Lab Intro

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- Example of a model…

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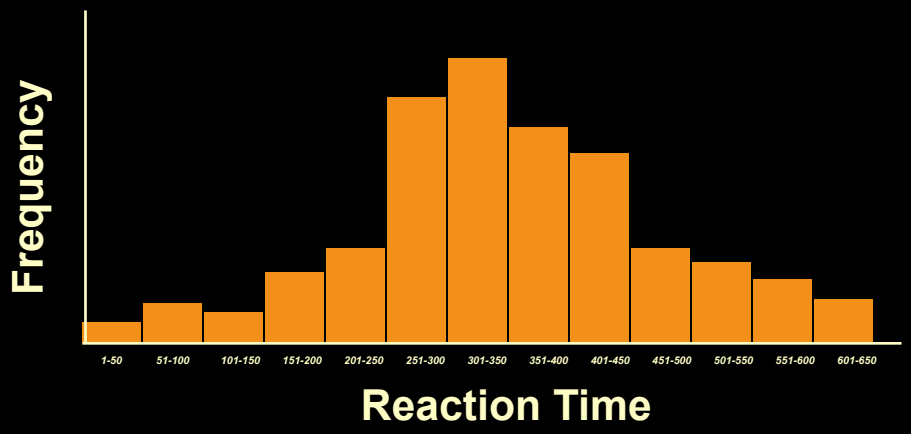

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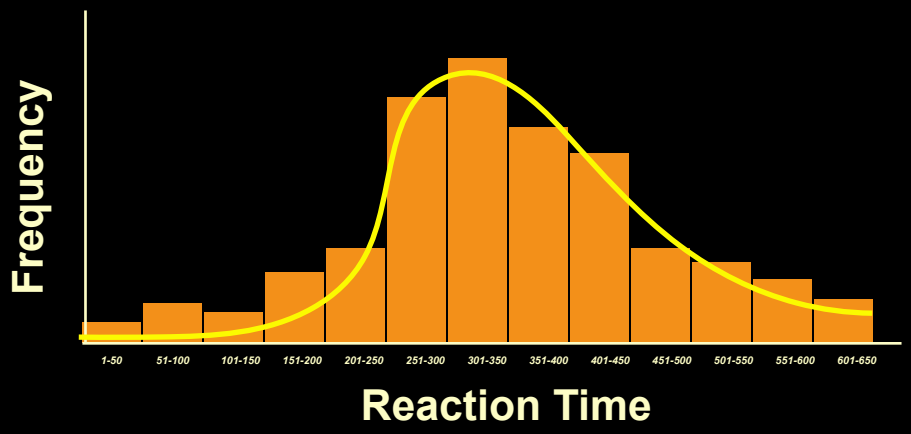

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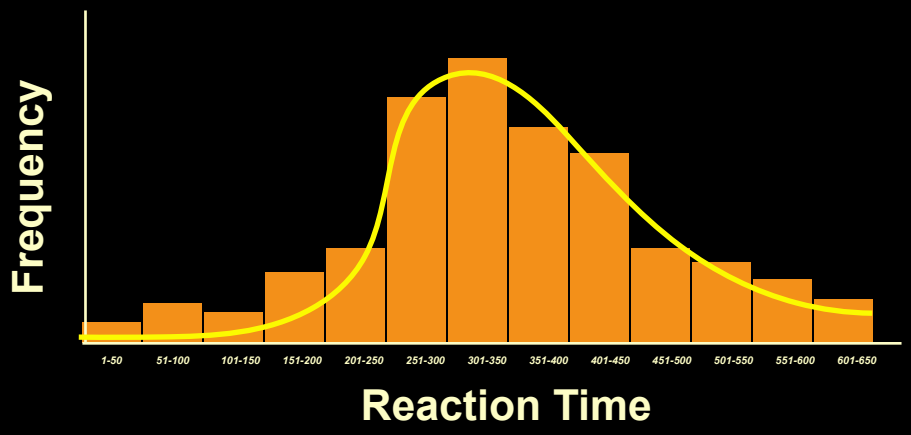

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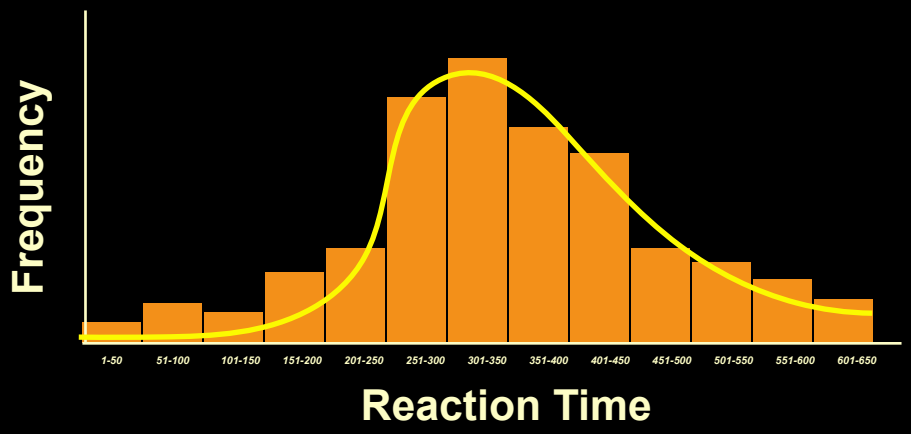

why??

