Notes about Coding for Reinforcement Learning Workshop

An important part of understanding RL is the ability to translate concepts to code. The Reinforcement Learning (RL) workshop comes with sample codes, where you can try the algorithms on classical RL problems. We have chosen Python for the coding language because it is currently the most popular programming language in RL. We use [TensorFlow 2 (TF2)](#) and [Keras](#) for the Machine Learning platforms. The best reference for understanding the deep learning elements in this handout is [Keras API reference](#). We use [OpenAI Gym](#) library which is a toolkit for developing and comparing reinforcement learning algorithms in Python.

The python codes is given in a public a repository called [A Crash Course on RL](#). The link is given below:

https://github.com/FarnazAdib/Crash_course_on_RL

You can run the codes either in your web browser or in a Python IDE like PyCharm.

How to run the codes in web browser?

[Jupyter notebook](#) is a free and interactive web tool known as a computational notebook, which researchers can use to combine python code and text. One can run Jupyter notebooks (ended with *.ipynb) on Google Colab using web browser. You can run the code by following the steps below:

1. Go to

    https://colab.research.google.com/notebooks/intro.ipynb

    and **sign in with a Google account**.

2. Click **"File"**, and select **"Upload Notebook"**. If you get the webpage in Swedish, click **"Arkiv"** and then **"Ladda upp anteckningsbok"**.
3. Then, a window will pop up. Select Github, paste the following link and click search

    https://github.com/FarnazAdib/Crash_course_on_RL

4. Then, a list of files with type .ipynb appears. They are Jupyter notebooks. Jupyter notebooks can have both text and code and it is possible to run the code. As an example, scroll down and open **"pg_on_cartpole_notebook.ipynb"**.
5. The file contains some cells with text and come cells with code. The cells which contain code have [ ] on the left. If you move your mouse over [ ], a play box ► appears. You can click on it to run the cell. Make sure not to miss a cell as it causes fatal errors.
6. You can continue like this and run all code cells one by one up to the end.

How to run the codes in PyCharm?

You can follow these steps to run the code in a Python IDE (preferably PyCharm)

1. Go to

    https://github.com/FarnazAdib/Crash_course_on_RL

    and clone the project.

2. Open PyCharm. From PyCharm. Click File and open project. Then, navigate to the project folder.
3. Follow [Preparation.ipynb notebook in "A Crash Course on RL"' repository](#) to build a virtual environment and import required libraries.
4. Run the python file (ended with .py) you want.