OpenClassrooms Courses Explorer on Github

Introduction

- When you start a **path** at OpenClassrooms, the simplest way not to get lost is to follow the guideline, from project to project, until success!
- When you start a **project** at OpenClassrooms, the simplest way not to get lost is to follow the required courses, from course to course, until success! When you start a **course** at OpenClassrooms, the simplest way not to get lost is to follow the guide, chapter after chapter, until success!
- However, courses have prerequisites: it is recommended to follow courses B,C and D before starting course A. And B,C,D require themselves several courses...

This is where things start to get tricky:

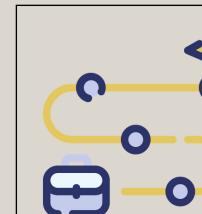
- Even by reducing healthy learner curiosity (avoid non-necessary references, skip light requirements), you will still need to keep track of all the required courses to achieve a given course. • Cross references, circular references add some fun to your attempt to follow the links: a paper and a pen become bad companions for this journey
- Moreover, Scheduling correctly your projects agenda becomes a time-consuming task itself, with few time for that!

Imagine you start your journey in an unknown place. Somewhere in front of you a few tracks enter the depths of Knowwood-OC the forest-of-OpenClassrooms-knowledge, but you won't know where they will take you to!

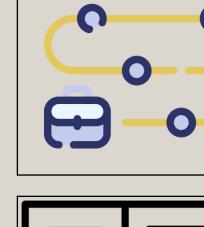
Perhaps it is a purposeful choice to let students find their ways by themselves, to let them discover some treasures along the road if curiosity and



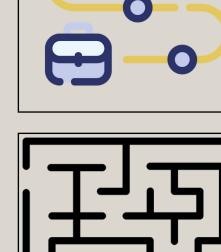
serendipity are in a good day, but... Even Dora the explorer has a map, hasn't she?



Perhaps the complexity of paths and references between courses has grown with time?



Perhaps a given uncertainty regarding the student's preestablished knowledge of the courses requirements, added to a given uncertainty regarding the student's curiosity and available time "to read further", has discouraged the desire to build a "step-by-step" schedule for each path? Would these sources of fuzziness (complexity and uncertainty) explain the absence of a full path-project-course map at OC?



When achieving my third project, I was used to find my way along the courses links, and well aware of the interest to self-discover goldnuts along the I started project 4 with same curiosity, interest, will to learn, motivation as before, and began to take note of the prerequisites for this new project.



The cross references between courses, chapters, other courses, other chapters, overwhelmed me progressively with a feeling of being lost again. As we will see soon below, this feeling was totally predictible and understandable.

Moreover, the floor, the walls, the doors and windows of this maze seem to be moving slightly: following the OpenClassrooms courses structure refactoring, some courses names are changing, some courses are archived and replaced by other ones. Some of them are even melted in a more compound one. This is certainly a good thing to update the courses and spring-cleanup the house now and again, but the cost for learners is to find their way in a courses structure that is changing in time, with no

unuseful without a clear sight of the whole links and requirement-dependencies between courses!.

