Mystery of "X": CAP Theorem

- Proposed by Eric Brewer (Berkeley)
- Subsequently proved by Gilbert and Lynch (NUS and MIT)
- In a distributed system you can satisfy at

most 2 out of the 3 guarantees:

1. **Consistency**: all nodes see same data at any time, or reads return latest written value by any client
2. **Availability**: the system allows operations all the time, and operations return quickly
3. **Partition-tolerance**: the system continues to work in spite of network partitions