CSE321 Theory Assignment 01

**Research** and **Explore** the working principles, types, and multi-boot capabilities of modern bootloader systems by analyzing the following key areas:

* **BIOS-based Bootloaders**
* **UEFI-based Bootloaders**
* **Multi-boot Bootloaders**

**Report Requirements:**

Write a comprehensive analysis focusing on the following three key factors:

**Boot Workflow and Components:**

* **Describe** the complete boot workflow from power-on to OS handoff for both BIOS and UEFI systems.
* **Explain** the distinct roles that the firmware, boot records (e.g., MBR), and boot managers play in each process.

**Architectural Comparison:**

* **Compare** the technical architecture and limitations of BIOS versus UEFI.
* **Discuss** their respective partition table support (MBR vs. GPT), the resulting disk size restrictions, and overall hardware compatibility.

**Multi-Boot Systems:**

* **Analyze** how multi-boot loaders manage multiple operating systems.
* **Discuss** their different approaches to menu implementation and explain the common challenges
* **Discuss** their solutions related to OS detection and chainloading.

**Submission guideline:** Can be found in the submission form given below.

Submission link: [Submission](https://forms.gle/aaM8e3iLobqBaAe68)

Deadline: 27 August, 11:00 PM   
**(Submission outside the google form will be automatically rejected)**