

Modelling Movement with Bigraphs

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12th September 2018

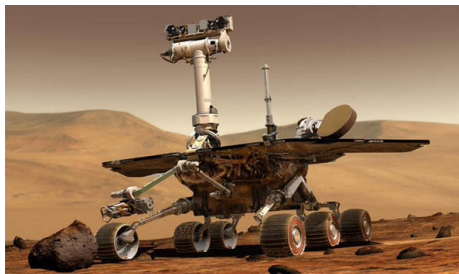
Motivation



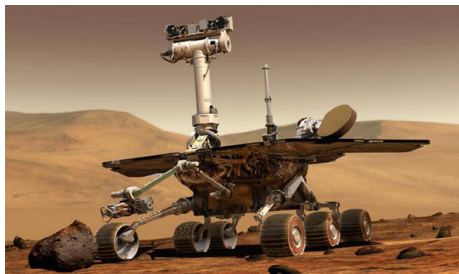
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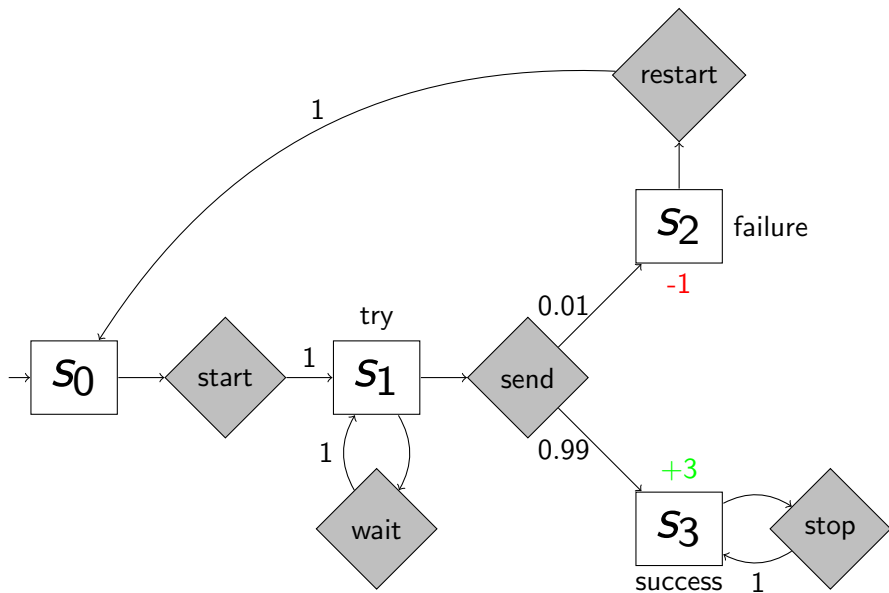
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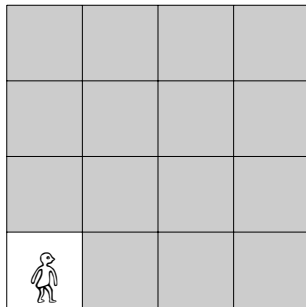
Markov Decision Process



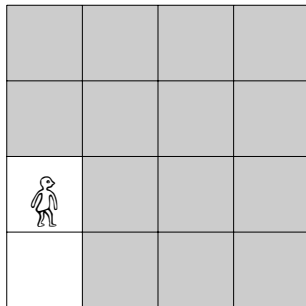
Collecting Objects in a Grid

- Each cell is either visited or unvisited.
- When entering an unvisited cell, with probability p the agent receives an object.
- Once a set number of objects is collected, the agent heads home.

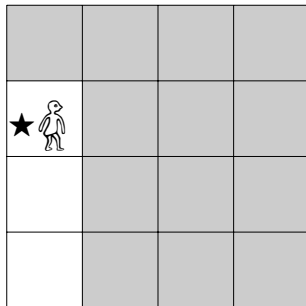
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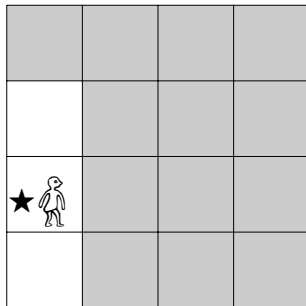
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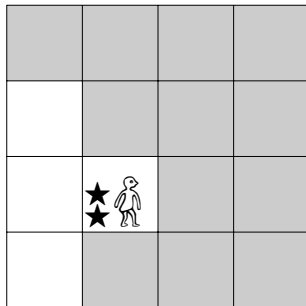
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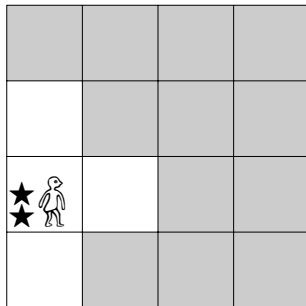
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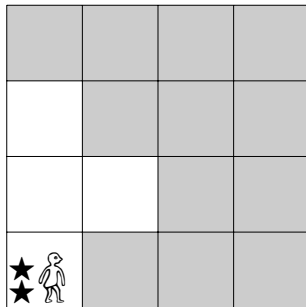
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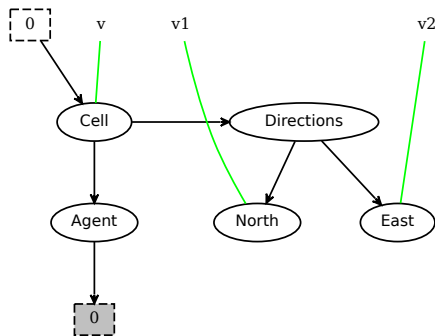
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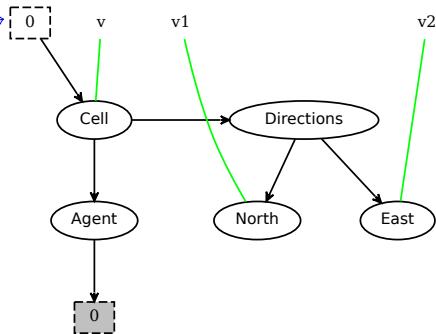


