Taking Stock:
Beyond Propositional Logic,
First-Order Logic,
Second-Order Logic,
and their Respective Restrictions

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We will cover many aspects of the following topics after Spring Break:

1. Linear-time temporal logic (LTL)
2. Branching time logic (BTL)
3. Computation tree logic (CTL)
4. \( \text{CTL}^* = \text{LTL} + \text{CTL} \)
5. the “state-explosion problem”
We will entirely skip Hoare Logic this semester. Some of the key concepts of Hoare Logic:

1. partial correctness assertion (PCA)
2. total correctness assertion (TCA)
3. precondition and weakest precondition
4. postcondition and strongest postcondition
Time permitting, we will cover the beginning of:

1. Kripke logics
2. dynamic logics
[LCS, chapt 6]: binary decision diagrams

Time permitting, we will cover:

1. binary decision diagrams (BDD)
2. mu-calculus and relational mu-calculus