1. Basic usage and architectural of system calls

2. Preliminaries such as C/C++ code compilation, execution & debugging.

Guidelines:

Download the Linux kernel version **4.19.210** from https://www.kernel.org/ and implement this assignment on this kernel only.

Proper error handling should be done.

Requirements:

Ques 1: Write syscall to print welcome message to Linux logs   **-10**

e.g., If your name is ayushi mahajan then syscall name will be ayushihello()

Which will print some hello message to Linux logs upon calling it.

Ques 2: Write syscall which will receive string parameter and print it along with some   **-15**

 message to kernel logs

e.g., If your name is ayushi mahajan then syscall name will be ayushiprint(string)

Which will print passed parameter along with some message to Linux logs.

Ques 3: Write system call to print the parent process id and current process id upon calling it -30

e.g., If your name is ayushi mahajan then syscall name will be ayushiprocess()

Which will print parent process id and current process id to Linux logs.

Ques 4: Write system call to execute some predefined system call from your written   -15

 system call

e.g., If your name is ayushi mahajan and you want to execute getpid() then syscall name will be ayushigetpid()

Which will work the same way as getpid() works.

Report   -10

Viva   -20

Submission Format:

A zip folder consisting of:

- A single pdf report of all 4 questions having following things:
    - → All snapshots of changes made for each question in a step-wise wise manner with proper explanation.
    - → For Ques3 Are both process ids same or different? Why? What are your observations.
- All four system call code.c file.

Naming conversion: Rollnumber_assignment2.zip

References:

- **https://www.stolaf.edu/people/rab/os/lab/newsyscall.html**
- **https://medium.com/anubhav-shrimal/adding-a-hello-world-system-call-to-linux-kernel-dad32875872**