

Ms Pac-Man Competition

Code implemented by :
Pantea Jabbari
Elnaz Nouri



Sharif University of Technology
Tehran ,Iran

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This document is provided as a guide for our implementation of the agent for Ms Pacman game.

How we coded it :

The basic structure of our implementation is close to what was uploaded on the HomePage of the event as we used as our start point and We use the same techniques for Image Processing and Controlling the agent as were used in the mentioned kit.

The program keeps a board including items on the page. The Information extracted from the image processing phase are maintained in this board .

This Board is defined in a separate class . by Using this board we consider all the possible moves from the current position of the pacman agent and try to figure out which move is the best , by calling an evaluation function.

The GameState class is one of the most important parts of this implementation it is used to keep track of all the events of the game .

Agent class represents our pacman Agent , this class is the one which determines what move to make by calculating a Value score for the specific state of the game .

Our evaluation function uses several different heuristics , which were defined considering the distances , and positions of different elements of the game. The direction of the ghosts and the pacman are moving is also kept .

The moves are evaluated, based on the distance from the ghosts, from the closest pill, closest power pill , and the game is generally divided into two phases , one's the one in which our agent avoids the ghosts , the other one is the phase in which it hunts them and score points .

How to run the software :

1. download pelno.zip (attached along this document) and unzip it in a folder.
2. Run the main() method in MsPacInterface

```
Java pacman.MsPacInterface
```

Note : It must be Run before the game .

3. Run Ms PacMan (Microsoft's Revenge of Arcade)

Note : The walls of level one should be in Pink . not the dark blue version .

Note : the expected position of the Ms PacMan window is written in the code,

```
static int left = 528;
```

```
static int top = 304;
```

And please note that the delay defined in MsPacInterface.java , completely depends on the speed of the system on which the program is running. Our default value is 30, but depending on the speed, change may be needed.

The score :

Our highest score is 7900, and the average score is 5500.
And we're still looking forward to improving the program.