Programming Assignment Guidelines

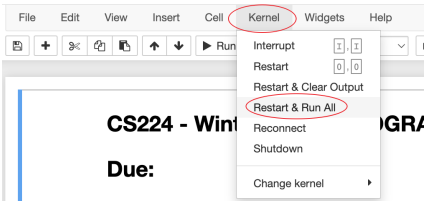
1 Submission Instructions

Please make sure to upload your **.ipynb** file and **PDF** report file separately to Gradescope. To ensure that your submission is properly graded, please submit your Jupyter Notebook to "HW* - CODE" and your PDF report file to "HW* - PDF", where * is the assignment number.

When submitting your homework on Gradescope, please make sure to **link each question** to its corresponding page on the submitted PDF.

1.1 Submit your .ipynb file to "HW* - CODE"

Ensure that your notebook runs properly before submitting it. Do: `Kernel` $\longrightarrow$ `Restart & Runn All` to ensure that there are no errors.



Then submit the Jupyter Notebook (.ipynb) file to "HW * - CODE".

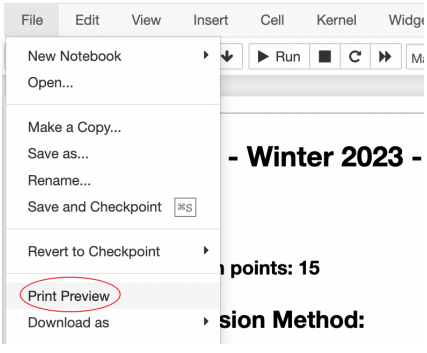
1.2 Submit your PDF file to "HW* - PDF"

1.2.1 Export Notebook as PDF

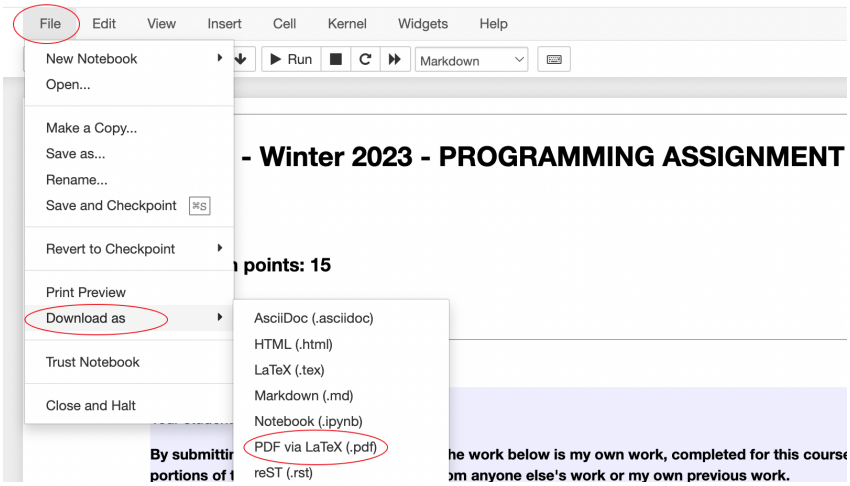
You can export a notebook in PDF format mainly in two ways:

Option 1: Using Jupyter Notebook

`File` $\longrightarrow$ `Print Preview` followed by printing to a PDF from your browser



or: `File` $\longrightarrow$ `Download as` $\longrightarrow$ `PDF via LaTeX(.pdf)`



If this doesn't look correct, try first exporting it as an HTML file and then converting that to PDF (load it in a web browser and print it to PDF).

Option 2: From the Command Line

Exporting to PDF requires nbconvert, Pandoc, and TeX. Details on installation can be found here.

```
$ jupyter nbconvert --to pdf your_notebook.ipynb
```

1.2.2 Submit PDF on Gradescope

1. Go to Gradescope, click on the relevant assignment and upload the exported PDF of your notebook.
2. **Select each question** on the left-hand side and the corresponding pages in your PDF. This guide will help you how to properly map answers to pages.

2 Resources

We will use Python for the programming portions of the assignments. During the second week of the quarter, we will provide a tutorial to jump-start your transition into working in Python.

2.1 Python

We strongly encourage you to use **Python 3** (versus Python 2) so that if code is provided on an assignment there are no compatibility issues. This also helps with debugging if everyone is on the same version. Here are some Python related resources:

- "Whether you are an experienced programmer or not, this website is intended for everyone who wishes to learn the Python programming language."
- Python tutorial
- If you are a Matlab user, NumPy for MATLAB users might be helpful as a general summary of common Python operations.

Python has a vast number of libraries to simplify many tasks. Among those that you will probably use regularly:

- NumPy provides really powerful array handling capabilities like those in Matlab to allow you to create and manipulate arrays of data. It also has some algorithms that operate on the data. We will use NumPy extensively in this class.

- Matplotlib provides very powerful (but sometimes challenging to use) plotting capabilities. A quick way to get started on a plot is to look at the Matplotlib gallery to obtain code to generate a plot like the one you want to create.
- PyTorch Tutorial: Tensors and PyTorch Tutorial: Neural Networks might be useful for later assignments.

2.2 Jupyter Notebooks

Jupyter notebook is a convenient way to write Python programs, especially for machine learning applications where you are actively exploring data.

- Official docs: Install and Use, Notebook user interface

2.3 LaTeX

- LaTeX Cheat Sheet

3 More Notes

- Before you start, make sure you have installed all the packages needed in your local Jupyter instance.
- Read *all* cells carefully and answer *all* parts (both text and missing code). You will need to complete all the code marked `TODO` or `YOUR CODE HERE`, and answer descriptive/derivation questions.
- If you are asked to implement a particular functionality, you should **NOT** use an existing implementation from libraries like NumPy, scikit-learn (or some other library that you may find). If in doubt, please just **ask**.
- When submitting to Gradescope, please **LINK each question** from the assignment in Gradescope to the location of its answer in your assignment PDF. For instructions, see `https://guides.gradescope.com/hc/en-us/articles/21864315441677-Submitting-a-PDF-for-an-assignment`.

Academic Integrity

Each assignment should be done **individually**. You may discuss general approaches with other students in the class, and ask questions to the TA, but you must **only submit work that is yours**. If you receive help by any external sources (other than the TA and the instructor), you must properly credit those sources. The UCR Academic Integrity policies are available at `http://conduct.ucr.edu/policies/academicintegrity.html`.