

MIDDLE TENNESSEE STATE UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE

CSCI-3080 DISCRETE STRUCTURE

---

## OLA7: Graphs and Trees

---

Instructor: Dr. Xin Yang

**Due date:** Nov 1st, 2021 (23:59 PM)

October 21, 2021



## 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/>



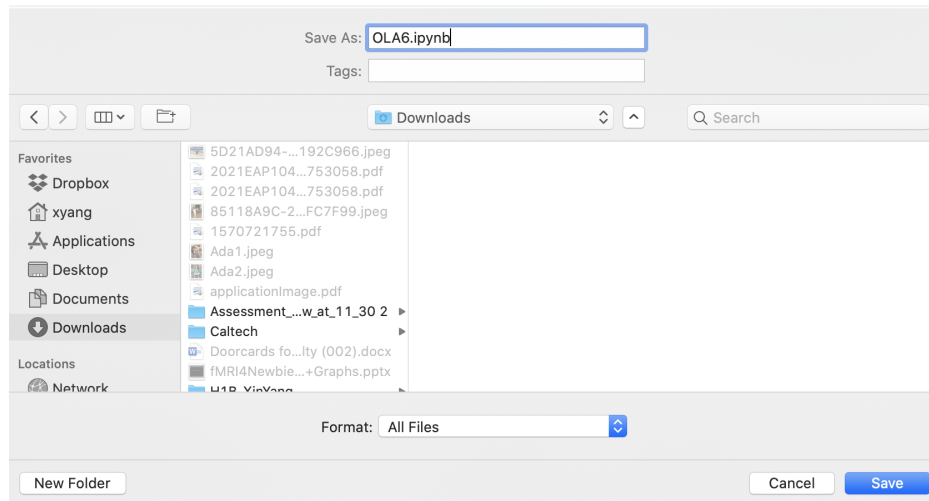
Figure 1: Anaconda: Data Science Platform

## 2. Download the Starter Jupyter Notebook

Please download the starter Jupyter Notebook (OLA7.ipynb) from my course calendar:

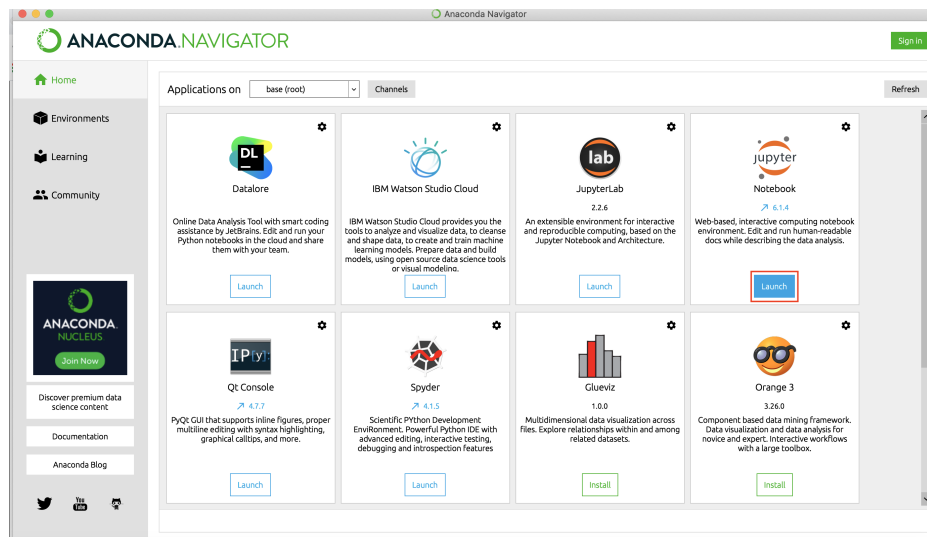
<https://www.cs.mtsu.edu/~xyang/3080/OLA/OLA7.ipynb>

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



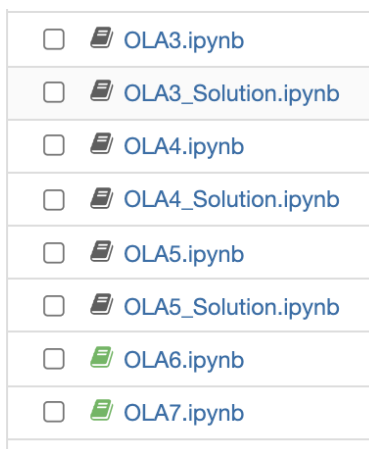
### 3. Launch Jupyter Notebook

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



## 4. Open Jupyter Notebook OLA6

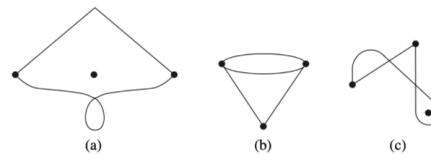
(1) Locate OLA7.ipynb in your Download Folder.