Bigraphs

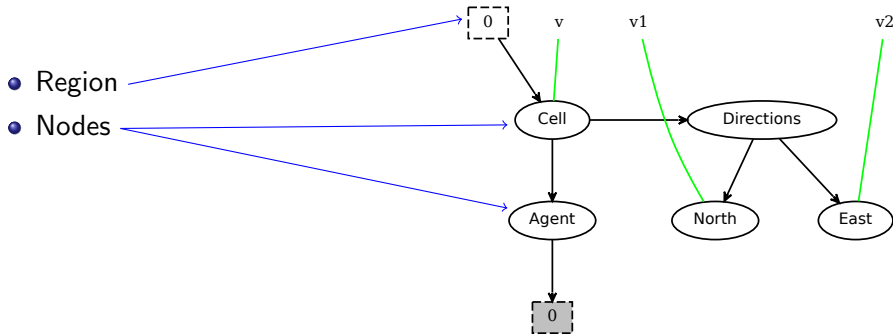


Bigraphs

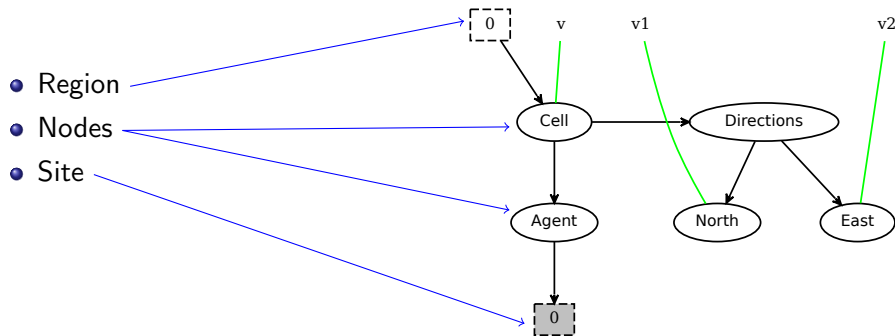
- Region



Bigraphs

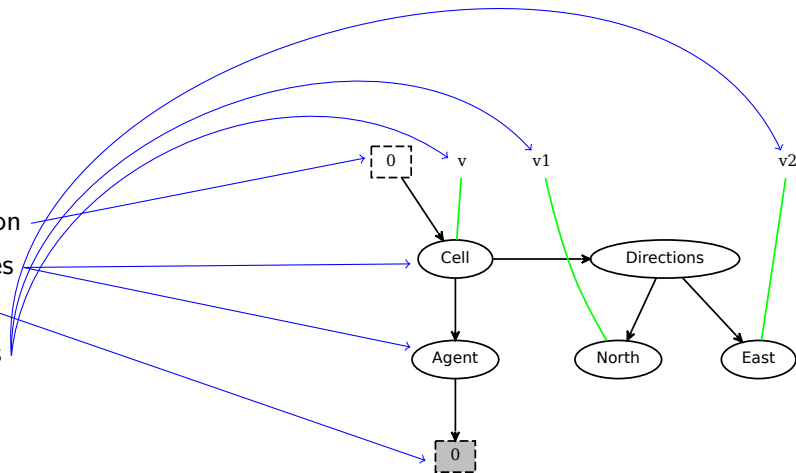


Bigraphs

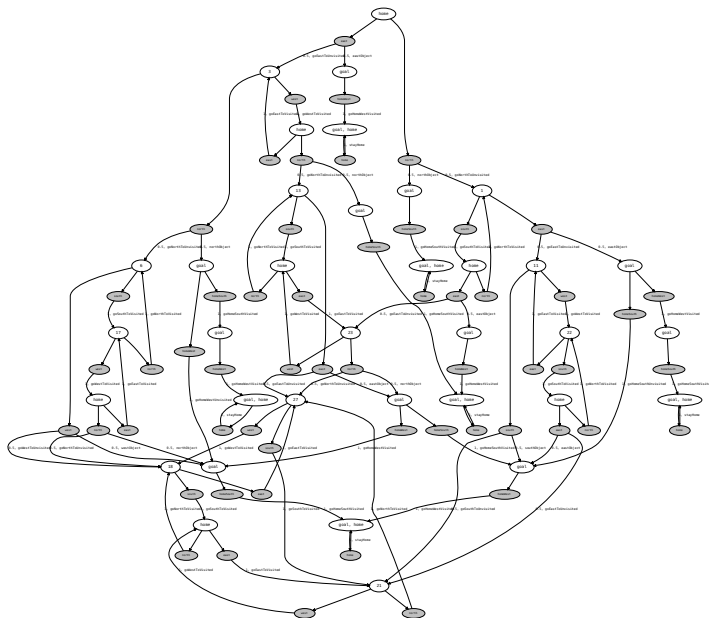


Bigraphs

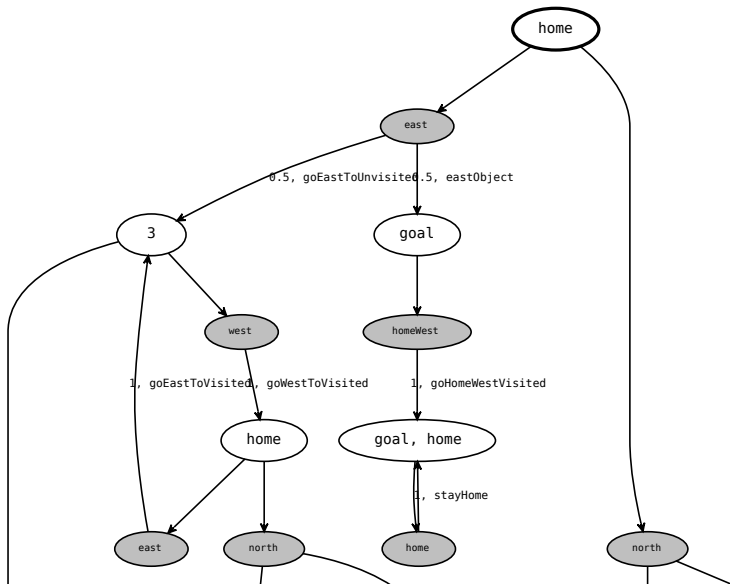
- Region
- Nodes
- Site
- Links



Transition System



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A Tale of Schrödinger's Wall...



