Exercise 1

Maik Schünemann

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Outline

Design and Implementation of a simple cognitive architecture

For the given problem of processing visual stimuli we designed the following cognitive architecture:

Components and Processes

To be able to process visual stimuli we need the following components:

- Perceptual System Responsibilities:
  - Build a model of the visual stimuli suitable to further processing.
  - Build a model of the given task
- Strategical System Responsibilities:
  - Models the thinking process
  - Designs a strategy of how to approach the problem
- Processing System Responsibilities:
  - Executes the chosen strategy
  - Stores results in the memory system
- Memory System Responsibilities:

Examples:

We will demonstrate the examples live during the presentation of the assignment. For the examples, we chosed small arrays as inputs for our system. We simulate the behaviour of running out of time by adding timeouts to the executer

1

Picture: [[#{:blue :square} #{:red :hexagon} #{:yellow :circle} #{:yellow :triangle}] [#{} #{:blue :square} #{:blue :square}#{:blue :square}]])
Search for: blue square
Answer: 4
If the available time is enough the system will, of course, give the right answer. With the simple strategy, the system will return the number of matching items seen so far, so if it had only time to look at the first item, it will return 1

2

Picture [[#{:blue :square} #{:red :square} #{:yellow :square} #{:yellow :square}] [#{} #{:blue :square} #{:blue :square}