Middle Tennessee State University

Department of Computer Science

CSCI-3080 Discrete Structure

OLA3: Recursive Definitions, Recurrence Relations

Instructor: Dr. Xin Yang

Due date: Mar 4th, 2022 (23:59 PM)

February 24, 2022

1. Download and Install Anaconda

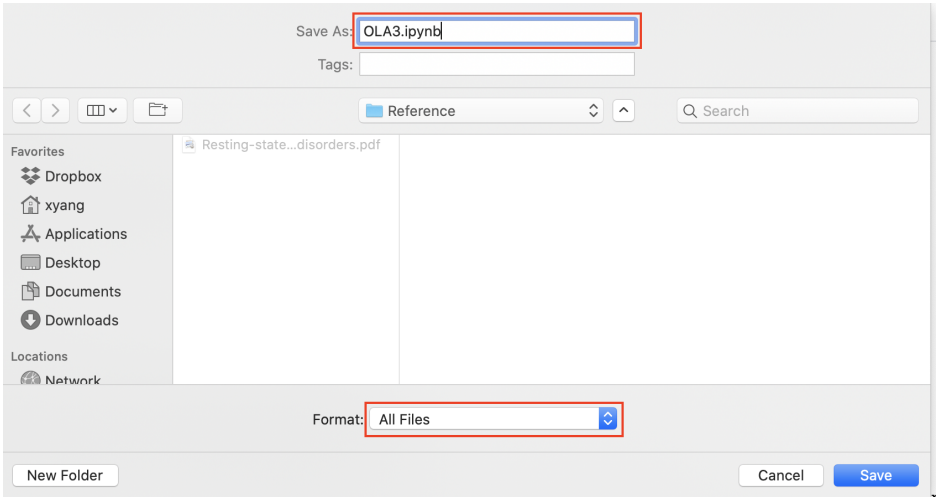
Windows users: `https://docs.anaconda.com/anaconda/install/windows/`
Mac users: `https://docs.anaconda.com/anaconda/install/mac-os/`
Linux users: `https://docs.anaconda.com/anaconda/install/linux/`

Figure 1: Anaconda: Data Science Platform

2. Download the Starter Jupyter Notebook

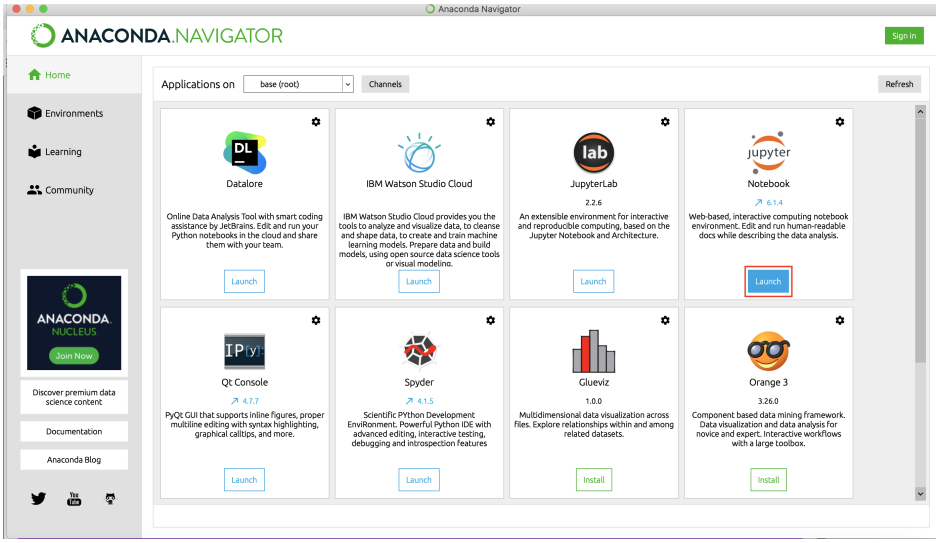
Please download the starter Jupyter Notebook (OLA3.ipynb) from my course calendar:
`https://www.cs.mtsu.edu/~xyang/3080/OLA/OLA3.ipynb`

- **Right click** the page.
- Click: "**Save As**"
- Select Format: **All Files**
- **Remove** the extension **.txt**.



