Project 1 + Python tutorial

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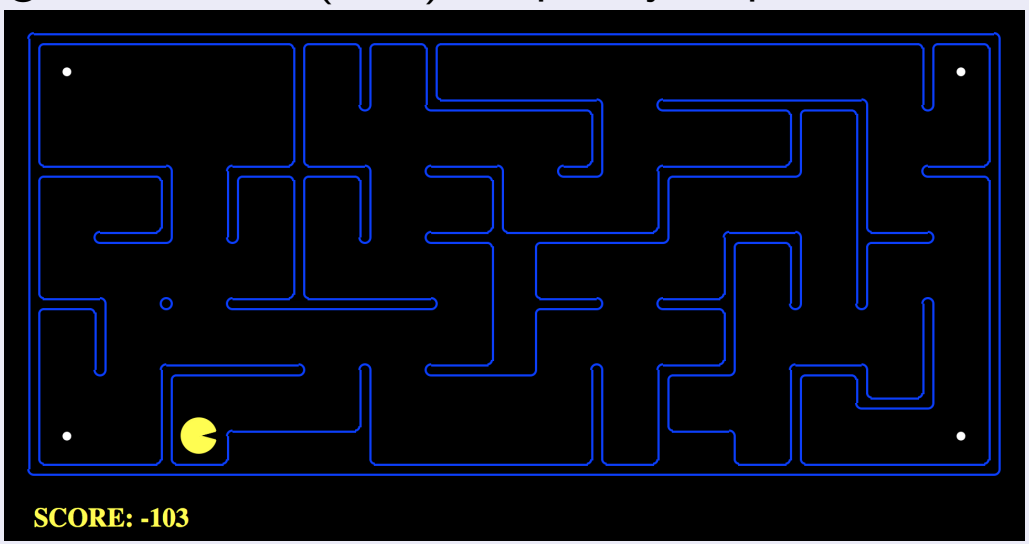
Project 1 : Pacman is hungry

Purpose

Your task is to design an intelligent agent based on search algorithms (DFS, BFS, UCS and A-Star) for eating all the food (dots) as quickly as possible.



Project 1 : Pacman is hungry

Instructions

The project is by group of 2, these groups will be the same for the two other projects. For the 26^{th} of October at 23 :59, you should have submitted an archive containing at least 4 python files (one per search algorithm) and one pdf file of maximum 4 pages.

Complete assignment

More information is provided on https://github.com/glouppe/info8006-introduction-to-ai/tree/master/pacman.
You can download the folder of the project at https://github.com/glouppe/info8006-introduction-to-ai/raw/master/pacman/pacman.zip.

Project 1 : Pacman is hungry

Office hours

If you have questions about the project you can :

- Send a mail to Samy (saittahar@uliege.be)
- Ask me at the end of the practical sessions
- Drop by my office (1.104) BUT only the Wednesday or the Friday between 1pm and 3pm

Installation

Conda

https://www.anaconda.com/download/
Follow the instructions for installation (How to Install ANACONDA link)

Virtual environment

Create a virtual environment :

```
create -n pacman python=3.6
```

Activate it :

```
source activate pacman
```

If you want to deactivate the environment :

```
source deactivate
```

Packages

Install packages :

```
conda install package_name
```

How can I use it ?

Where do I type ?

You can use python in 3 different ways :

- Interactive mode, from a Python shell.
- In script mode, by executing a Python (`.py`) file.
- In notebooks.

Mode interactif

1. Start a python shell.

   ```
   $ ipython
   ```

2. Try :

   ```
   >>> print "Hello World!"
   Hello World!
   ```

Script mode

1. `hello.py` :

   ```
   print "Hello World!"
   ```

2. Execute the script :

   ```
   $ python hello.py
   Hello World!
   ```

Notebook

1. Open a notebook :

   ```
   $ jupyter notebook
   ```

Basics of python 3

You can clone the following repository https://gitlab.erc.monash.edu.au/andrease/Python4Maths, and then open a jupyter notebook.

Project : Random agent demo

The code is available at https://github.com/glouppe/info8006-introduction-to-ai/tree/master/pacman/randomagent.py

Project : Draw bar plot with matplotlib

The python file containing the bar plot script can be accessed at : https://github.com/glouppe/info8006-introduction-to-ai/tree/master/pacman/presentations/