- **Phenonema in search of a theory / model**

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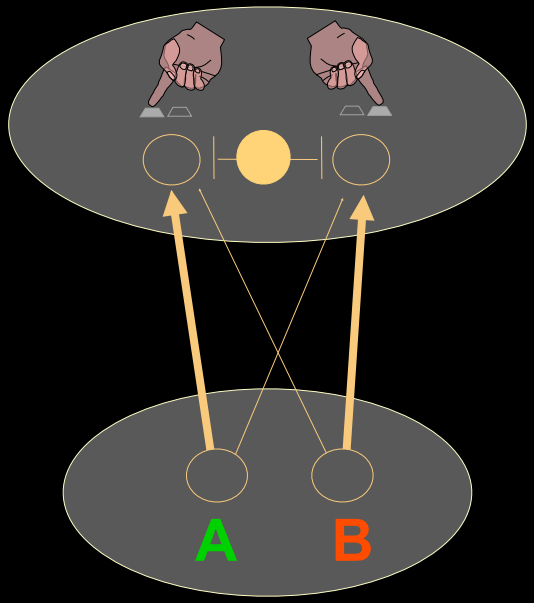
  - **record:**
    - **# of time-steps that occurred = *reaction time***
    - **which response unit crossed the threshold = *accuracy***

Simulation of a Simple Task



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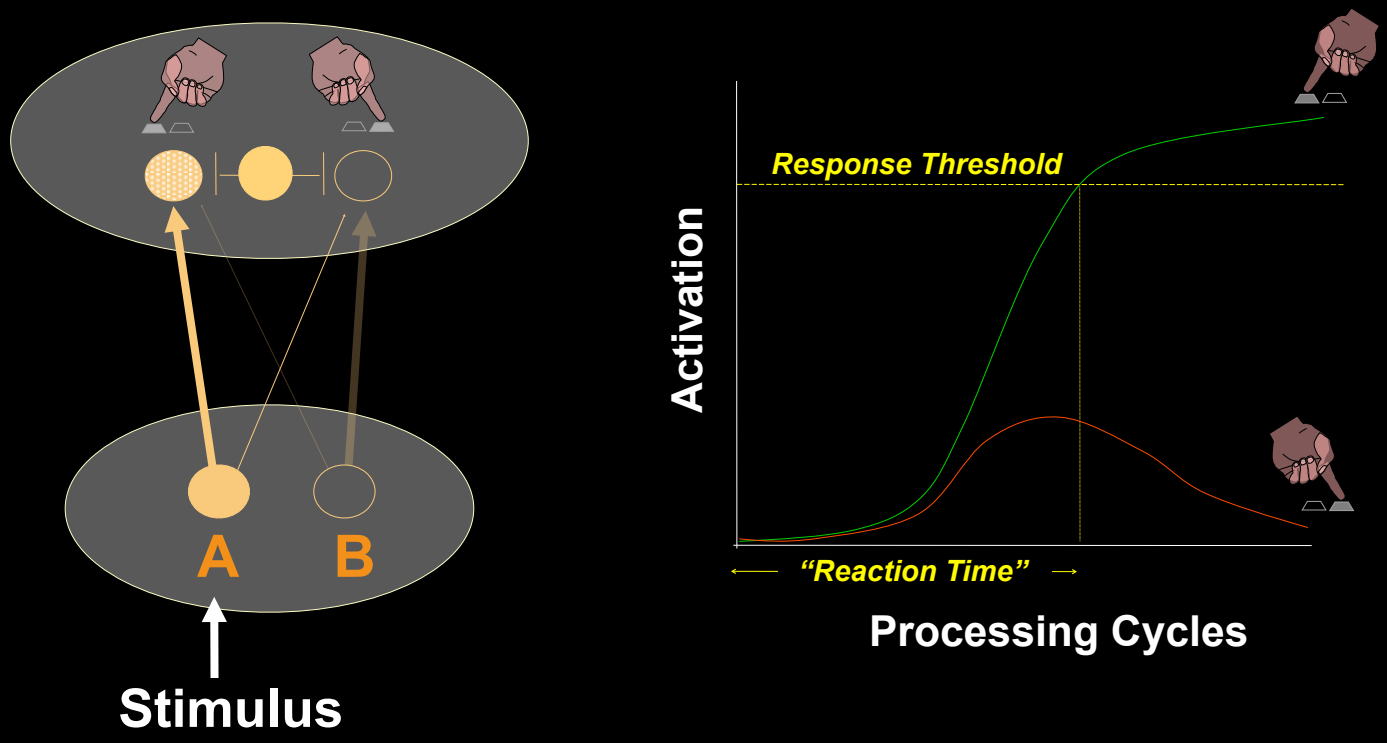

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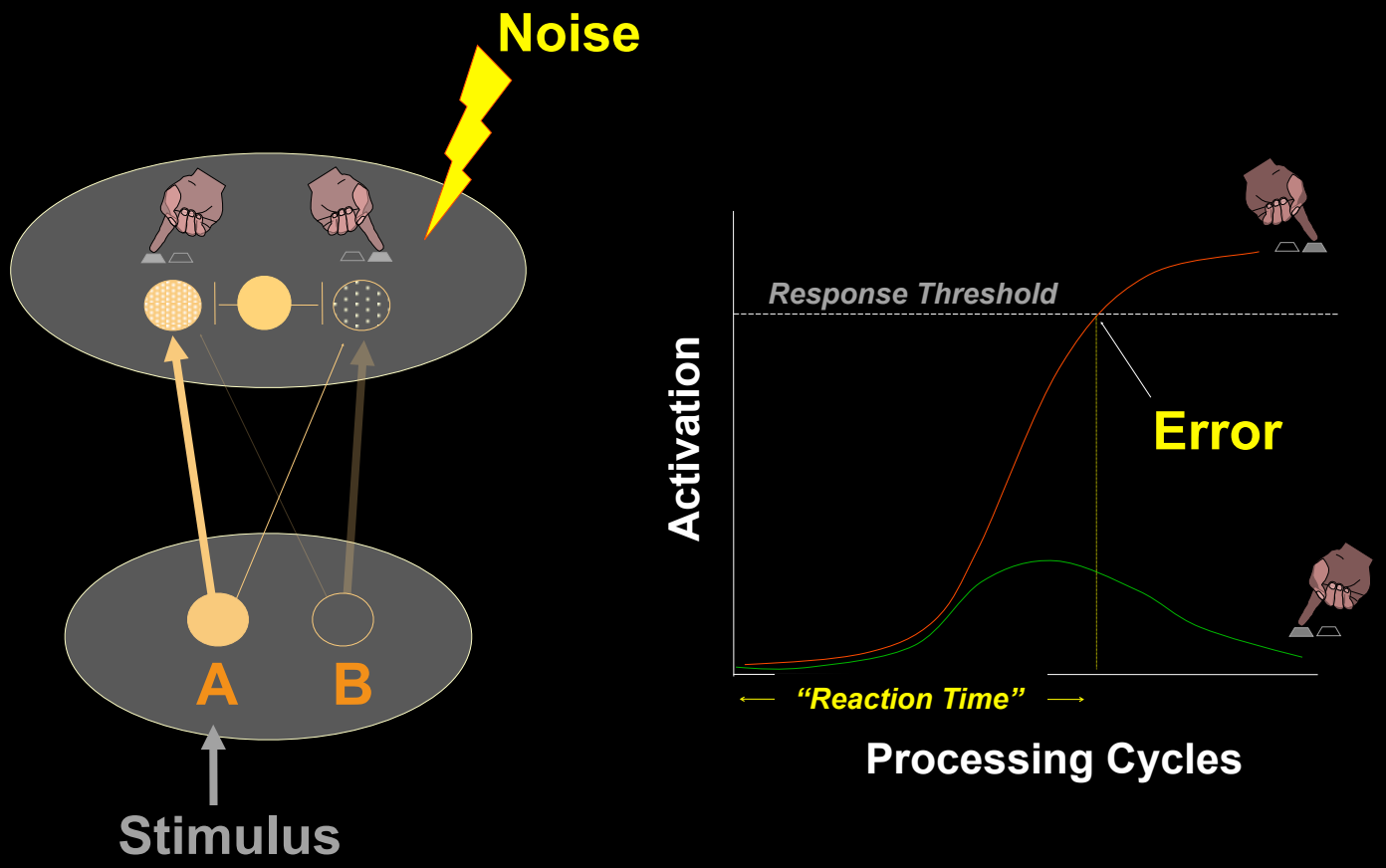

