

Co-operative Co-evolution For Automated Platformer Design

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Imperial College, London**

ccg.doc.ic.ac.uk

Previously...

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- Can we automate videogame design?

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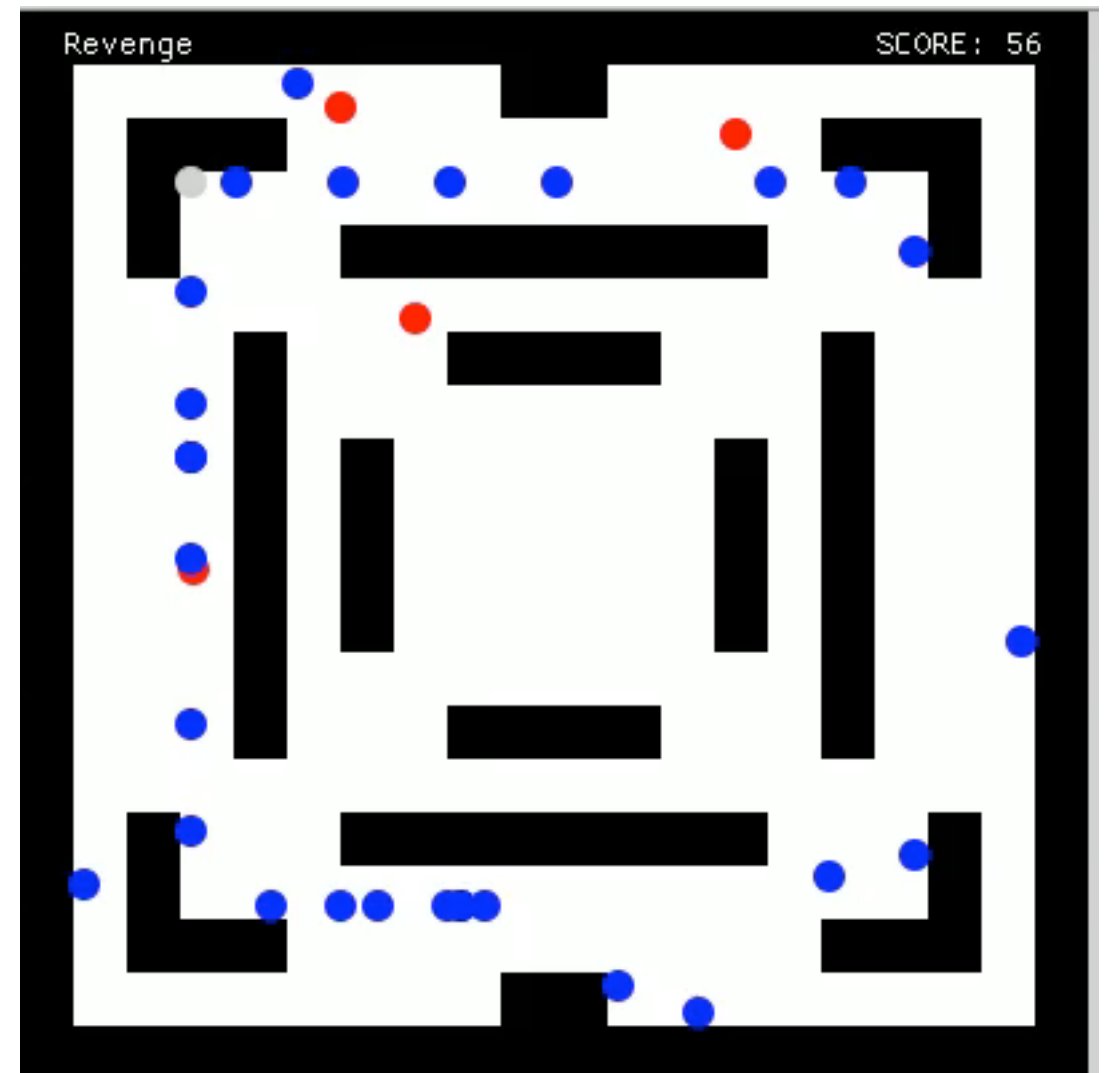
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- CIG 2011 - *Multifaceted Evolution of Simple Arcade Games*

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Metroidvania-style
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(www.bit.ly/newscigame)

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Get **player**
feedback to assess
game quality.



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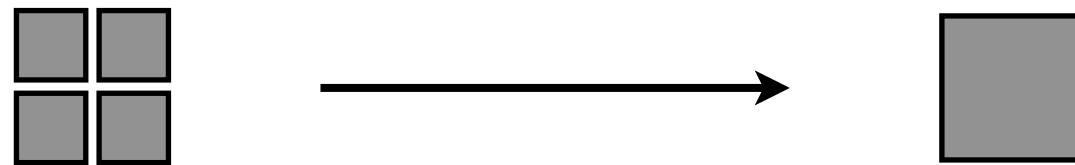
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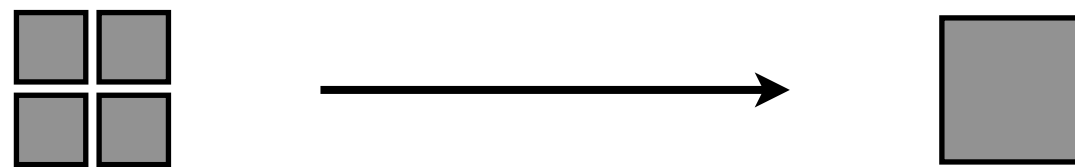
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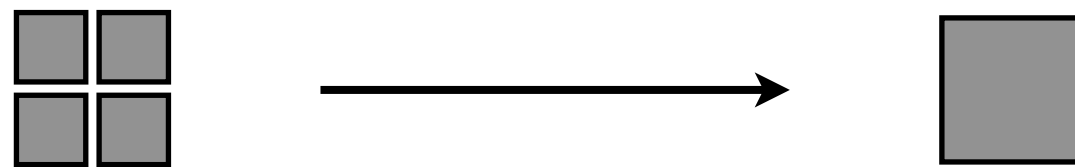
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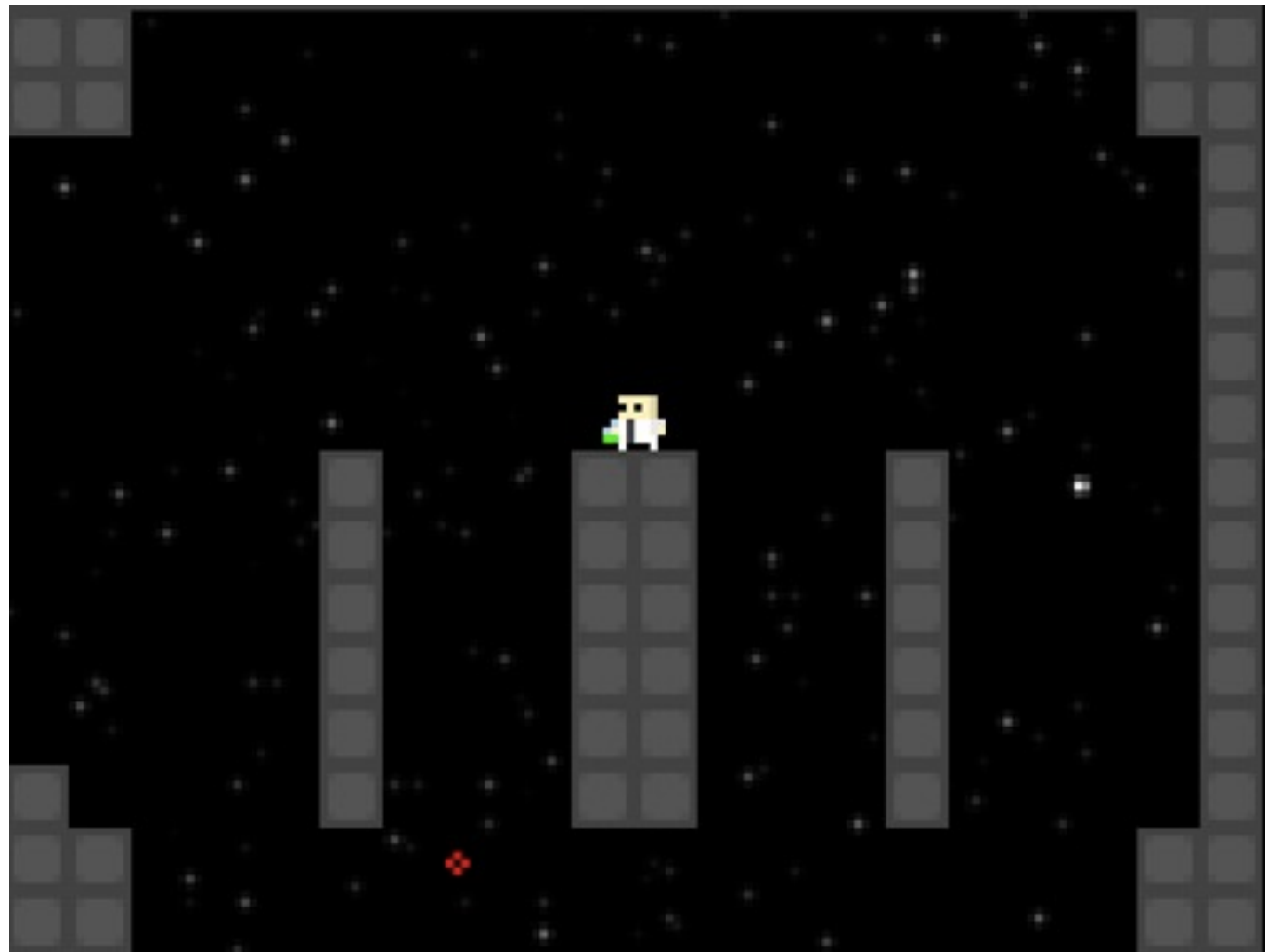
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- For ACCME - Maps, Powerup Sets, Layouts.

