1 Limited Direct Execution

Vocabulary

1. **Time Sharing**

   - Is a mechanism used by an OS to share a resource
   - Allows an entity to use the resource for a little while, and then a little while by another, and so forth

     Example

     CPU

2. **Limited Direct Execution**

   - Is synomyous to **baby proofing**
   - **Limited** Means there will be a limit to what a processor can and cannot do
   - **Direct Execution** Means that the processor will run directly on the CPU

3. **User Mode**

   - Is a processor mode where code that runs is restricted in what it can do

4. **Kernel Mode**

   - Is a processor mode where code that runs can do what it likes, including previleged operations

     Example

     Previleged operations include

     1. I/O requests
     2. Executing all types of restricted instructions

5. **System Call**

   - Is a programmatic way in which a computer program requests a previleged service from the kernel of the operating system

6. **Trap**

   - Is a type of synchronous interrupt caused by an exceptional condition
   - Usually results in a switch to kernel mode

- Exceptional condition such as:
  - Breakpoint
  - Division by zero
  - Invalid memory access
  - System Call

7. **Return-from-Trap**

   - Is an instruction that
     - Restores saved registers from kernel stack
     - Swithces the processor back to **user mode**

8. **Trap Table**

9. **Trap Handlers**

10. **System-call Numebr**

11. **Timer Interrupt**