Astroinformatics
Session #00

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first semester, academic year 2022
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publicly accessible version

About this file...

- The author of this file is Kinoshita Daisuke.
- The original version of this file was used for the course "Astroinformatics" (course ID: AS6095) offered at Institute of Astronomy, National Central University from September 2022 to January 2023.
- The file is provided in the hope that it will be useful, but there is no guarantee for the correctness. Use this file at your own risk.
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- Contact address: `https://www.instagram.com/daisuke23888/`

About this course

- Astroinformatics
  - first semester of academic year 2022
    - from Sep/2022 to Jan/2023
  - from 09:00 to 11:50 on Monday
    - from 17:00 to 19:50 on 12, 19, and 26 September 2022
  - classroom: S4-914
  - instructor: Kinoshita Daisuke
  - learning about
    - Python programming,
    - and astronomy

Grading

- Attendance (50%)
  - 10 sets of exercises
    - a set of 3 easy exercises are shown in the classroom every week.
    - Choose 10 from 15 sessions.
  - 5 points at maximum for each exercise
  - deadline: a week after the class
    - for the case of the class on 12/Sep/2022, you need to submit the file by 17:00 on 19/Sep/2022.
  - file type: PDF file
  - submission form: `https://forms.gle/XBHcGUcKmvwj5XfT9`

Grading

- Assignment (50%)
  - 5 assignments
    - a set of problems are listed at the end of the lecture note.
    - Choose 5 from 15 sessions.
  - 10 points at maximum for each assignment.
  - deadlines:
    - first assignment: 17:00 on 14/Oct/2022
    - second assignment: 17:00 on 04/Nov/2022
    - third assignment: 17:00 on 25/Nov/2022
    - fourth assignment: 17:00 on 16/Dec/2022
    - fifth assignment: 17:00 on 06/Jan/2022
  - file type: PDF file
  - submission form: `https://forms.gle/Vwb3roUa5Vtq3KuS9`

About the lecture

- Things you need to bring to the classroom.
  - a computer which can run a web browser
    - a laptop computer or a tablet computer
  - HDMI to VGA adaptor
    - for showing your computer display on the screen
  - a notebook and pens
    - for taking notes
  - a mobile phone
    - for taking photos for recording purpose

About the lecture

- Preparation for this course
  - installation of your favourite web browser on your computer
    - e.g.: Firefox
  - installation of Python 3 on your computer
    - e.g.: Python 3.9.14
  - installation of your favourite text editor on your computer
    - e.g.: GNU Emacs
  - installation of your favourite terminal emulator on your computer
    - e.g.: XTerm

About the lecture

- We write Python scripts and do astronomy.
- What we do in the classroom?
  - executing sample Python scripts
    - learning important syntax
    - learning useful functions
    - learning useful methods
  - trying number of practices
    - writing your own Python scripts
    - executing those Python scripts
- Where are sample Python scripts?
  - on GitHub repository
  - `https://github.com/kinoshitadaisuke/ncu_astroinformatics_202209`

About the lecture

- How to execute sample Python scripts?
- Method 1
  - downloading `.py` files from GitHub repository
  - executing `.py` files on a terminal emulator
- Method 2
  - downloading `.ipynb` files from GitHub repository
  - opening `.ipynb` files on JupyterLab (or Jupyter Notebook)
  - executing cells
- Method 3
  - starting your favourite web browser
  - accessing to `https://mybinder.org/v2/gh/kinoshitadaisuke/ncu_astroinformatics_202209/HEAD`
  - opening `.ipynb` files on Binder
  - executing cells

About Python programming

- Read "The Python Tutorial" to learn about Python programming.
  - "The Python Tutorial": `https://docs.python.org/3/tutorial/`
- If you find a difficulty to read "The Python Tutorial" alone, come and talk to me.
  - We may arrange a group reading activity. (e.g. once a week, 2-hr each time)

About Python programming

- If you are new to Python programming, come and talk to me.
  - We may arrange a crash course on introductory Python programming.

Be active!

- Ask a question if you find anything that you do not know.
- Show me the Python code you have written.
- Tell me if you have no idea how to write a Python code for a practice.

Arrange time for your programming study!

- To improve your programming skill, arrange enough time for your programming study.
- You need to arrange time for
  - reading books about Python programming,
  - writing Python codes and running those codes.
- If it is difficult for you to arrange time for programming study at home (or at dormitory room), come and talk to me. We may be able to arrange time for a group meeting on programming study (e.g. once a week, 2-hr each time).

Have a good use of Google Calendar!

- Don't forget deadlines for attendance check submission and assignment submission.
- Have a good use of Google Calendar (or a similar app) and its notification function.
- Every time you see a deadline, make an event on Google Calendar and set notifications.

About course material

- Course material is available at the course web page.
  - `https://s3b.astro.ncu.edu.tw/ai_202209/`
- Course material is available for your download for a week.
  - Why?
  - Because I encourage you to come to the classroom every week.
  - Make sure to download course material in the classroom.
  - If you did not come to the classroom for some reason (e.g. sick, injury, family matter, etc.), do not forget to download course material within a week.
- Course material can be downloaded only from computers / mobile phones connected to the computer network of our university.
  - Why?
  - Because I encourage you to come to the classroom every week.
- Course material is password-protected.
  - Why?
  - Because I encourage you to come to the classroom every week.
  - The password to open PDF file is shown on the whiteboard in the classroom at the beginning of the lecture.

Enjoy Python programming!

And, enjoy the course!