Maps



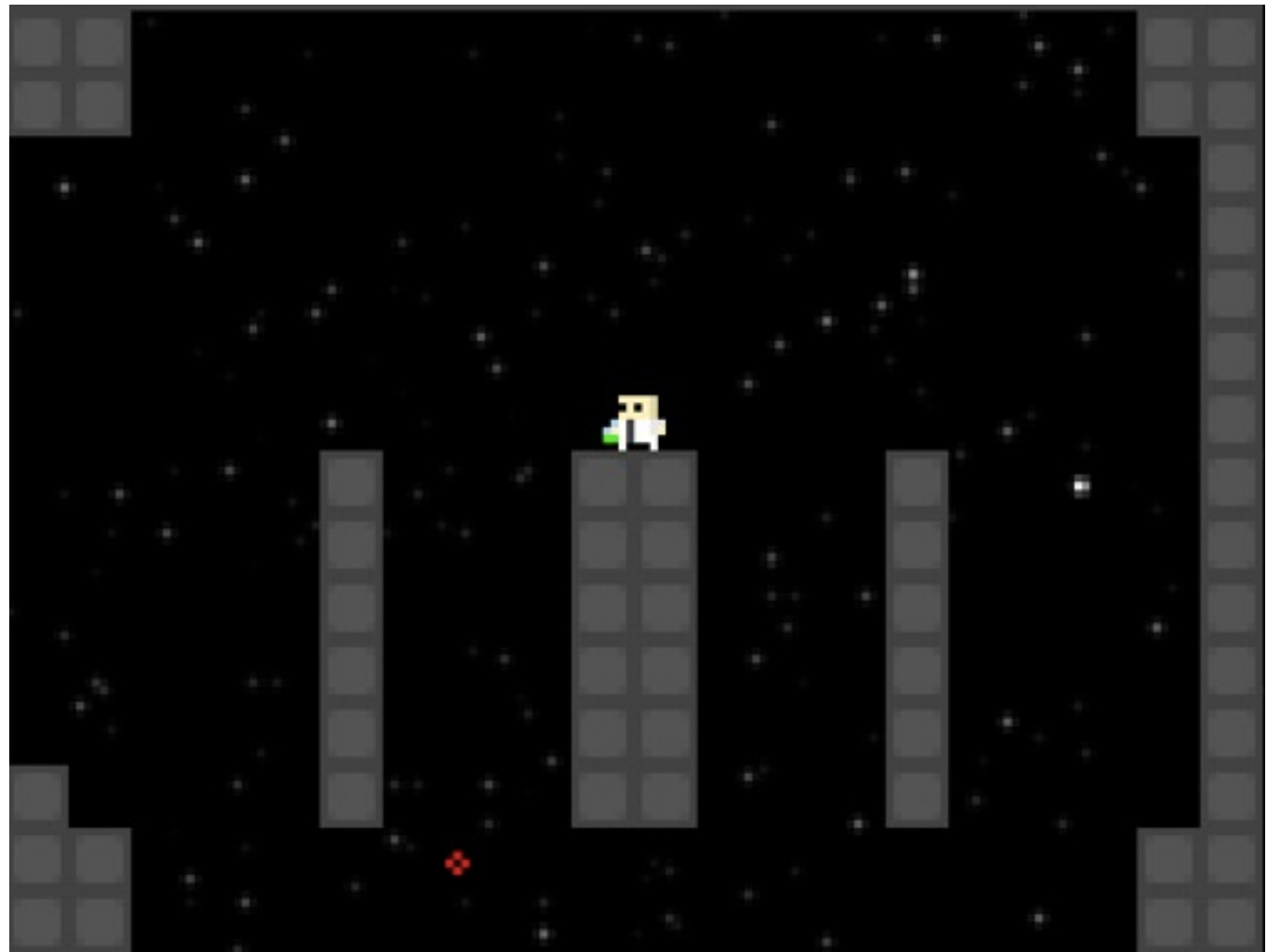
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- Central tile area used from a corpus of human-designed tiles.