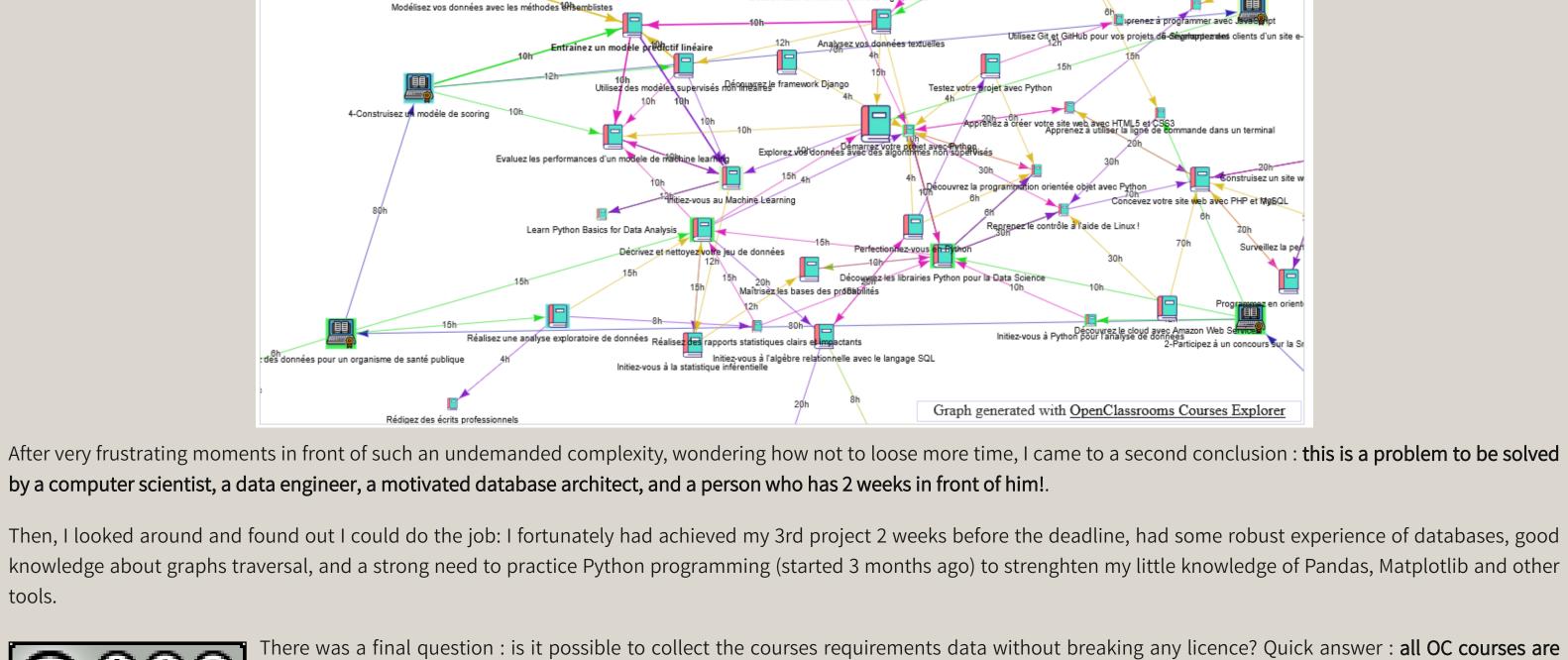
7-Détectez les Bad Buzz grâce au Deep Learning

trace of the past structure. Another loss of precious time is when you wonder why your "achieved" courses are archived, and whether you have to follow or not the new updated courses with (probably better-fresher-more-recent content).

For instance with the best intentions, this is how OpenClassrooms becomes **OpenClassMaze** for the student fellow: • The course Démarrez votre projet avec Python will be archived in july 2021, so we are invited to follow this one: Découvrez la programmation orienté objet avec Python • But when landing on the page Découvrez la programmation orienté objet avec Python, we are invited to take note that the course has been updated into a new version that we can find here: Apprenez la programmation orienté objet avec Python • Finally, reading this new course prerequisites, we are still invited to follow the course Démarrez votre projet avec Python (The one that will be archived soon and replaced by a one that redirects to the current page? Yeah!). • (re)Finally, reading further this new course prerequisites, we are also invited to follow two new courses Mettez en place votre environnement front-end (with Visual Studio) and Mettez en place votre environnement Python (with Pycharm).

To understand my mindset when I started following the courses of my 4th project, here is a screenshot of the dense relational network between courses of the 3rd and 4th projects in the path "Ingénieur IA": In front of such a complex network, one can easily understand that a student can feel a bit lost, and feel a bit uncomfortable when following courses, chapter after chapter.

After a few attempts to calm down this growing feeling, I came to a first conclusion: paper, pen, post'it, calc-sheet, Jira, ... whatever tool you use to draw your learning roadmap is



explorer and do some automated things with it. That was the story, here is OpenClassrooms Courses Explorer!

provided with a Creative Commons By-SA Licence. Technical answer: All the data is here, available and usable for my needs, so let's program an

What is OC-C-E? • OC-C-E is a tribute to OC: this is the cost I pay to get a full overview of OC courses interconnexions.

• OC-C-E is again a tribute to OC: this is a work motivated by the will to loose less time and embrace as much good OC Courses content as possible to avoid missing goldnuts somewhere • OC-C-E is a submarine project between project 3 and project 4: I used all python data science programming I had learned the 3 last months

• OC-C-E is an OpenClassrooms Courses Explorer

What is *NOT* OC-C-E?

will want to do something with it..

tools.

• OC-C-E is **NOT** a commercial industrial tool: it is free, it is "as is", and there is a licence to explain how to use it.

Where are the OC-C-E entry points? • Launch with Jupyter Lab: several notebooks are provided, one with the full application and some others with tutorial step by step examples.

• OC-C-E is **NOT** a work of OpenClassrooms, it was not demanded by anyone in OC Organization. For this reason, do not ask OC any support or information about this tool.

• OC-C-E is **NOT** for me myself and I (anymore). It was first motivated by my own needs, but the product belongs now to the data-python-scientists and other OC students who

See below for installation instructions

• Launch with Voilà: the main application will start with Voilà!

