Data Science in Chemical Engineering

Tutorial 1.5: Course Tools

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Agenda

COURSE TOOLS

- Git & GitHub
- Python
- Jupyter

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Course Tools

VERSION CONTROL: GIT & GITHUB

- Git
  - distributed version control system
  - most used for tracking changes and collaborating on code projects

- GitHub
  - Most popular cloud-based platform for version control using Git
  - Can be used with the web interface or with command line
  - Sign up: https://github.com/
  - Download: https://desktop.github.com/

Course Tools

VERSION CONTROL: USEFUL TERMS

- Repository
  The project folder set up for version control

- Fork
  A copy of an existing repository

- Pull Request
  A request to the editors to review and approve code changes

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Course Tools

BASIC GIT COMMANDS

- ### init
  Initializes Git in the current folder to use version control locally on your machine

- ### add <file_name>
  Adds the indicated file to track changes

- ### commit
  Saves a new version with tracked changes

- ### branch
  Lists all branches in repository

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Course Tools

BASIC GIT COMMANDS

- git branch <branch_name>
  Creates a new branch with the latest version of the repository

- git remote add origin <repository_url>
  Connects local repository to remote repository

- git push –u origin main
  Pushes the latest version from the local repository to the remote repository

- git pull
  Pulls the latest version from the remote repository to the local repository

Course Tools

PYTHON

- Python is an open-source programming language created by a Dutch programmer named Guido van Rossum in 1991

- Easy to learn and easy to read

- Great community support

- Download: https://www.python.org/downloads/

Course Tools

Jupyter

- A web application that allows creating and sharing interactive documents (notebooks) with text, code, visualizations, and outputs in the same place

Course Tools

Jupyter Lab

- A development environment for creating Jupyter Notebooks

- Install locally:
  1. Open a terminal and type the following command
  2. pip install jupyterlab

- Run Jupyterlab:
  1. Open a terminal and type the following command
  2. python –m jupyterlab

- Web interface: https://jupyter.org/try-jupyter/lab/index.html

Course Tools

Google CoLab

- A cloud-based environment for creating Jupyter Notebooks and saving and sharing them on Google Drive

- Google CoLab: https://colab.research.google.com/

Course Tools

FURTHER READINGS

- https://docs.github.com/en/get-started/quickstart/hello-world
- https://www.freecodecamp.org/news/introduction-to-git-and-github/
- https://www.atlassian.com/git/tutorials/using-branches

Thank you

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