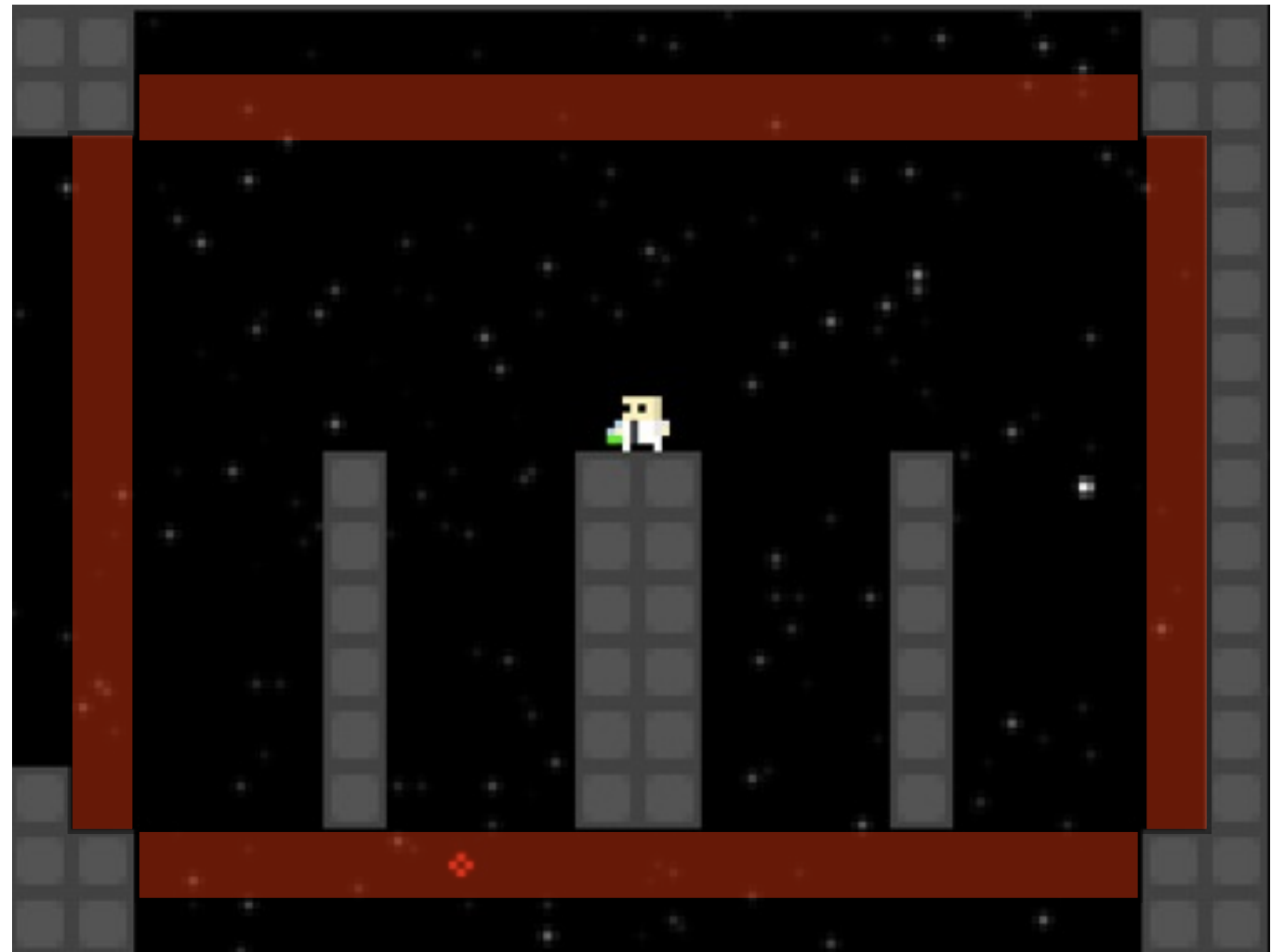
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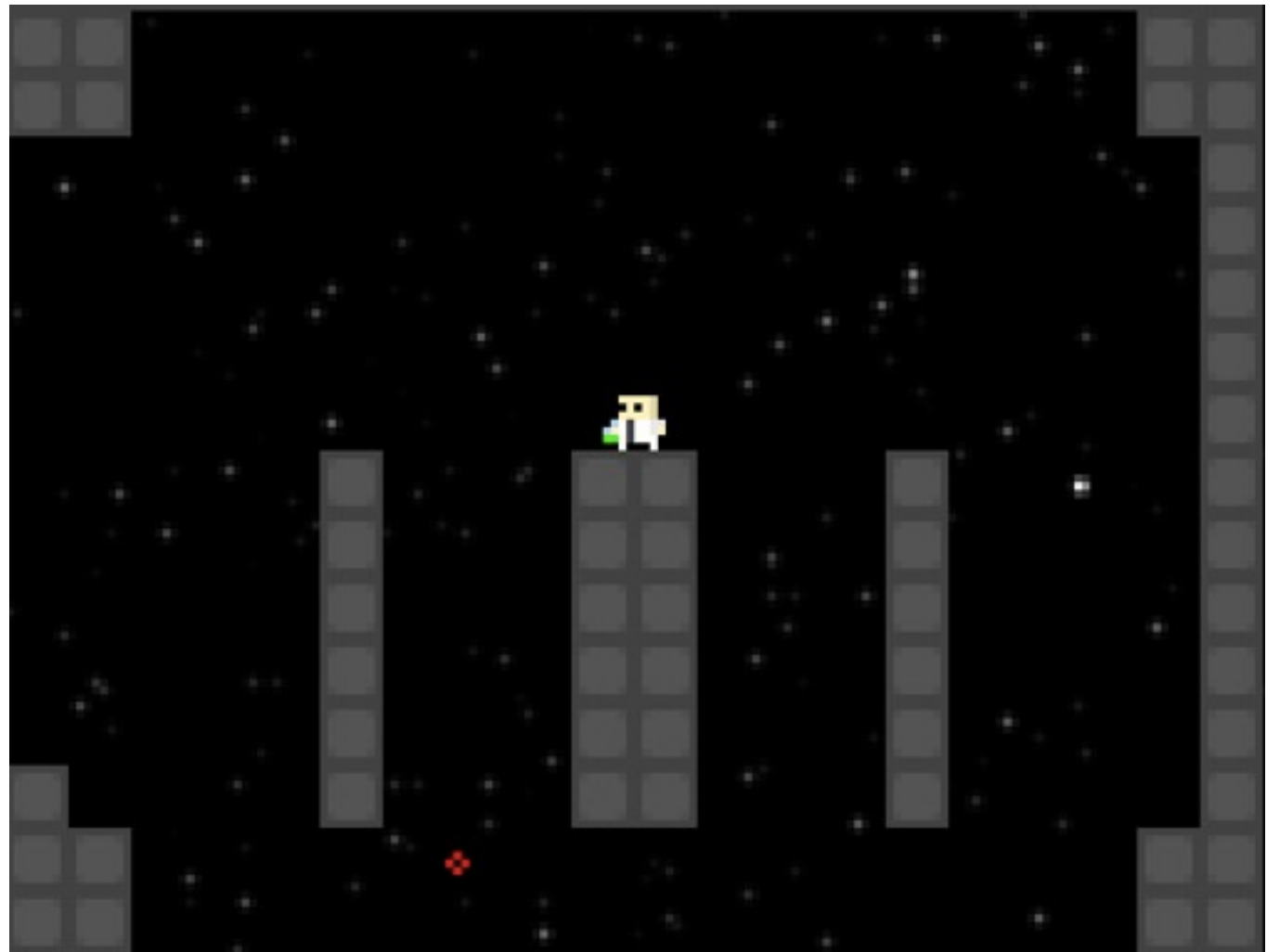
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