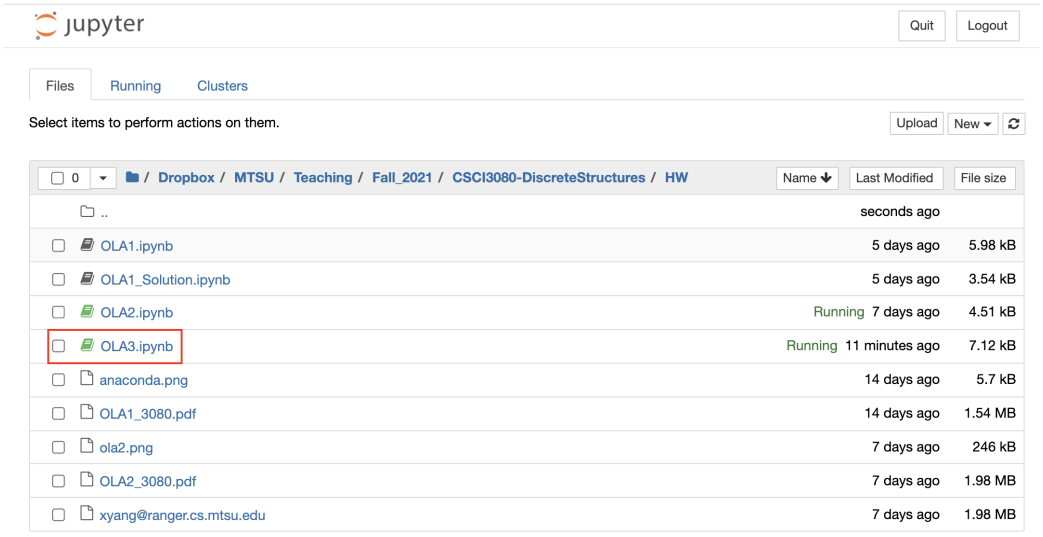
3. Launch Jupyter Notebook

(1) Open Anaconda.
(2) Launch Jupyter Notebook through Anaconda.