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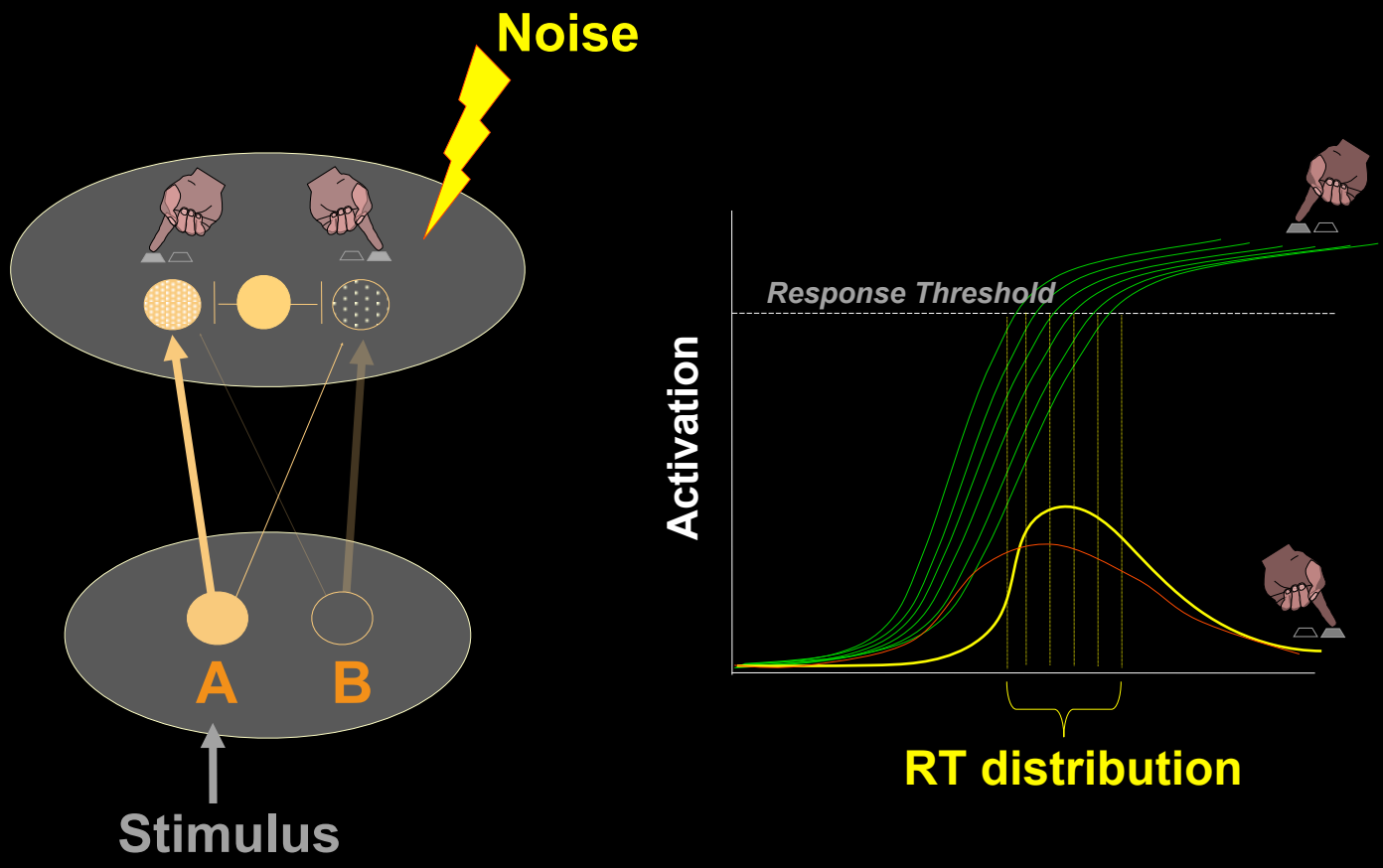

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- **Accumulation to bound / integration theory of decision making**

  We'll come to this later in the course

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  - **provide a language for clear and precise communication**

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  - too many degrees of freedom (can explain anything)
  - different model of each different phenomenon

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- **Satisfy your curiosity…**
  but be ready for surprise!