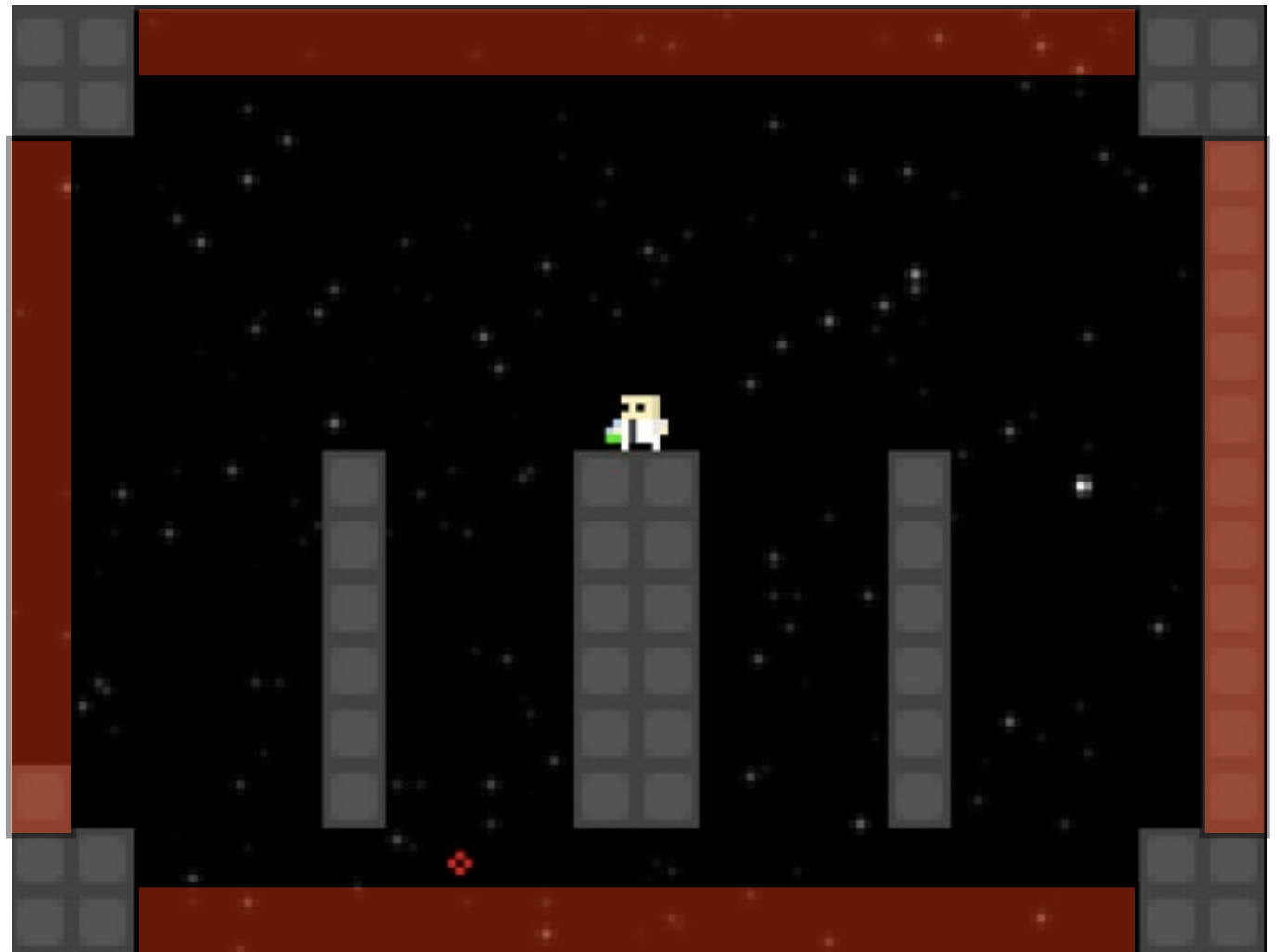
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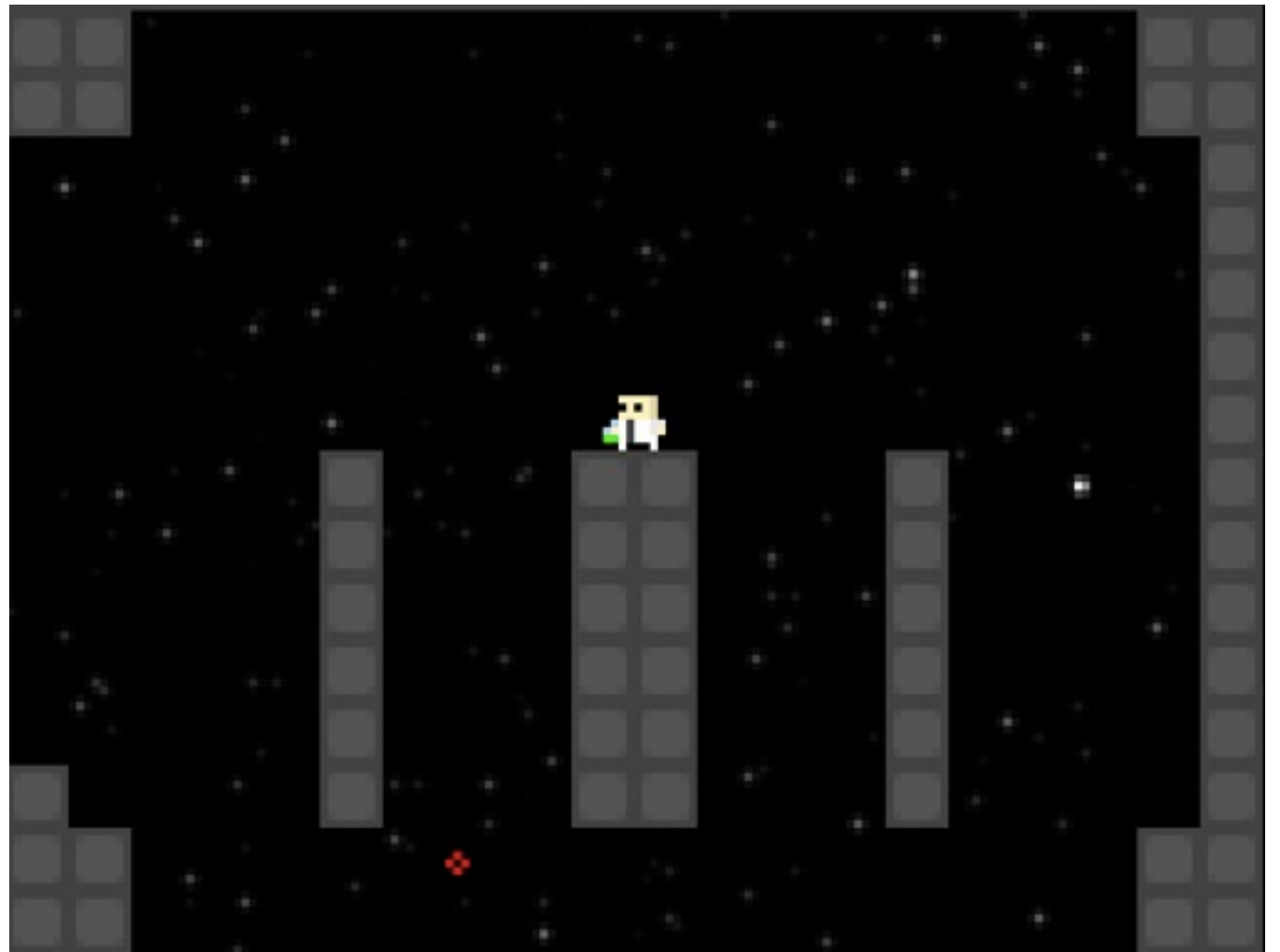
