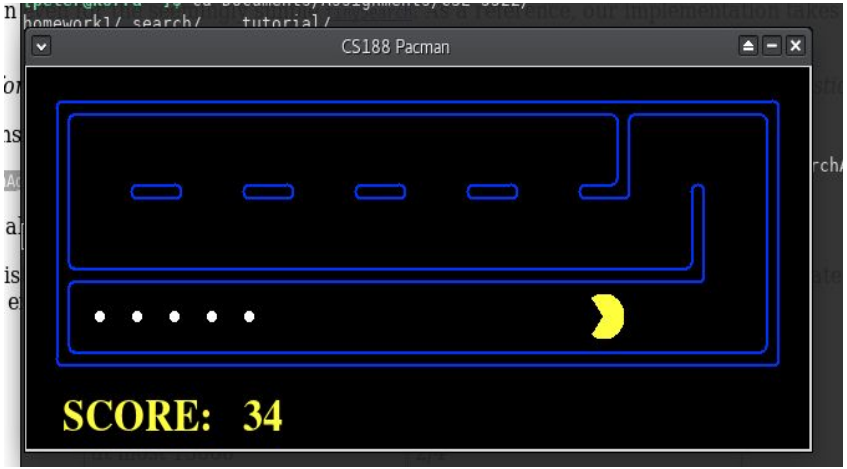
Project 1 Awards

Problem 7 — Food problem

Simple heuristic: number of dots left

- 9551 nodes
- Speed: fast (1 sec)



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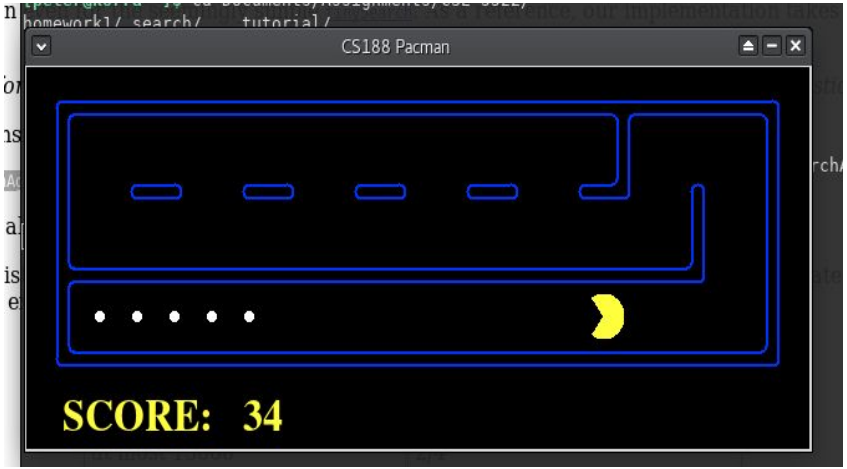
5 people tied, with 4137 nodes examined

- Heuristic: maze distance to farthest dot
- Speed: slow (10-20 sec)



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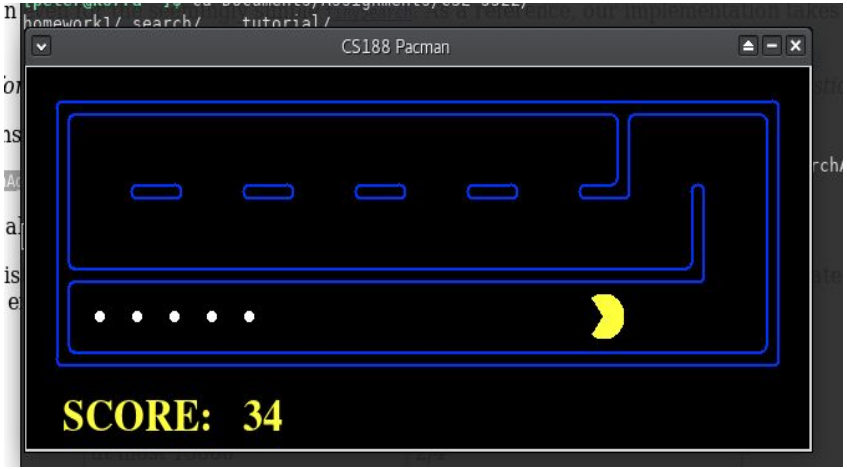


5 people tied, with 4137 nodes examined

- Heuristic: maze distance to farthest dot
- Speed: slow (10-20 sec)