A Block Modeling System for Cognitive Neuroscience

Purpose

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- Provide a language for implementing models of mind/brain function that is accessible to cognitive, brain, and computer scientists

Purpose

- Smallest number of "commitments," that reflect fundamental principles of how the mind/brain is organized and functions without committing to any *particular* model or theory

Purpose

- Allow models/theories to be expressed in as flexible a way as possible

Purpose

- Provide a common framework for model sharing, integration and documentation

PsyNeuLink

PsyNeuLink

- Python-based

PsyNeuLink

- Tutorial and documentation

PsyNeuLink

- Object-oriented, “declarative” (vs. functional, “procedural”) programming language:

PsyNeuLink

Think as much about *what* as *how*

PsyNeuLink

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  - function
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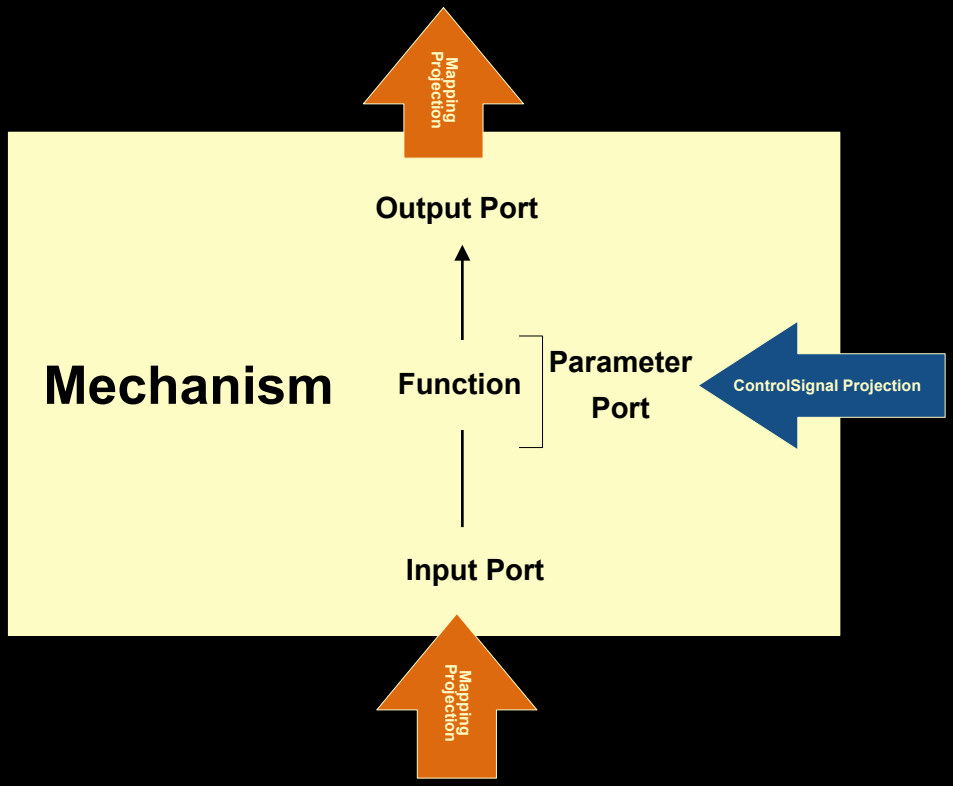
- Multiple styles/granularities of representation and computation:
  - biophysical vs. connectionist (PDP) vs. symbolic
  - mathematical vs. numerical

Cog Neuro Lego



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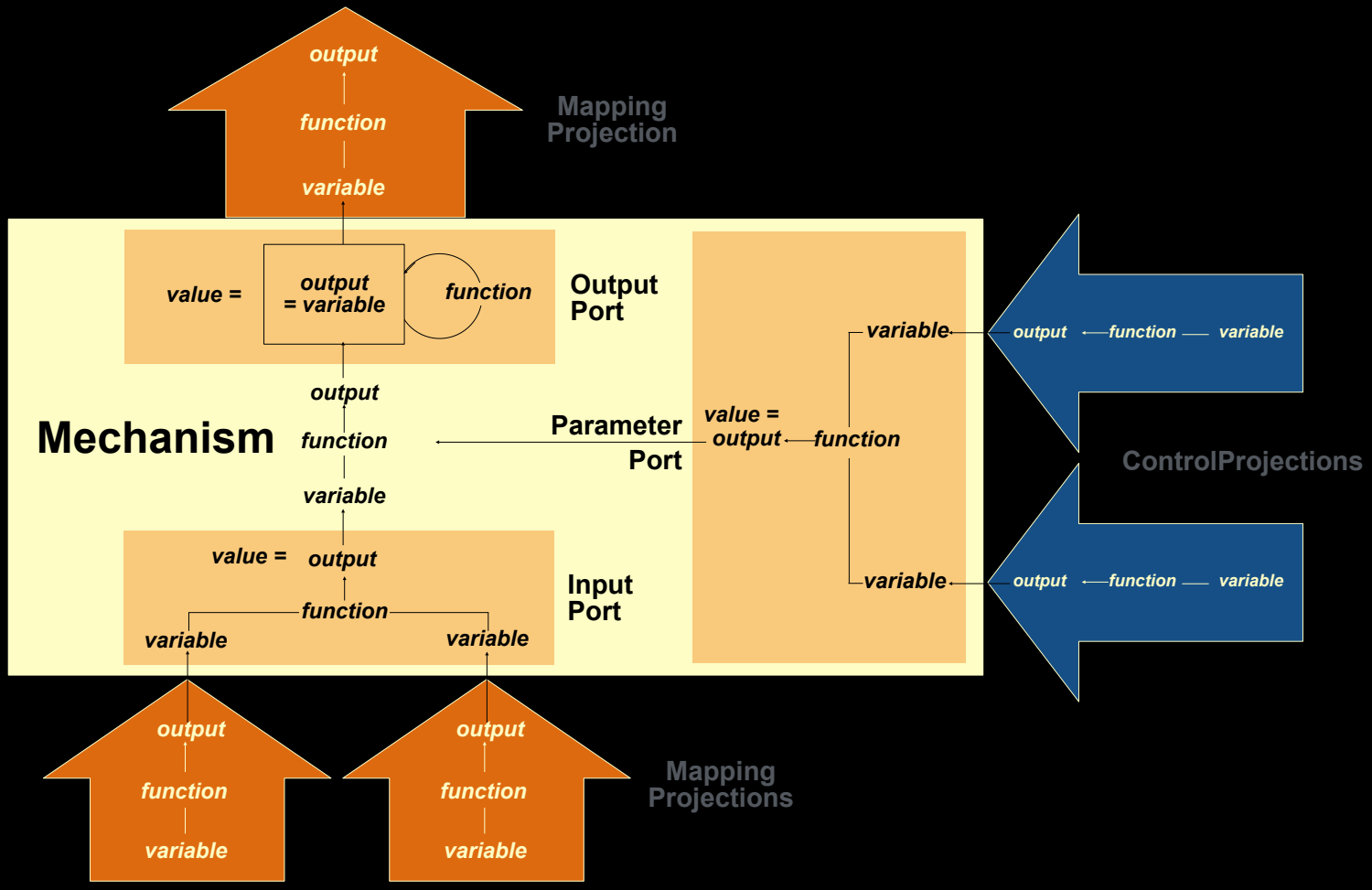

