CPSC 526 Network System Security

System Programming

Goal for the tutorial …

- What are system calls?
- How to use system calls in python?
- Communicating between different processes
- Some use cases for system calls

System Calls

"System call is a way in which a program request a service from the kernel of operating system"

Types of system calls:

- Process control
- File manipulation
- Device management
- Information maintenance
- Communication

User Mode

Kernel Mode
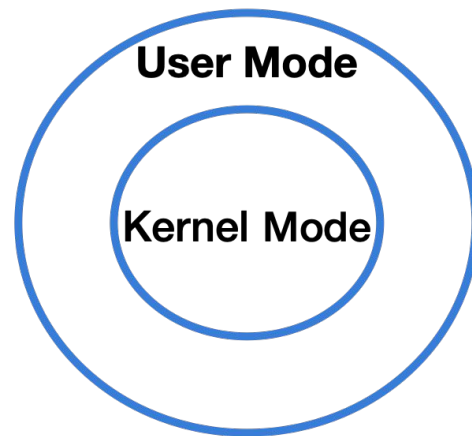
System call in Python

- We will use subprocess module in python for system calls
- This module allows you to spawn new processes, connect to their input/outputs pipes and get their return codes

Using the Subprocess module

- The recommended approach to invoke a subprocess is to use the run() method
- For advance use cases use Popen() method

Subprocess module

- Practical demo in the jupyter notebook