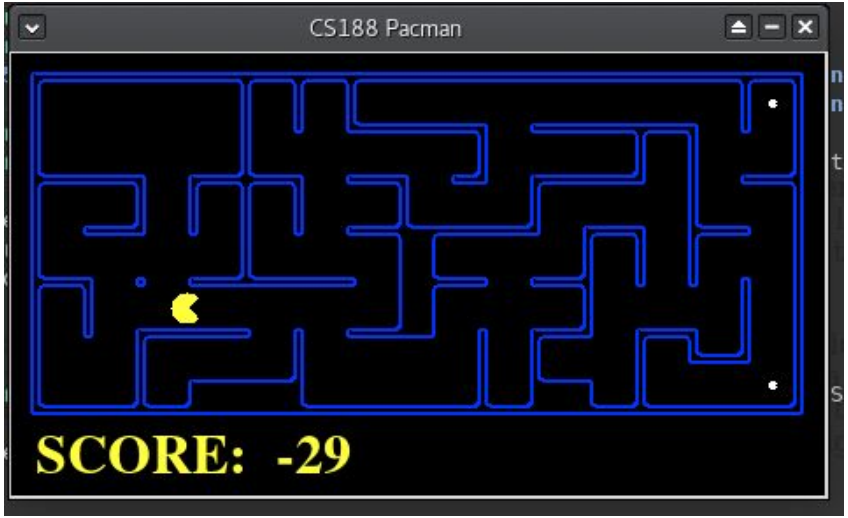
Winner: Serena Davis, with 431 nodes examined

- Heuristic: farthest pair + distance to closest dot of the pair
- Speed: reasonable (3 sec) with storing all pairs of distances

Problem 6 — Corners

2nd place: Serena Davis

- 846 nodes
- Heuristic: Closest corner, then follow walls



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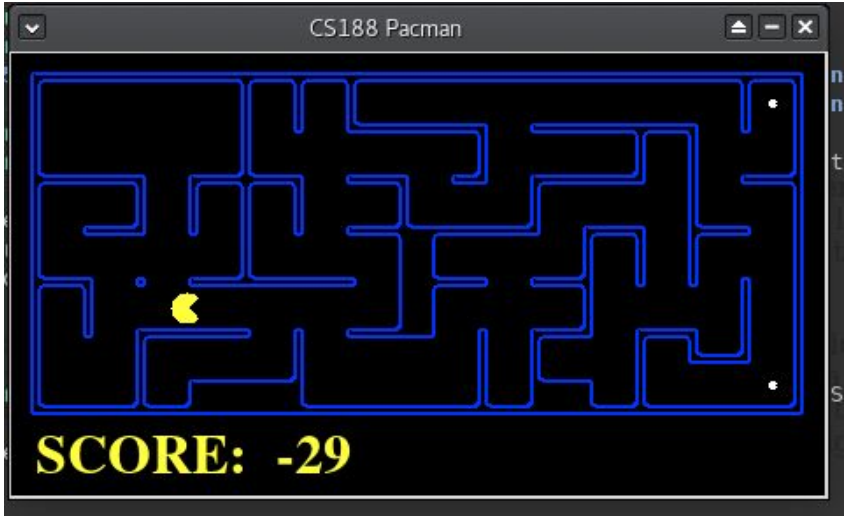

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1st place: Haoyuan Xing

- 741 nodes
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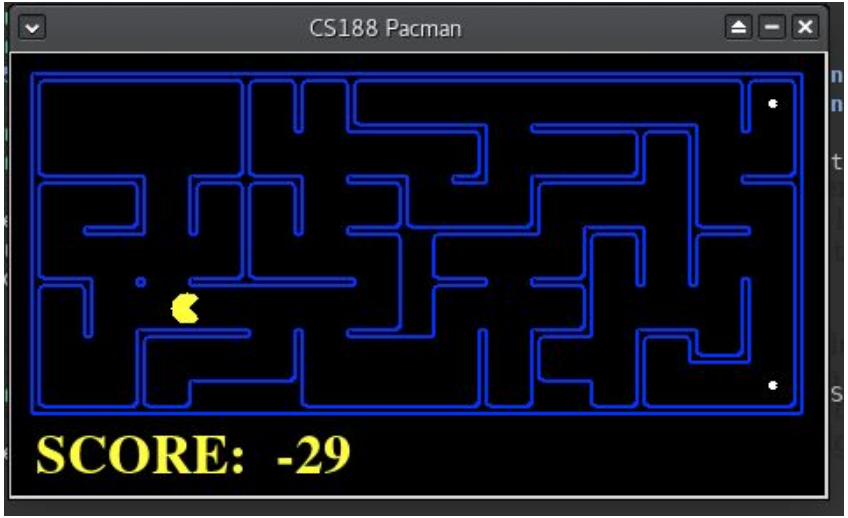

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- 741 nodes
- Heuristic: Shortest manhattan distance for all permutations of corners

0th place: Diwen Hu, Abishek Kumar

- 692 nodes, but technically not admissible
- Heuristic: Find closest corner (manhattan) and go to it
- Fix: don’t go to middle of 3, brings total to 741

Problem 6 — Davis Heuristic

- Apply the heuristic from problem 7
- 365 nodes examined

Why does this work?

- Good estimate of distance
- Can store computation