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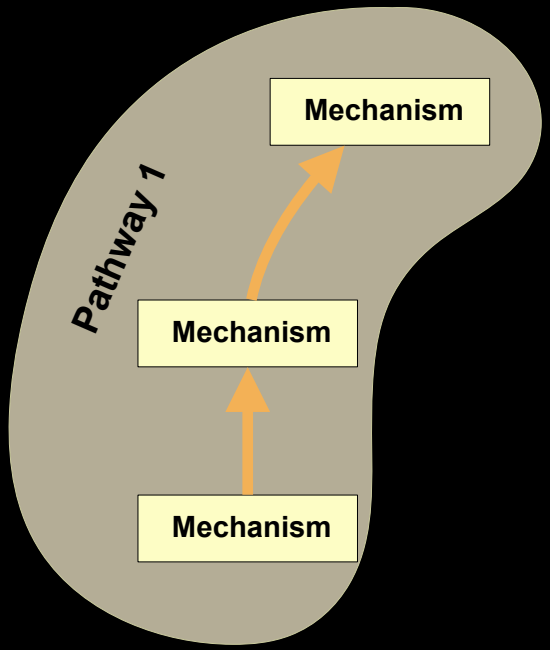

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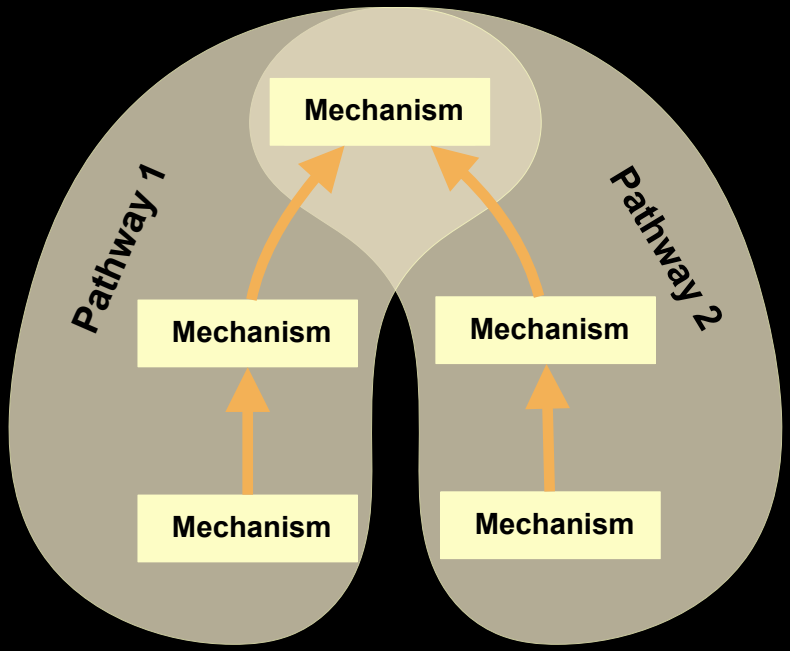

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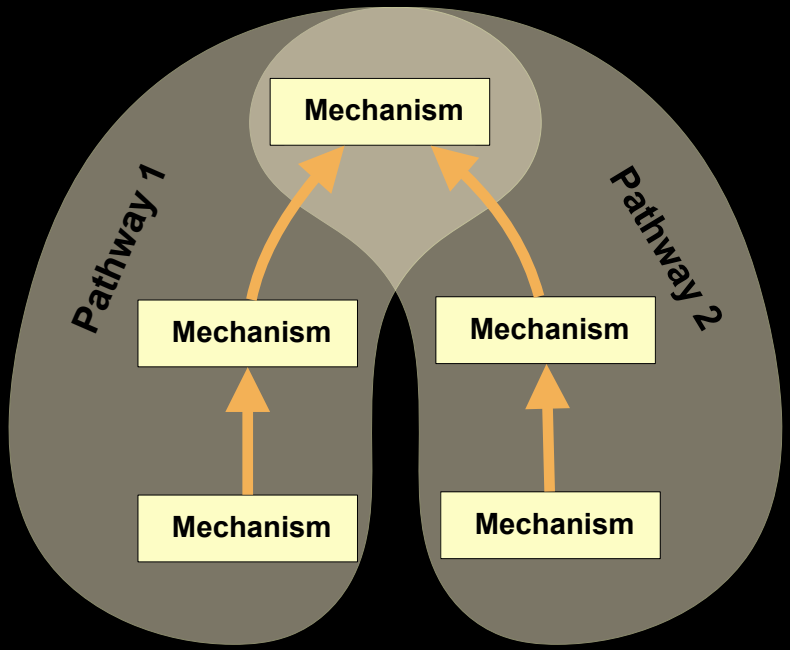