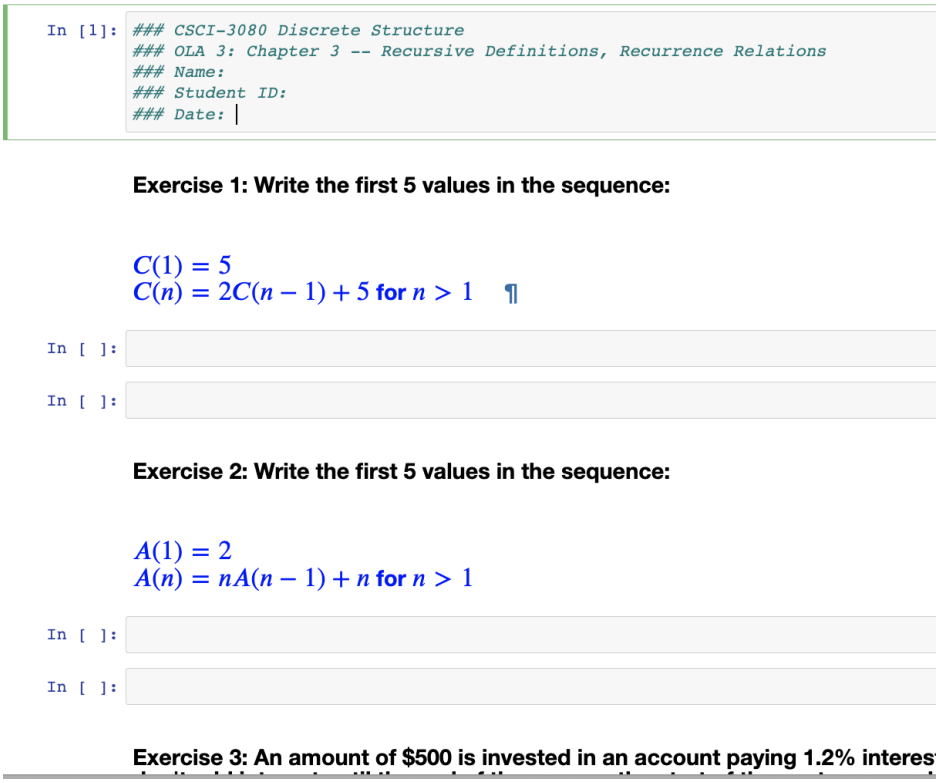


4. Open Jupyter Notebook OLA3

(1) Locate OLA3.ipynb in your Download Folder.



(2) You should see the following page after you click OLA3.ipynb :



```
In [1]: ### CSCI-3080 Discrete Structure
        ### OLA 3: Chapter 3 -- Recursive Definitions, Recurrence Relations
        ### Name:
        ### Student ID:
        ### Date:
```

Exercise 1: Write the first 5 values in the sequence:

$C(1) = 5$
$C(n) = 2C(n-1) + 5$ **for** $n > 1$ ¶

```
In [ ]:
In [ ]:
```

Exercise 2: Write the first 5 values in the sequence:

$A(1) = 2$
$A(n) = nA(n-1) + n$ **for** $n > 1$

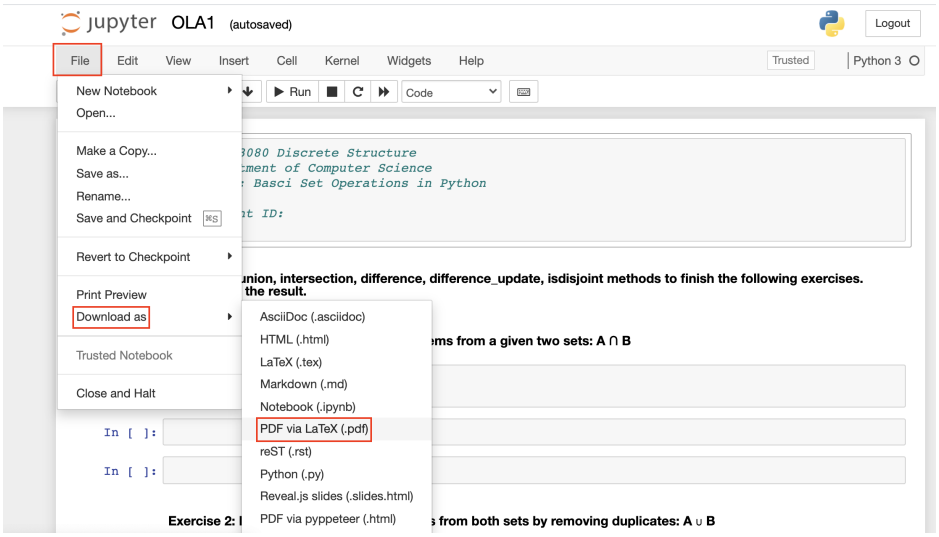
```
In [ ]:
In [ ]:
```

Exercise 3: An amount of $500 is invested in an account paying 1.2% interes

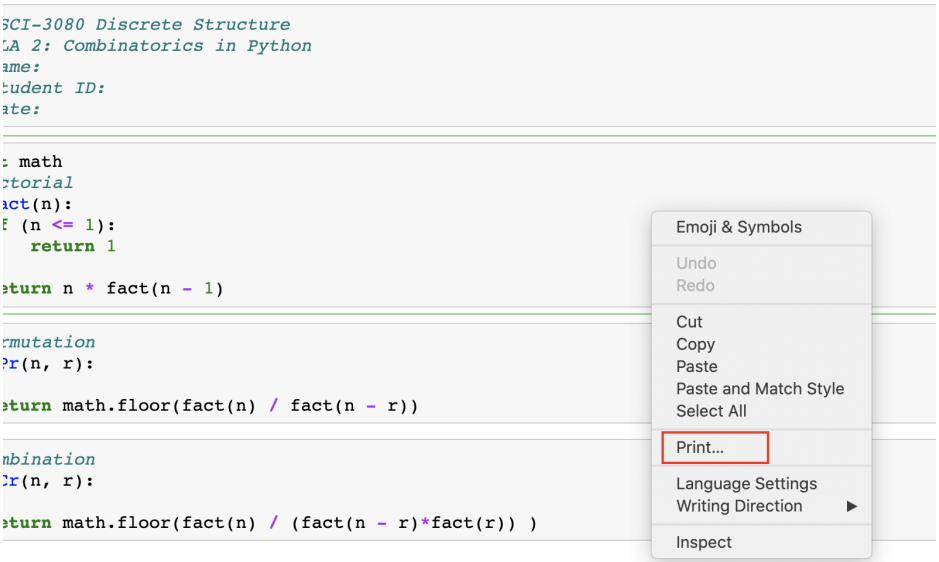
(3) Please fill in your Name, ID, and Date.
(4) Please finish all 6 exercises in Jupyter Notebook.

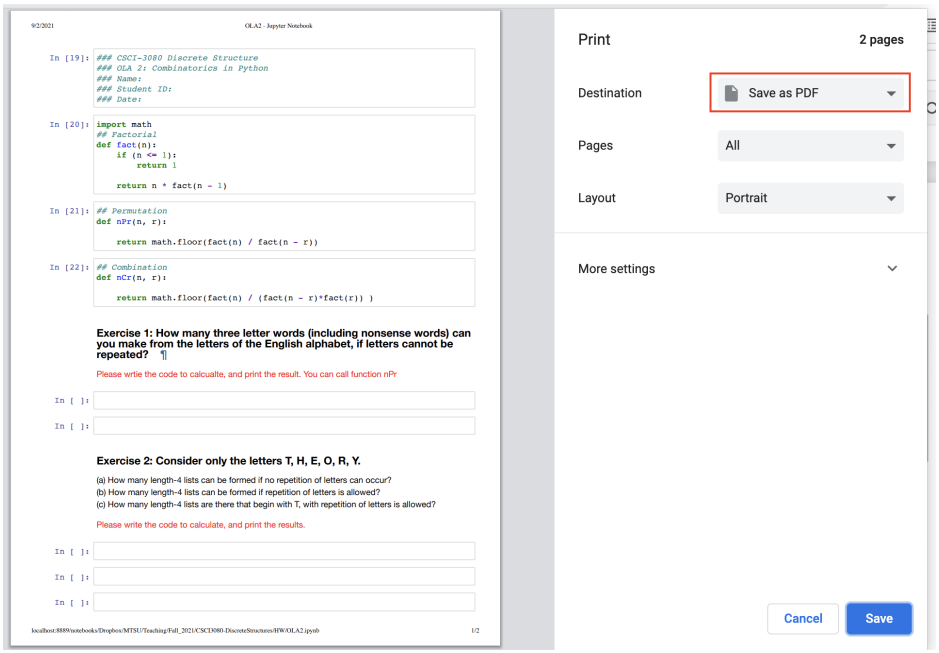
4. Save OLA3 as a PDF

(1) Please save your OLA3 as a PDF after you finish all the exercises.