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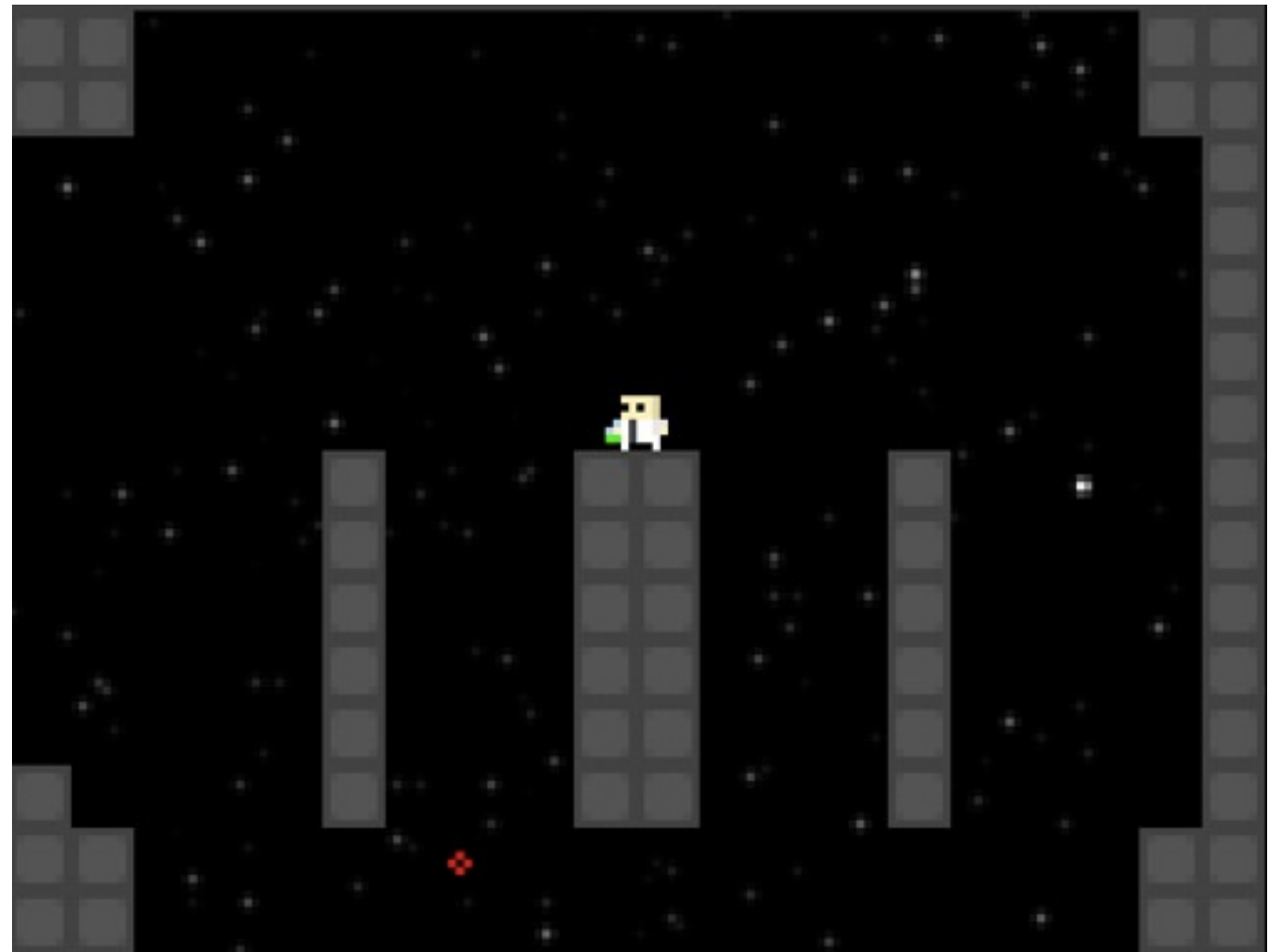
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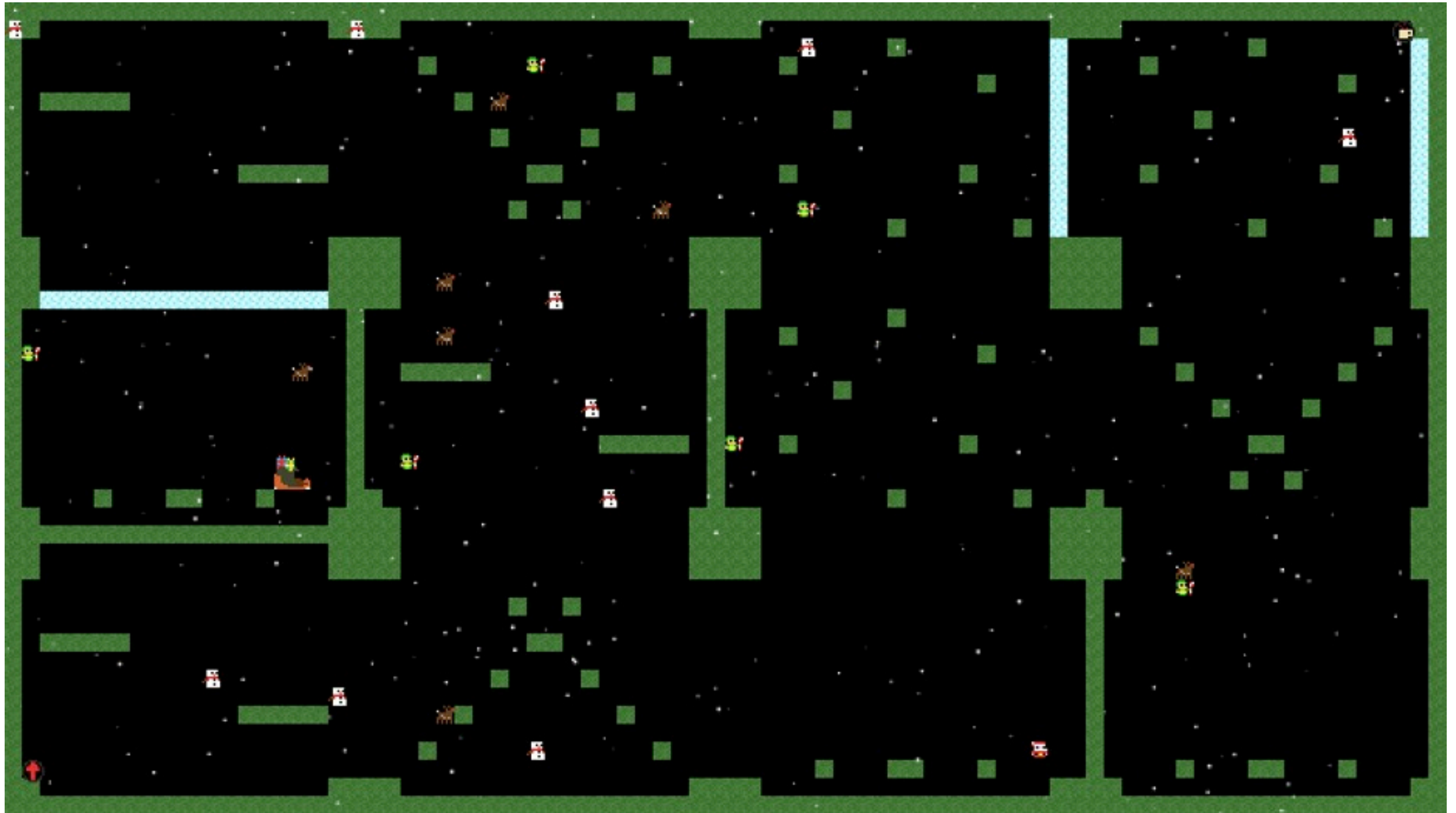