• Launch with Jupyter Notebook: same as above

'data.*']" OCCoursesExplorer.ipynb

voila --enable_nbextensions=True --VoilaConfiguration.file_whitelist="['.*\.(csv|html|png|jpg)', 'viz.*',

Why OC-C-E? The personal story leading to develop OpenClassrooms Courses Explorer is now 3 weeks behind. It took me way more time than expected to finally achieve the scheduling tool.

practice Pandas, Matplotlib, Voila, web scrapping... Now it is time to deliver the job and let you do something with it.

Who can use OC-C-E?

• Someone with Python + Jupyter understanding

• Someone who knows someone who does that For now, I do not plan to make it a standalone "one-click-install" application.

• The web scrapper used by this app is Selenium, with a Firefox Driver. If you don't want to use Firefox and prefer Chrome, then you'll have to configure some files.

13 topics 637 courses

Graph generated with OpenClassrooms Courses Explorer

Graph generated with OpenClassrooms Courses Explorer

There is no "in-between" approach: between building a bunch of scripts and building a clean application with a documented code, I chose the second one. Moreover I wanted to

• Explore Skills (this will be delivered in a later version) • Schedule your path and take your progression in account • Plenty things I do not even know, that you will imagine with the datasets.

• Use the datasets provided with the application

• Refresh the datasets from time to time

What can I really do with OC-C-E?

• Explore Courses and Chapters

• Explore Topics and Paths

• Explore Paths and Projects

- OpenClassrooms Courses Explorer: How To install OC-C-E
- Requirements

• Install all packages listed in the file requirements.txt

pip install ipywidgets

■ To ensure ipywidgets will run properly within the notebooks, be sure to install the package like this: conda install -c conda-forge ipywidgets • If running python VirtualEnv : use the requirements.txt file

• If running a virtual Anaconda environment : use the environment.yml file

• To use the notebooks with Jupyter, be sure to have setup ipywidgets as nbextension • jupyter nbextension enable --py widgetsnbextension • For Jupyter Lab: install • jupyter labextension install @jupyter-widgets/jupyterlab-manager

How to explore Topics, Paths, Projects and Courses

Here are some captures of the application. The widgets are self-explanatory.

Loading data/my_courses_rinks.csv .
... OK : 1121 lines / 5 columns.
Loading data/my_courses.csv ...
... OK : 15 lines / 11 columns.
Loading data/my_progress_courses.csv ...
... OK : 15 lines / 3 columns.
Loading data/my_progress_projects_csv

The Data Interface

■ To ensure ipywidgets will run properly within the notebooks, be sure to install the package like this:

Anyway you have to setup the proper absolute path towards your Firefox (or other) web driver in the OCCoursesConfig.py file!

COURSES SKILLS **COURSES PARTS** COURSES CHAPTERS COURSES LINKS

ACTION Collect! Aut Bur Bus Dat Des Dév Ges Ins Mar Péd RH Sof Sy COURSES Collect! 15min & Collect! (See above) Collect! PATHS Collect ! PATHS SKILLS 🙈 Collect ! PROJECTS & Collect! PROJECTS SKILLS connexion required --> Write OpenClassrooms Courses to CSV --> ■ Save Database to CSV!

The Projects tab

The Courses tab

The Paths tab

Graph generated with OpenClassrooms Courses Explorer

Schedule for the path Ingénieur Machine Learning

3848166-Faire l'inventaire de ses compétences

The Schedule tab

Language: fr / Duration: 6m

How to use OC-C-E with Notebooks?

#cours du topic 3 (data)

g.show(href)

[10]:

Launch some queries on the datasets

1-Définissez votre stratégie d'apprentissage

Feel free to use and adapt the tutorial notebooks provided: step by step, courses and paths, scheduler...

[10]: href= occ.VizFolder+"oc_topics_and_paths.html"

heading=heading.encode('utf-8').decode('latin')

heading="Topics and Paths at OpenClassrooms<i> ...et voilà</i>!"

[10]: ht = oca.build_path_agenda_html(path_id,required_max_depth,references_max_depth)

href= occ.VizFolder+"oc_path_"+str(path_id)+"_schedule.html"

display(IFrame(href,height='800px', width='99%'))

f = open(href,'w')

f.write(ht) f.close()

g = ocg.build_topics_and_paths_graph(height='700px', width='99%', bgcolor="#d5d0f5", font_color="#141414", heading=heading, show_titles = True,

