Q1 OS

Compare:

To compare the design of the Goroutine as in class we discuss that it lightweight and the runtime is light meaning like the cycle time and Thread is heavyweight due to the amount of memory used in the processes. Difference in performance to is that for thread it is better for CPU workloads and for Goroutine it is good for input and output workloads. Another idea is the concurrency limit which thread has up to thousands, but Goroutine can go higher than that. In addition, context switching is slower in threads, but Goroutine is faster which threads does kernel switching but Goroutine uses user space. And stack size for threads is has large stacks while Goroutine uses small stacks. Though similarity, is they could block if resources needed to wait. And they can be run through using deadlocks and other mechanisms.

Advantages:

The advantages of Goroutines are lightweight and only needs small memory and can run programs quick and fast. And context switching is slower and improves concurrency performance meaning it is faster for run time.

Disadvantages:

The disadvantage of Goroutines is when blocking calls the scheduler will slow down the execution. Meaning not to be managed it will waste the resources and have issues with performance.

3 sources from google

https://medium.com/@sairavitejachintakrindi/goroutines-and-threads-exploring-concurrency-in-go-370d609038c

https://dev.to/sajosam/go-routines-vs-threads-whats-the-difference-and-when-to-use-them-1g09

https://medium.com/@geisonfgfg/unleashing-concurrent-power-exploring-the-differences-pros-and-cons-of-go-routines-and-channels-c04ffa8a917a

Why source credible?

Medium is a widely used platform where professionals make articles on technical topics. Many authors on Medium provide detailed explanations, references, and examples that demonstrate their expertise. Articles are peer-reviewed by the community, making it a trustworthy source for learning about programming concepts like goroutines.

DEV Community is a professional platform specifically for developers to share knowledge, tutorials, and experiences. Articles are usually written by practitioners who have hands-on experience with the technologies they discuss. Plus these three websites are well known and is not fake.