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# TEE Q&A (10 pts each)

Answer each question in **a few sentences**.

1. Why do we need TEE, given that the OS kernel is already providing isolation and protection to applications? State the security advantage of TEE vs. OS. What security protection that the TEE can provide but the OS cannot provide.

The purpose of the TEE is to prevent the execution of untrusted or unauthorized code on end users devices. TEE offers data integrity and confidentiality so that no third party can access the data when unencrypted. TEE ensure code integrity. TEE provides secure conjunction for secure collaboration where organizations do not need to trust each other with sensitive data. Finally, TEE provides flexibility in managing output destinations.

1. By design, what type of code should execute in TEE? State the design consideration: code size, programming languages, dependencies on 3rd party libraries, execution time, the level of trustworthiness, etc.
2. There is an argument that TEE is more trustworthy than a commodity OS kernel, e.g. Linux. Do you agree? Why? State to which attacks or threats the OS kernel is vulnerable, and to which attacks the TEE is vulnerable. Compare these attacks.
3. What does trusted computing base (TCB) mean? What is the TCB of your smartphone?

The TCB refers to all the system components that are critical to establishing and maintaining the security of a particular system. In the smartphone, the entire IOS is the TCB.

1. What is the role of "TEE supplicant"? What does it do?

A TEE supplicant is a program that runs as a daemon responsible for remote services expected by the TEE OS. TEE supplicant will receive the messages and store encrypted data accordingly to the Linux file system.

# Environment setup

Follow the tutorial and run the "helloworld" example

https://fxlin.github.io/p3-tee/quickstart/

1. Are you using QEMU or the Rpi3 hardware? If QEMU, are you using granger1, granger2, your local Linux, your local WSL, or others? (10 pts)
2. Show a screenshot of you successfully running helloworld . It must be generated by yourself (40 pts)