9/28/22   Introduction

Definition : OS is a piece of software that abstracts & manages
              hardware resources for applications to use.
              • CPU ⇒ Processes & threads
              • RAM ⇒ Virtual Memory
              • Storage ⇒ Filesystem
              • I/O Devices

              resource
              management

              Handling Complexities
              & Masking limitations

3 Roles of OS

1). Referee [Resource Management]
- Resource allocation
- Isolation (failure isolation)
- Communication

2). Illusionist [Handling Complexities, Masking Limitation]
- examples = processes (dedicated CPU), virtual memory (infinite memory)

3). Glue [Common Services]

OS Evaluation Metrics

→ Reliability & Availability

→ Security = Isolation

→ Portability
   ① Abstract Virtual Machine (AVM)
      = API (posix) + memory access model + safe instructions

   ② Hardware Abstraction Layer (HAL)

→ Performance
   • overhead, fairness