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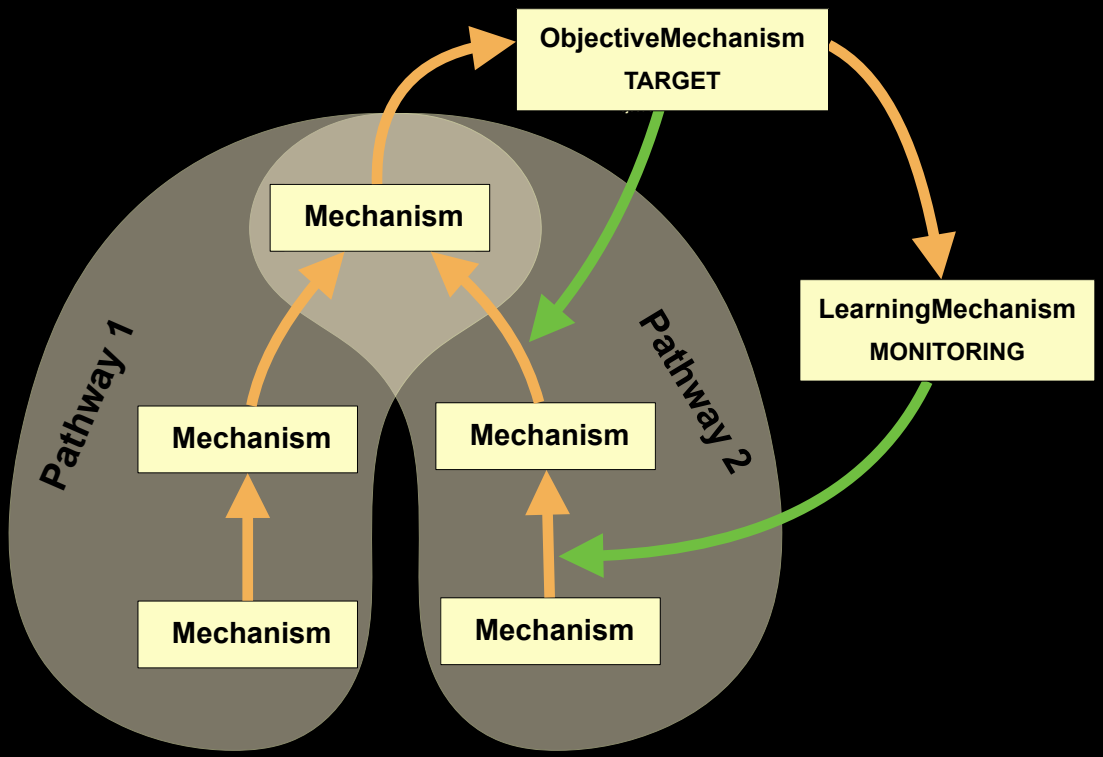

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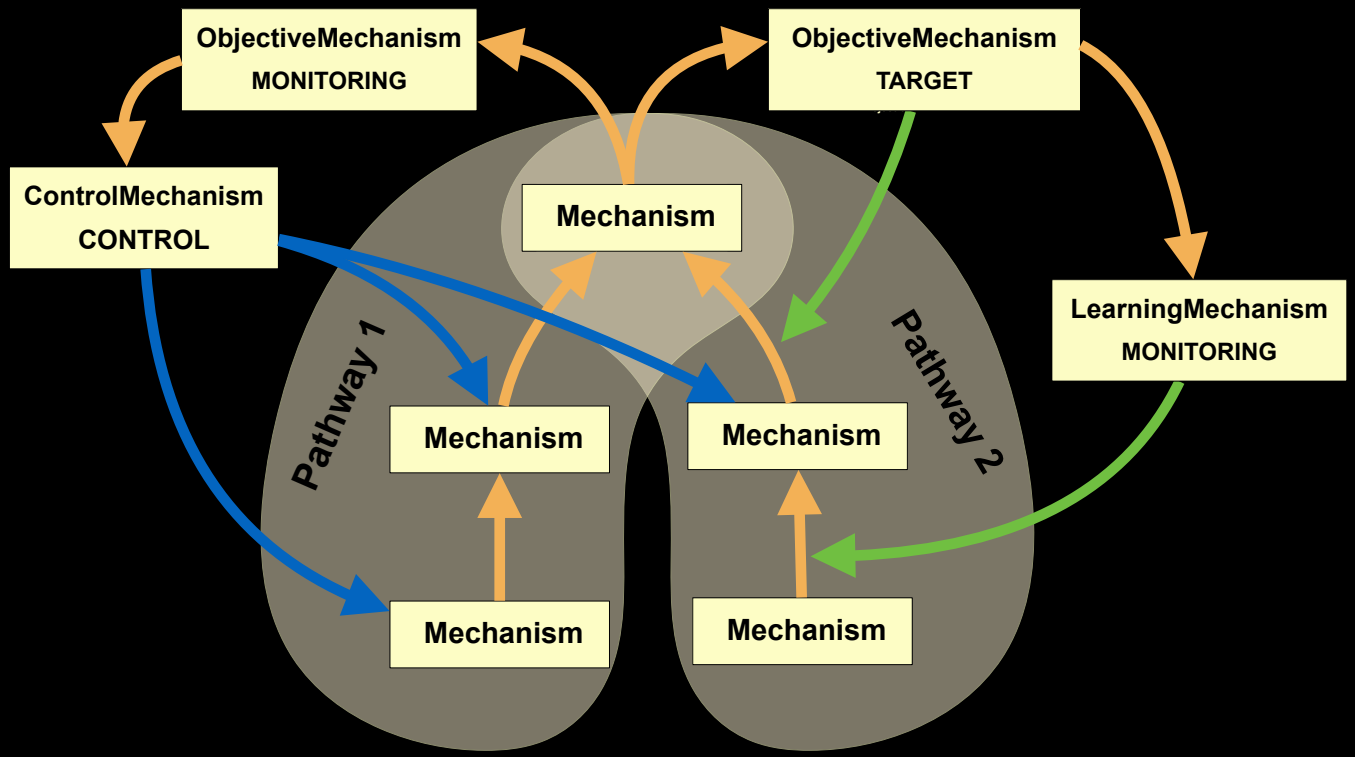