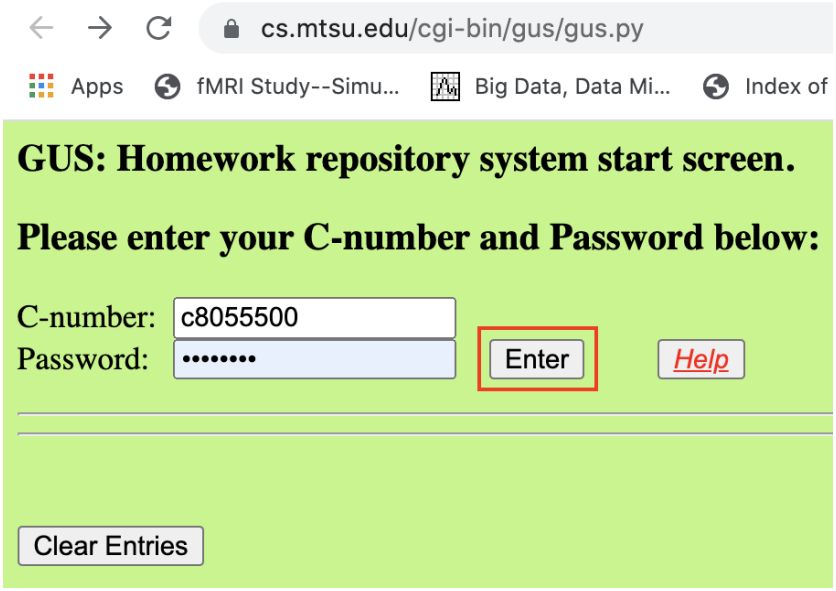
(2) If the above download as PDF doesn't work, please **right click** the Jupyter Notebook, then click **Print**, and **save as PDF**.





5. Submission

1. log in the gus sytem using your **cNumber** and **Password**:
`https://www.cs.mtsu.edu/cgi-bin/gus/gus.py`

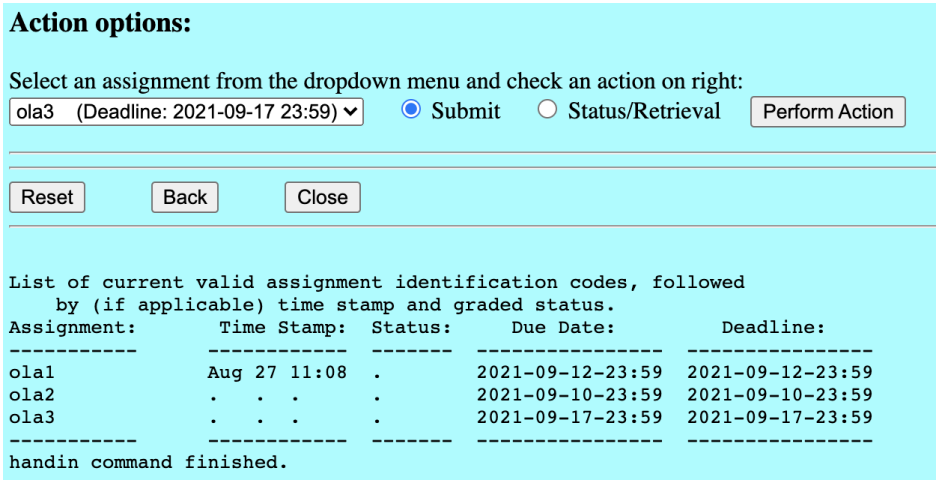


2.

(a) Select **ola3**from the drop-down menu.

(b) Click **Submit**

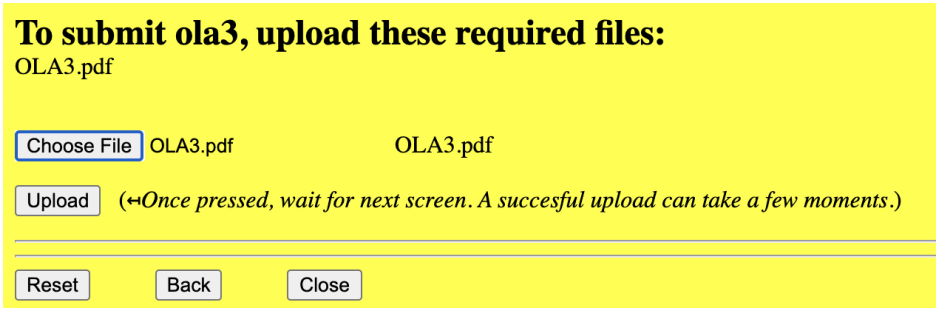
(c) Click **Perform Action**



3.

(a) click **Choose File** to attach your OLA3.pdf

(b) click **Upload**.



4. Congratulations! You are done with OLA3!