**Assignment 2**

**Operating Systems**

 **Energy-Efficient Operating Systems**

* Explore how operating systems manage energy consumption in mobile devices and data centers.
* Discuss power-aware scheduling and its challenges.

 **Containerization vs. Virtualization**

* Explain the differences between containerization (e.g., Docker) and virtualization (e.g., VMware).
* Discuss their impact on operating system design and resource allocation.

 **Memory Management in GPUs**

* Explore how memory management differs in GPU environments compared to traditional CPU systems.
* Discuss shared memory and device memory management in CUDA or similar frameworks.

 **Immutable Operating Systems**

* Investigate the concept of immutable operating systems (e.g., CoreOS).
* Discuss their use cases, advantages, and limitations.

 **Self-Healing Operating Systems**

* Define what self-healing systems are and how they relate to operating system design.
* Provide examples of mechanisms like automated recovery, checkpointing, and redundancy.