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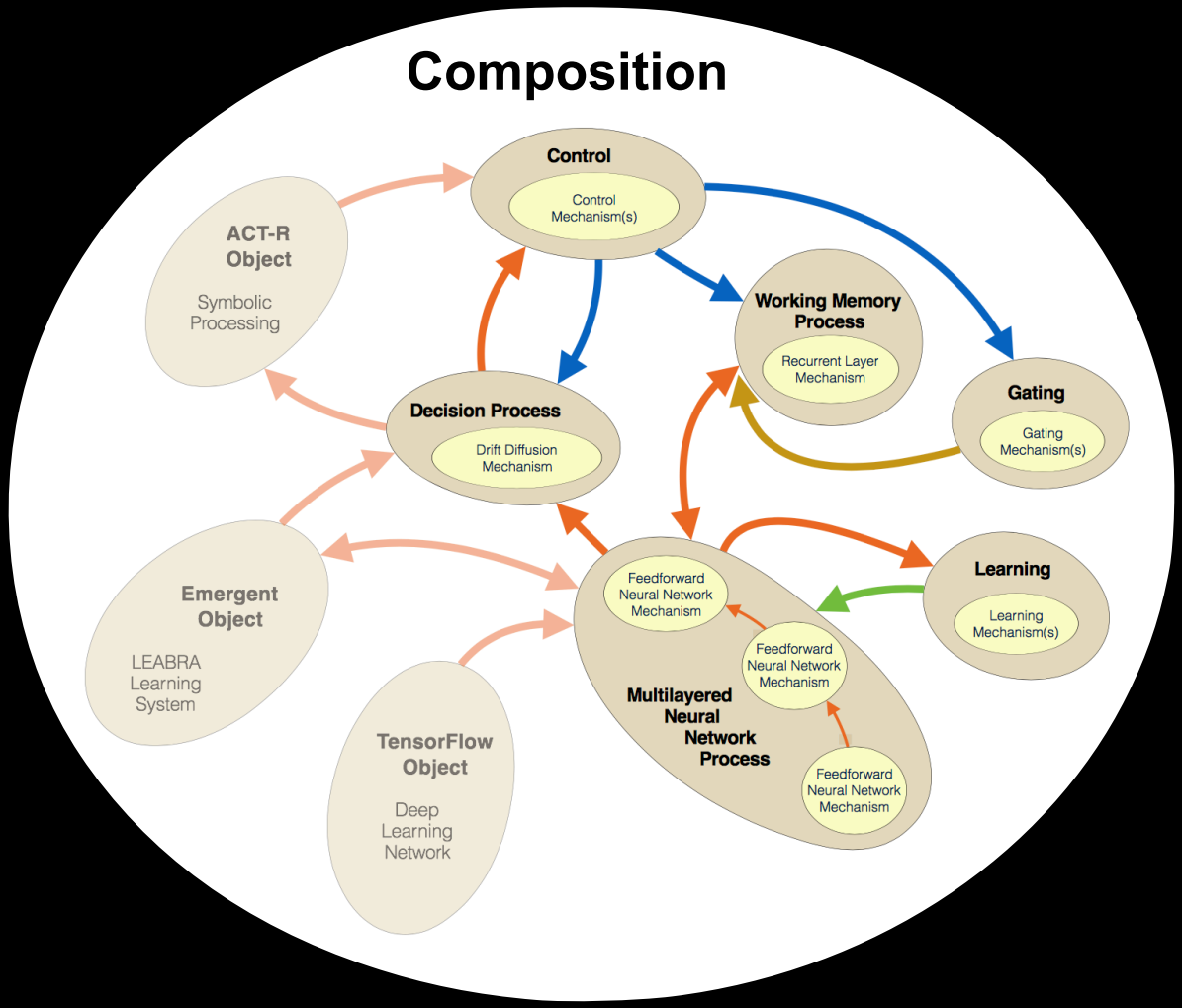

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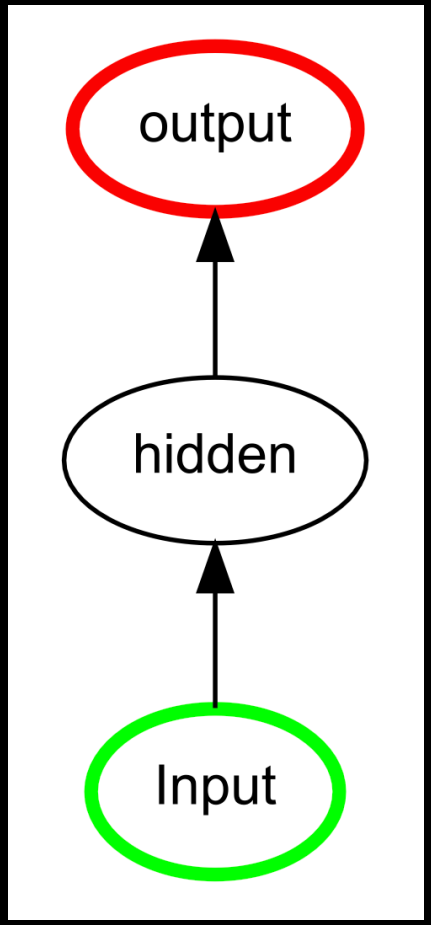

