
NAVAL
POSTGRADUATE
SCHOOL

# Artificial Intelligence – Project

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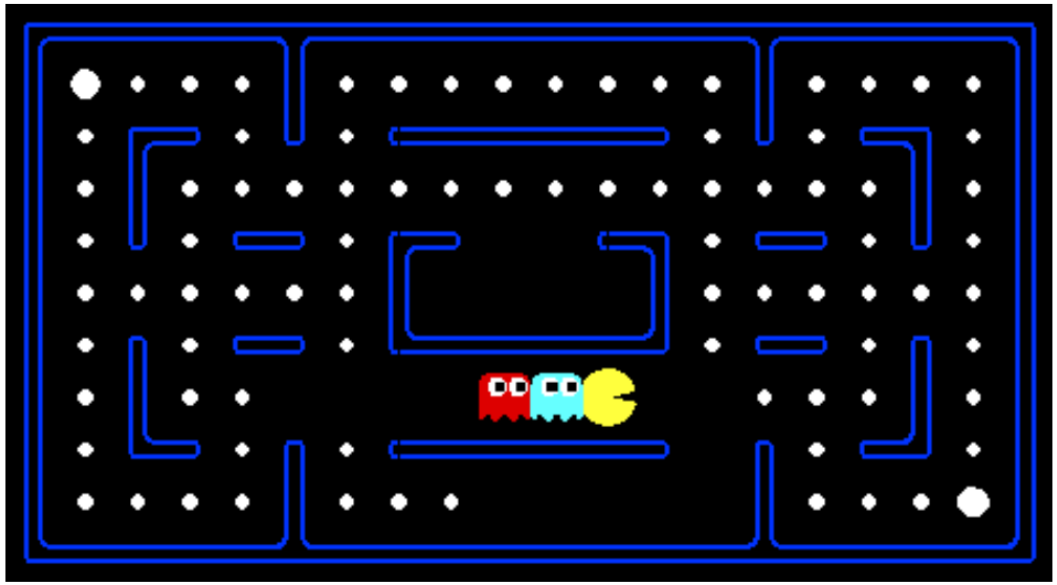
# Announcements

- HW 2 assigned
  - Due on Oct 31st
- Midterm
  - Nov 2nd

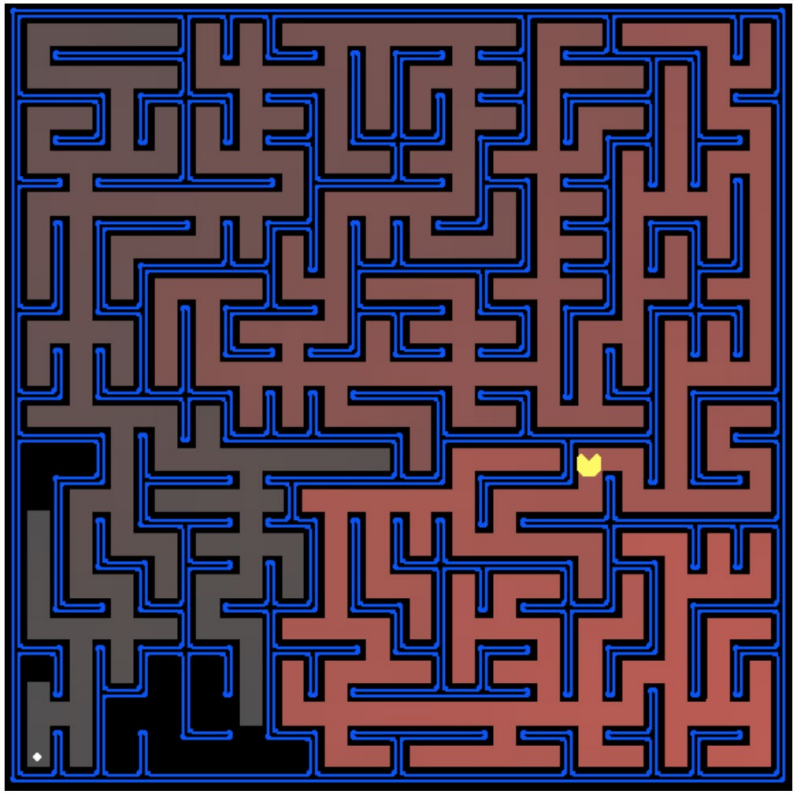
# Pac-Man

- A* Search
- Reflex Agent
- Minimax
- Alpha-Beta Pruning
- Expectimax
- Evalution Function



- Graded on overall points using python autograder.py
- Competition: Graded on Pac-Man points scored during demo

# A* Search -3pts



- Download project files
  - http://ai.berkeley.edu/search.html
- Follow Instructions
- Complete Question 4.
- Ignore all other questions
- Implement your own heuristic

- run `python autograder.py`
  - See points earned
- Run command below to test with MH

```
python pacman.py -l bigMaze -z .5 -p SearchAgent -a fn=astar,heuristic=manhattanHeuristic
```

- Competition: Run command below to test with your heuristic

```
python pacman.py -l bigMaze -z .5 -p SearchAgent -a fn=astar,heuristic= your_heuristic
```

# All other algorithms

- Download project files
  - http://ai.berkeley.edu/multiagent.html
  - Follow the instructions
- Q1: Reflex Agent
- Q2: Minimax
- Q3: Alpha-Beta Pruning
- Q4: Expectimax
- Q5: Evalution Function

# Python Autograder

- Python autograder.py

- A* Search – 3 pts
- Reflex Agent – 4 points
- Minimax – 5 points
- Alpha-Beta Pruning – 5 points
- Expectimax – 5 points
- Evalution Function – 6 points

# Pac-Man Competition

- A* Search

```
python pacman.py -l bigMaze -z .5 -p SearchAgent -a fn=astar,heuristic= your_heuristic
```

- Reflex Agent

```
python pacman.py -p ReflexAgent -l testClassic
```

- Minimax

```
python autograder.py -q q2
```

- Alpha-Beta Pruning

```
python autograder.py -q q3
```

- Expectimax

```
python autograder.py -q q4
```

- Evalution Function

```
python autograder.py -q q5
```

# Deliverables

- Turn in your code (search.py, multiagents.py)
- Class presentation and Demo
  - ~10 min presentation
  - Your implementations
  - Design decisions
    - Heuristic functions
    - Search depths
- Demo each implementation

# Grading

- 90% autograder score
- 10% Presentation

Competition Prizes

1st place: Replace lowest exam score with Project Score

2nd place: Add 5 points to lowest exam score

3rd place: Add 3 points to lowest exam score

# Teams

- 1-3 people per team
- Poll to gather Team Names and Members