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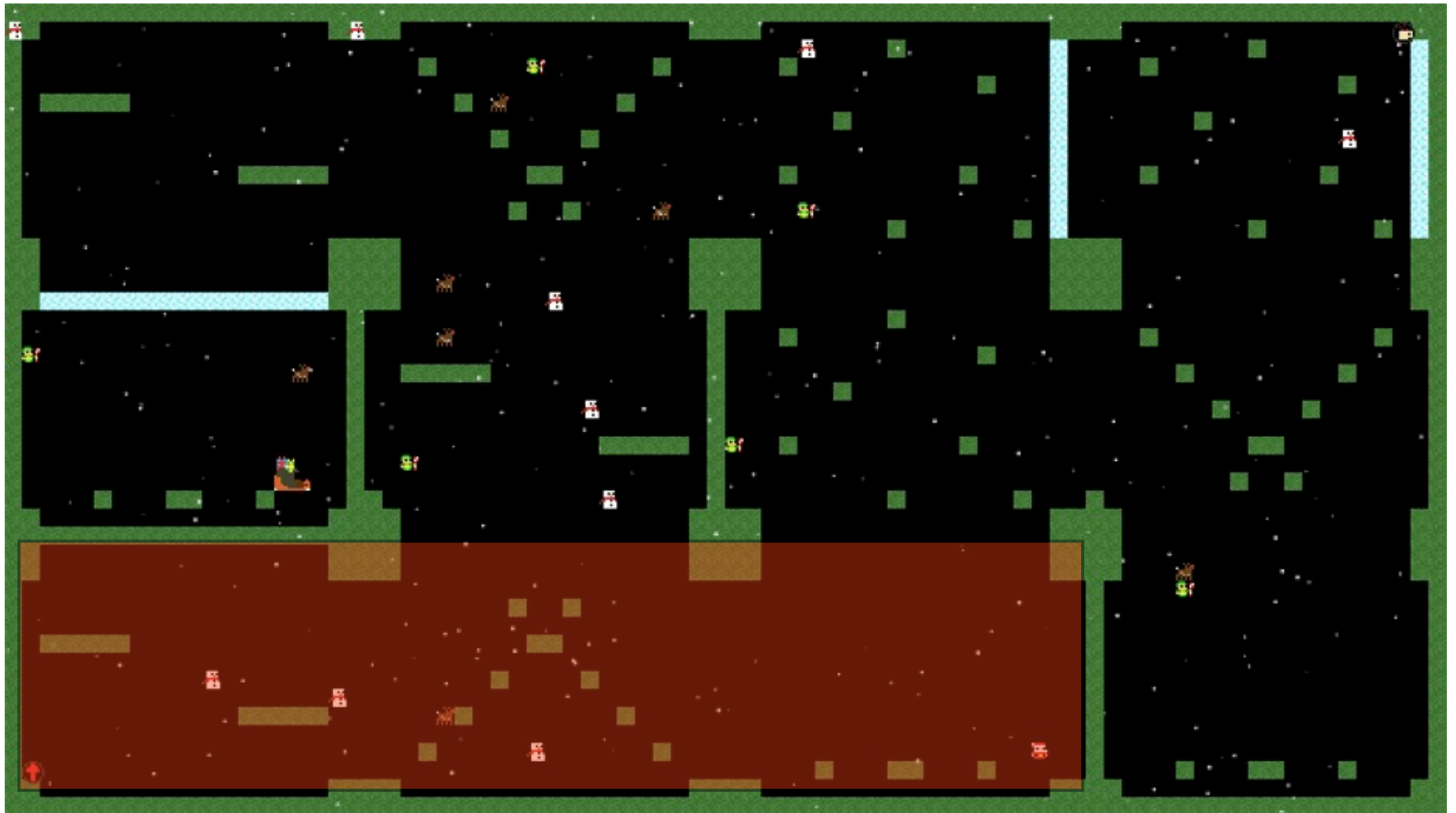
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- Outer edges can be blocked off or locked temporarily to guide game progression.
- Fitness of a map heavily tied in to **reachability traces**.