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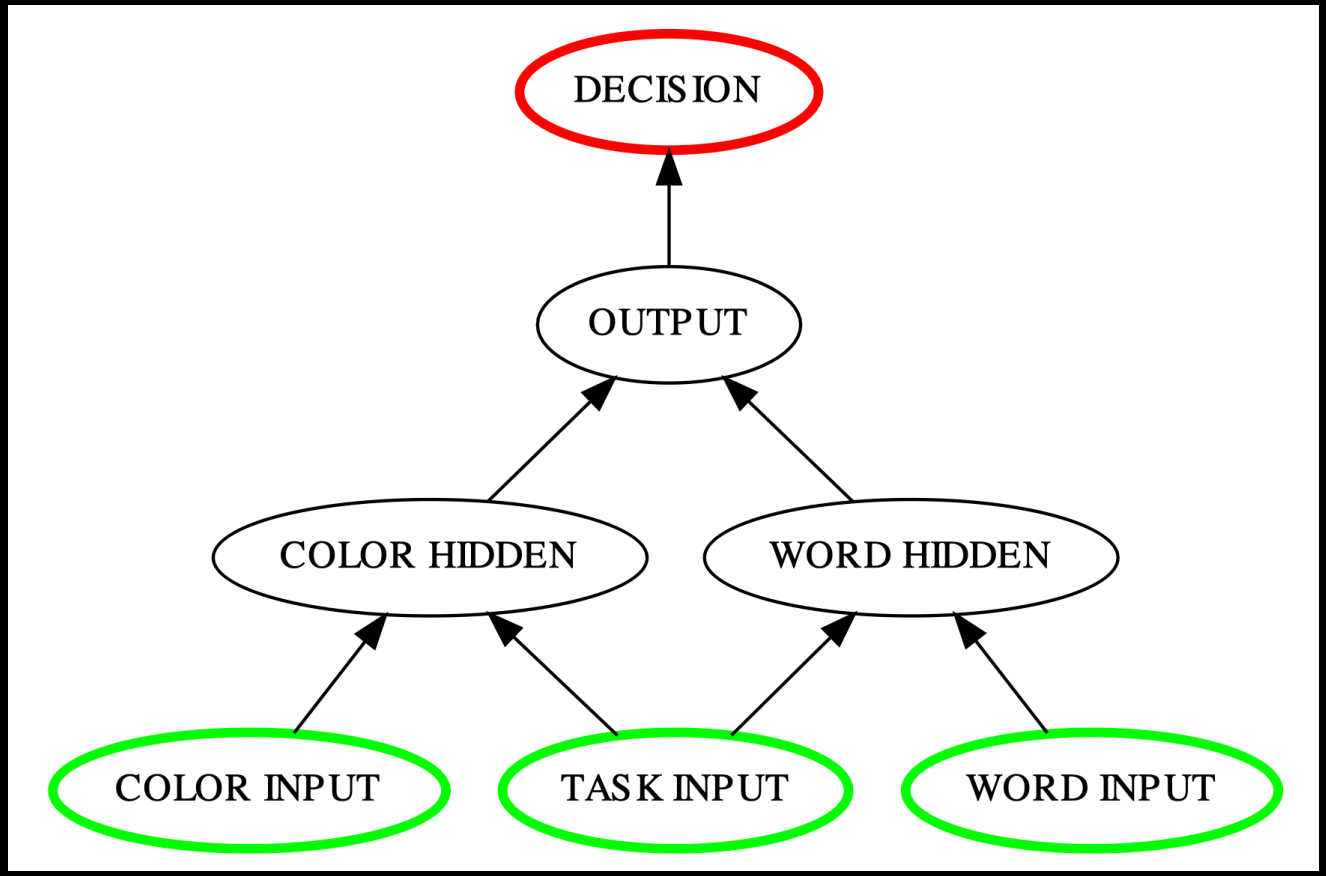

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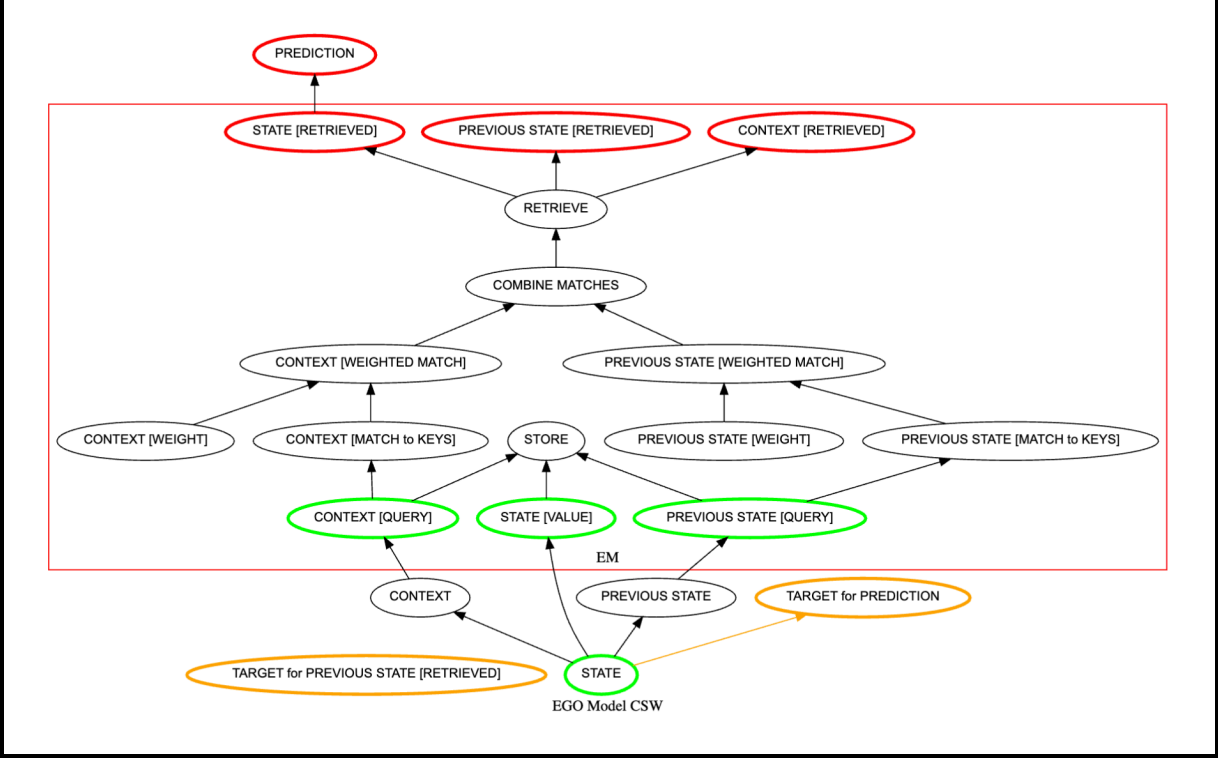

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