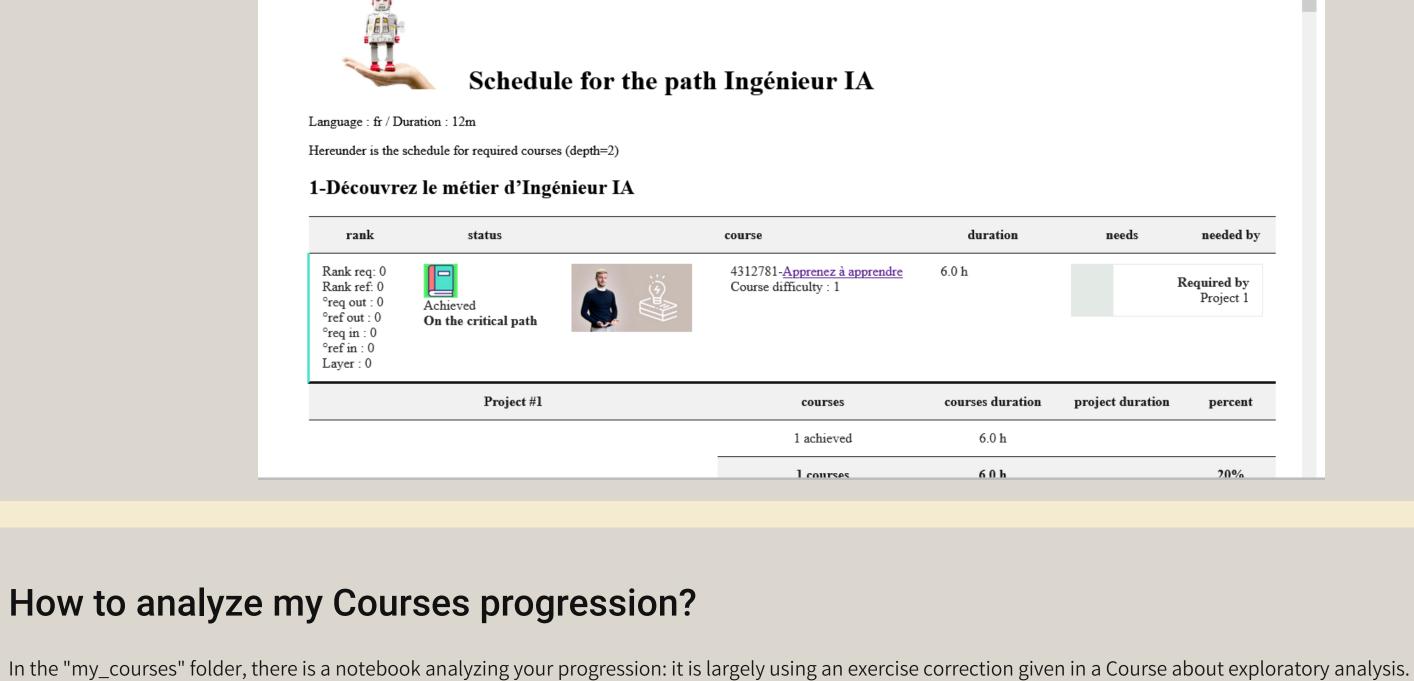
directed=False,notebook=True,layout=False,show_buttons=False)

Topics and Paths at OpenClassrooms ...et voilà!

#encoding trick for those who like accents in their titles:

topic_id=3 #data topic (see data/topics.csv) df=ocd.OC_Courses[["topic_id","course_id","course_name","course_title","course_language","course_url"]][ocd.OC_Courses["topic_id"].isin([topic_id])] print("Courses of the 'DATA' topic : ",len(df)) display(df.head()) course_title course_language course_url course_name objectif-ia-initiez-vous-a-lintelligence-artificielle Objectif IA: initiez-vous à l'intelligence artificielle fr https://openclassrooms.com/fr/courses/6417031-objectif-ia-initiez-vous-a-lin... fr https://openclassrooms.com/fr/courses/6204541-initiez-vous-a-python-pour-lan... 4449026 initiez-vous-a-lalgebre-relationnelle-avec-le-langage-sgl Initiez-vous à l'algèbre relationnelle avec le langage SQL fr https://openclassrooms.com/fr/courses/4449026-initiez-vous-a-lalgebre-relati... fr https://openclassrooms.com/fr/courses/4011851-initiez-vous-au-machine-learning fr https://openclassrooms.com/fr/courses/4525256-initiez-vous-au-langage-r-pour... 4525256 initiez-vous-au-langage-r-pour-analyser-vos-donnees Initiez-vous au langage R pour analyser vos données Create some dynamic graphs 1. Topics and Paths

Create a schedule



Here is the course analyzing OC courses progression.

How to export my Path Schedule towards CSV or Jira? In a next version of the application.

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How to contribute?

Checkpoint Remember all of this is just a Proof of Concept, a Work in Progress. I will be very happy if someone gets something useful from this tool. Please let me know!

People interested, mostly OC students following the DATA paths but also "Python dev" and any other curious dev, are welcome to contribute: contact me via the OC Workplace!