Distributed Computing III

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THE UNIVERSITY
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1 Introduction

In looking at distributed systems, we started from the perspective of Murphy's Law, *if anything can go wrong it will*. We will now move on to O'Toole's Commentary, *Murphy was an optimist*.

Large distributed systems consist of thousands of computing platforms, communicating over large distances and over unreliable internet connections. Failure of some part of the system is practically guaranteed [**?**], the system must be designed to cater for *partial failure*. Even for small systems, some part will eventually fail, so fault handling must be part of the design.

2 Consensus

2.1 Behaving Nodes

Leaders & Locks

2.2 Byzantine Faults

Byzantine Generals Problem

Idempotent

3 Consistency

3.1 Eventual Consistency

3.2 Linearizability

3.3 CAP Theorem

References