

COMP 360 — Homework 2

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1 Reading

Read chapter 4.2 in the book.

2 Questions

1. How does an RPC call differ from a simple function call in a shared-memory system? What extra steps are necessary?
2. What kinds of data types can be marshalled and which cannot? Give two examples of each.
3. Consider the following two threads, executed in parallel. Assume that all variables are initialized to 0.

Listing 1: Thread 1

```
x+=1
```

Listing 2: Thread 2

```
x*=2  
x*=3
```

Enumerate all the possible final values of `x`, given arbitrary interleavings of these instructions.

4. Imagine a distributed system in a universe with no network faults. Can the system still become inconsistent? How?
5. Imagine a version of Gmail that lacks the Durability property. What kind of behavior would you expect from this system? Give an example of a behavior illustrating the lack of Durability.