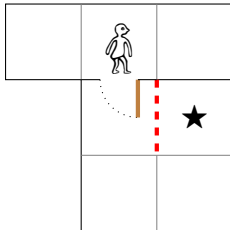
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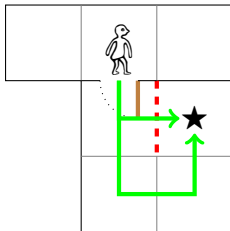
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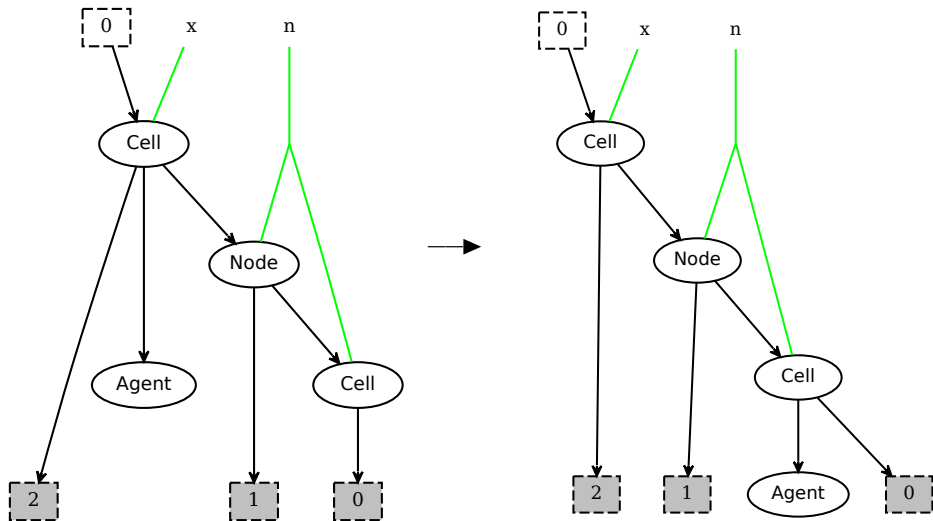
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Reaction Rules



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Thank You!