

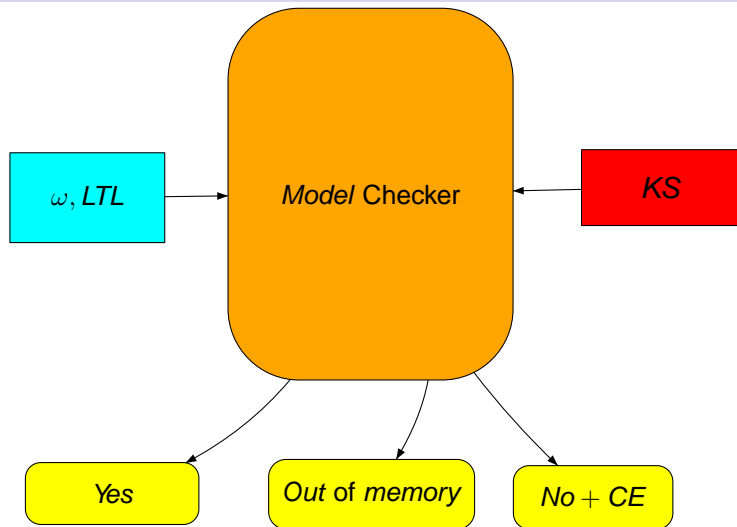
# A Two Step Perspective for Kripke Structure Reduction

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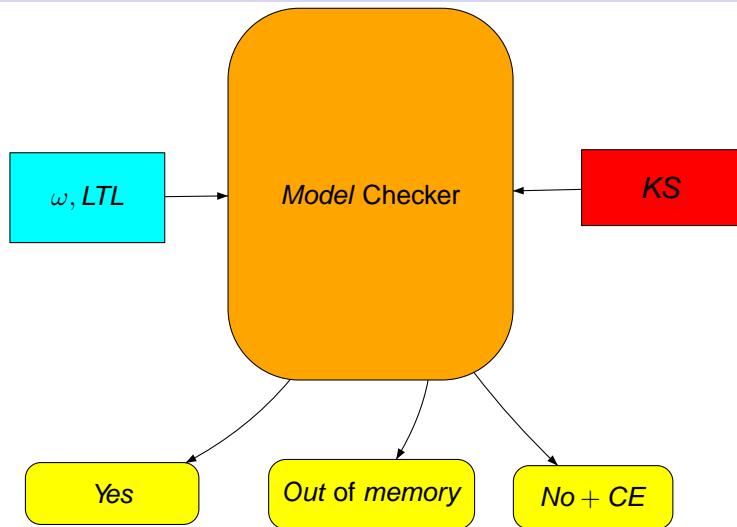
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# Motivation - Model checking

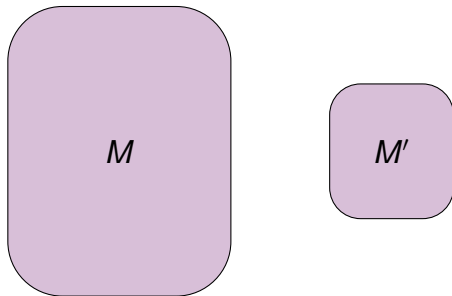


# Motivation - Model checking

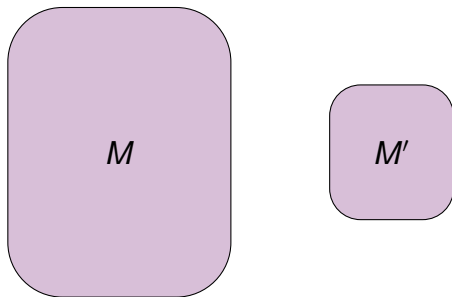


**Problem = State Space Explosion**

# Motivation - Behavioral Equivalence



## Motivation - Behavioral Equivalence



***Do they possess the same behavioral properties?***

# Kripke Minimization Equivalence (KME)

## Main Results

- Structural definition of KME.
- Quotient system under KME.
- Strictly coarser than bisimulation.
- Preservation of linear-time ( $\omega$ -regular) properties.
- Compositional w.r.t. synchronous composition.

# Weak Kripke Minimization Equivalence (WKME)

## Main Results

- Structural definition of WKME.
- Quotient system under WKME.
- Strictly coarser than divergence-sensitive stutter bisimulation.
- Preservation of stutter-insensitive linear-time ( $\omega$ -regular) properties.

**Thank You**