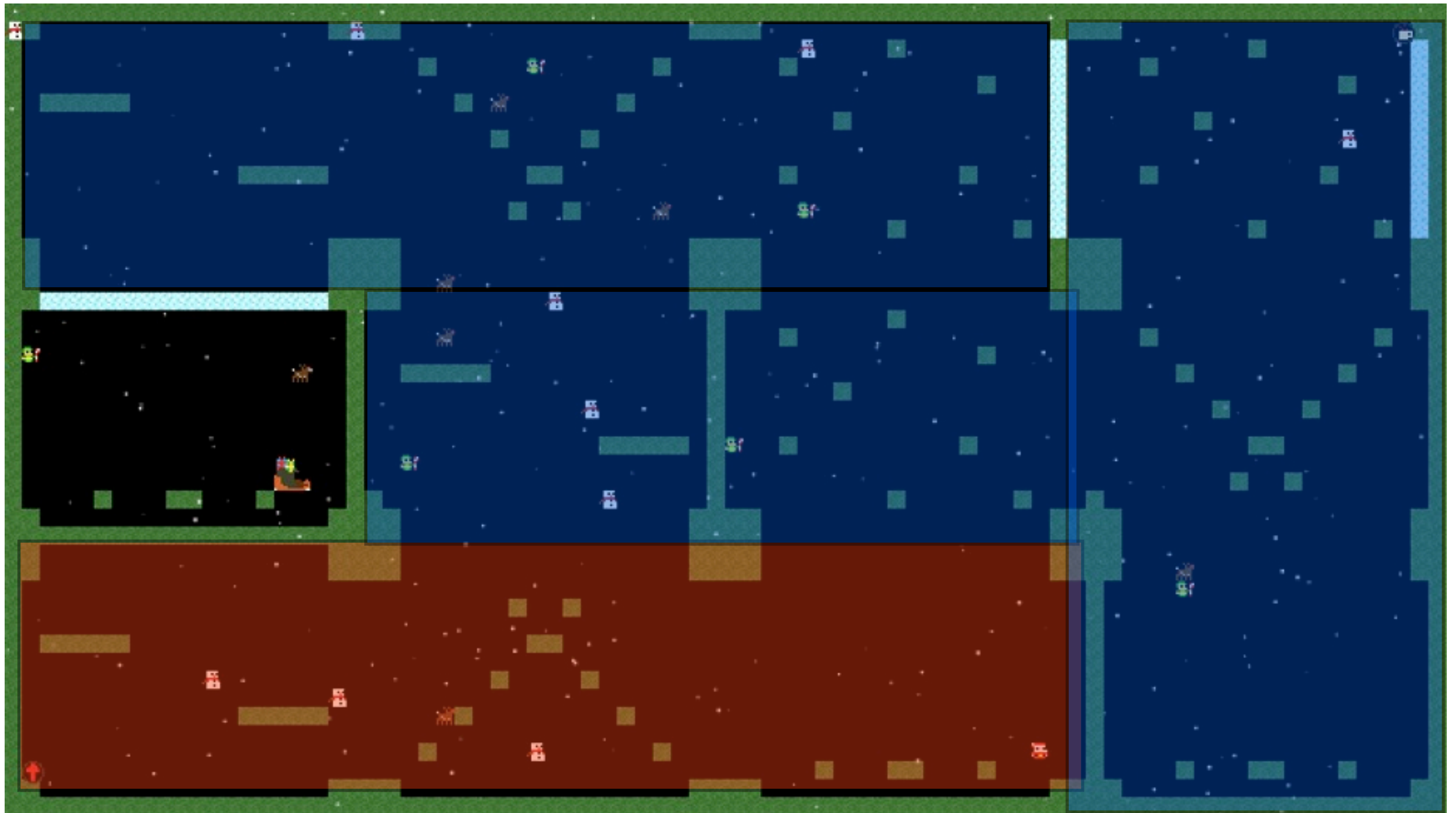
Maps - Reachability



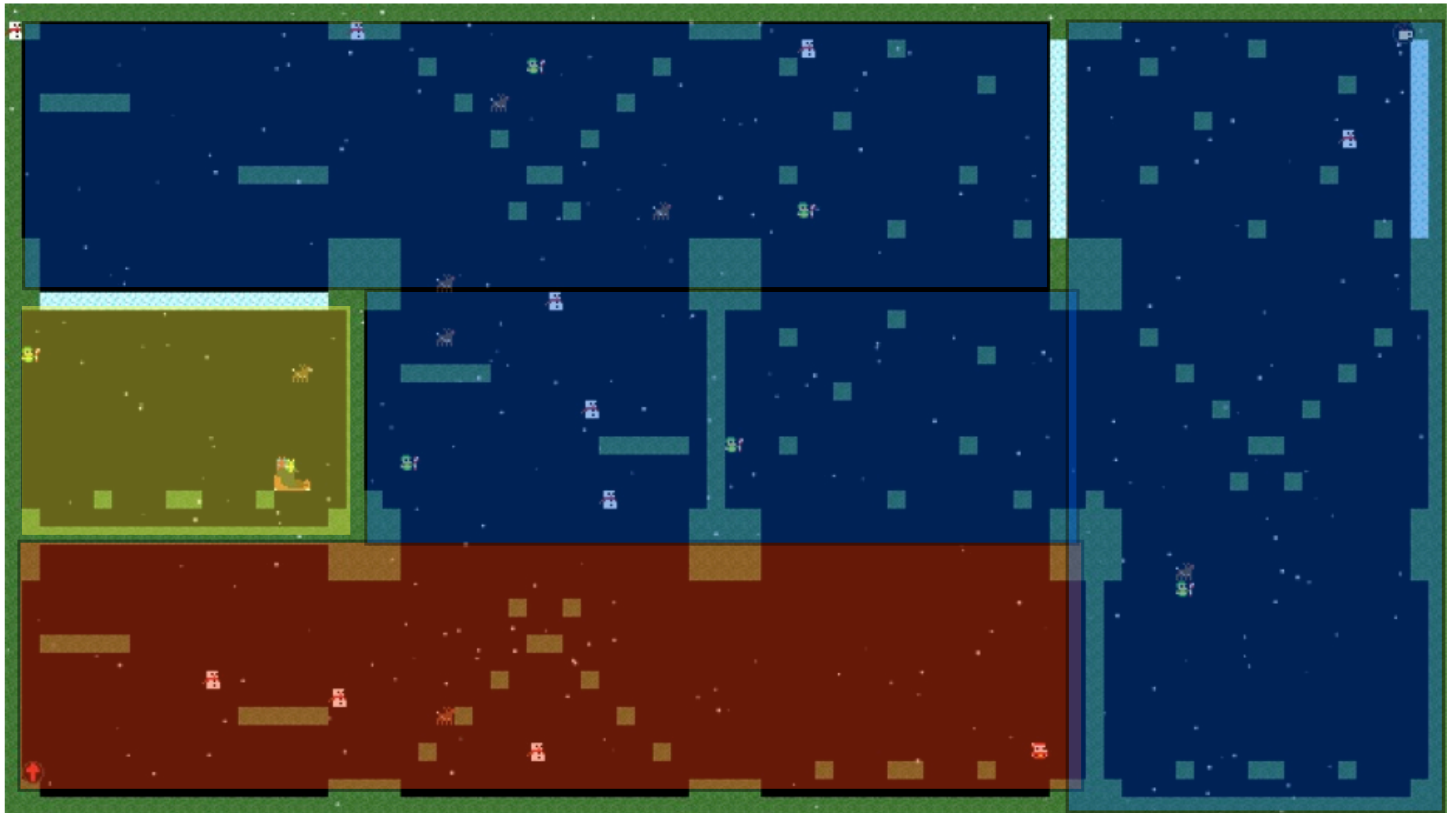
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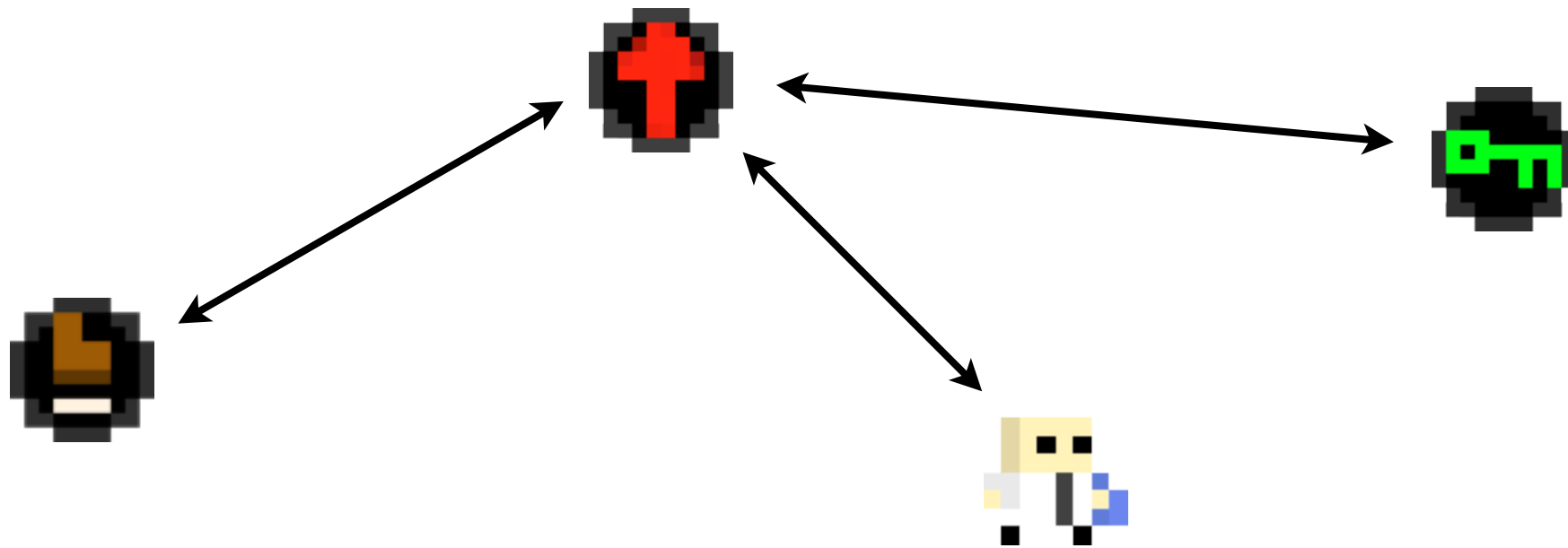
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Exploration of variable use opens up the possibility for less grammar-heavy mechanic discovery in future.

