Pacman

To run Pacman from a terminal

```
> python pacman.py -p ApproximateQAgent -a extractor=Extractor_A -x 7
     -n 10 -l originalClassic
```

Or with full labels

```
> python pacman.py --pacman ApproximateQAgent
                   --agentArgs extractor=Extractor_A
                   --numTraining 7
                   --numGames 10
                   --layout originalClassic
```

Board `layouts`, including `originalClassic`, are available in the `layouts` subdirectory.

To run Pacman directly, e.g., from PyCharm

In pacman,py, *replace*

```
if __name__ == '__main__':

    args = readCommand( sys.argv[1:] )

    runGames( **args )
```

with

```
if __name__ == '__main__':

  argsStr = '--pacman ApproximateQAgent          \
             --agentArgs extractor=Extractor_A   \
             --numTraining 7                      \
             --numGames 10                        \
             --layout originalClassic'

    readArgs = argsStr.split()

    args = readCommand( readArgs )

    runGames( **args )
```

Pacman rules

- Pacman loses if eaten by a (normal) ghost.
- Pacman scores points as follows.
    - -1 point/step.
    - 0 points for eating a capsule. Ghosts become scared for 30 steps.
    - +10 points for eating a food pellet.
    - +200 points for eating a scared ghost. When a scared ghost is eaten, it is immediately reborn (but no longer scared) in the ghost "den."
    - +500 for winning.
- Pacman wins when all food pellets are gone.

You are doing reasonably well if you consistently score 3,000 or more points per game.