Powersets

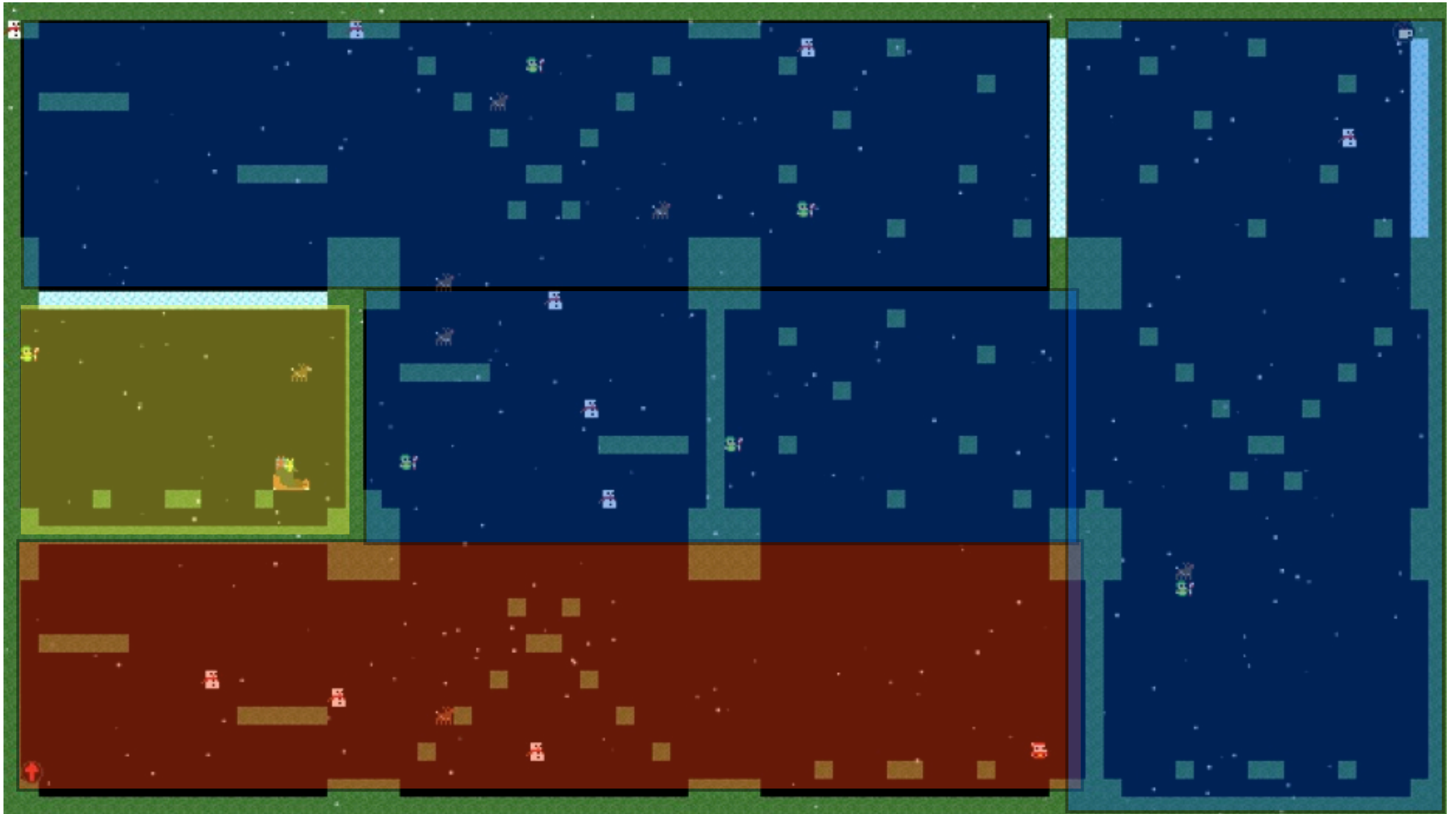


Powersets selected for the increase in % reachability they provided.

Higher fitness also given for multiple level paths within the powerset.

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- Fitter layouts spread enemy types throughout levels, didn't overwhelm the player initially, avoided enemy designs that were too similar.

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- Each species (Map, Layout...) has population of size 200.
- Species have their own crossover rates, and so on. All use elitism and are steady-state.
- ACCME v2.0 will take advantage of the department's Condor server.

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- Results inconclusive: raised questions about evaluation of automatically-designed games.
- Might also point to a gap between player perception of game quality and ACCME's current fitness estimation.

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Needless to say: @Tricxster

bit.ly/wAV55b. Despite the absence of mortality, difficulty progression was surprisingly good for a non-sentient programmer.

[-] **Chronophilla** 7 points 1 month ago

I think it's pretty fun!

↑ [-] **alonskull** 3 points 1 month ago

↓ Awesome for an AI! but we aren't out of a job... yet.

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And playable games!

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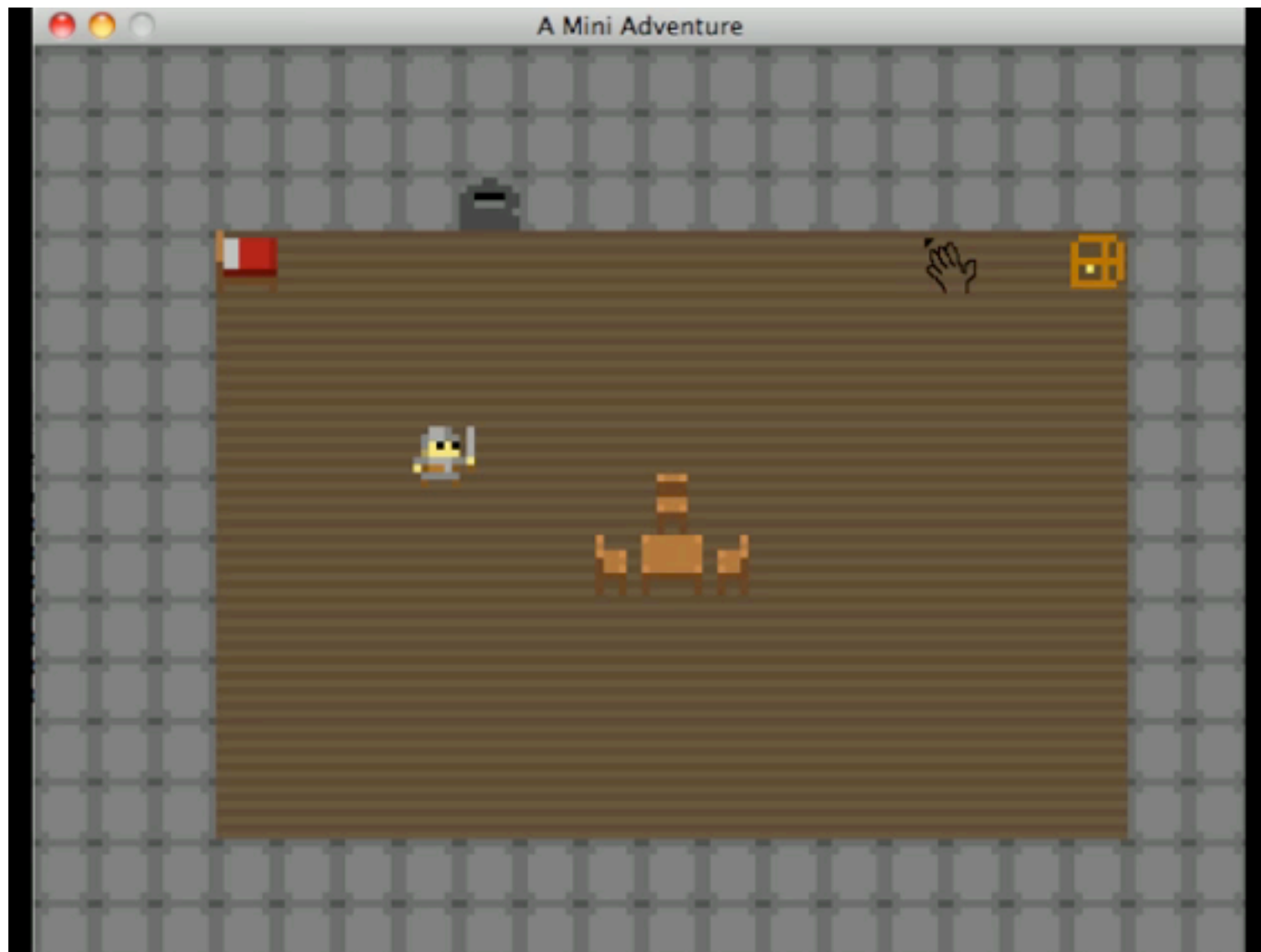
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