(2) You should see the following page after you click OLA7.ipynb :

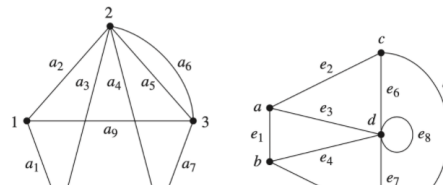
```
In [12]: ### CSCI-3080 Discrete Structure
### OLA 7: Chapter 6 -- Graphs and Trees
### Name:
### Student ID:
### Date:
```

1. Which of the following graphs is not isomorphic to the others, and why?



In [ ]:

2. Decide if the two graphs are isomorphic. If so, give the function or functions that not, explain why.



(3) Please fill in your Name, ID, and Date.

(4) Please finish all 8 exercises in Jupyter Notebook.

## 4. Save OLA7 as a PDF

(1) Please save your OLA7 as a PDF after you finish all the exercises. Please **right click** the Jupyter Notebook, then click **Print**, and **save as PDF**.

```
[ 2 ]: ### CSCI-3080 Discrete Structure
        ### OLA 6: Chapter 5 -- Matrices
        ### Name:
        ### Student ID:
        ### Date:
```

### Exercise 1: Find x and y if

$$\begin{pmatrix} 1 & 3 \\ x & x+y \end{pmatrix} = \begin{pmatrix} 1 & 3 \\ 2 & 6 \end{pmatrix}$$

```
[ ]:
```

### Exercise 2: Compute A + rD

$$\begin{pmatrix} 2 & 1 \end{pmatrix} \quad \begin{pmatrix} 4 & -6 \end{pmatrix}$$

Emoji & Symbols

Undo

Redo

Cut

Copy

Paste

Paste and Match Style

Select All

Print...

Language Settings

Writing Direction ►

Inspect

```

In [2]: ### CSCI-3080 Discrete Structure
        ### OLA 6: Chapter 5 -- Matrices
        ### Name:
        ### Student ID:
        ### Date:

```

**Exercise 1: Find x and y if**

$$\begin{pmatrix} 1 & 3 \\ x & x+y \end{pmatrix} = \begin{pmatrix} 1 & 3 \\ 2 & 6 \end{pmatrix}$$

In [ ]:

**Exercise 2: Compute A + rD**

$$A + rD = \begin{pmatrix} 2 & 1 \\ -1 & 0 \\ 3 & 4 \end{pmatrix} + 3 \begin{pmatrix} 4 & -6 \\ 1 & 3 \\ 2 & -1 \end{pmatrix} \quad \eta$$

In [ ]:

In [ ]:

**Exercise 3: Compute B·D**

$$B \cdot D = \begin{pmatrix} 4 & 1 & 2 \\ 6 & -1 & 5 \\ 1 & 3 & 2 \end{pmatrix} \cdot \begin{pmatrix} 4 & -6 \\ 1 & 3 \\ 2 & -1 \end{pmatrix}$$

In [ ]:

In [ ]:

**Exercise 4: Solve the system of equations using Gaussian Elimination**

Print 2 pages

Destination Save as PDF

Pages All

Layout Portrait

More settings

Cancel Save

at:8888/textbooks/Drupal/MTSU/Teaching/Fall\_2021/CSCI3080/DiscreteStructures/SW/OLA6.ipynb 1/2

## 5. Submission

1. log in the gus sytem using your **cNumber** and **Pass-word**:

<https://www.cs.mtsu.edu/cgi-bin/gus/gus.py>

cs.mtsu.edu/cgi-bin/gus/gus.py

Apps fMRI Study--Simu... Big Data, Data Mi... Index of

**GUS: Homework repository system start screen.**

**Please enter your C-number and Password below:**

C-number: c8055500

Password: ..... **Enter** [Help](#)

[Clear Entries](#)

2.

- (a) Select **ola7** from the drop-down menu.
- (b) Click **Submit**
- (c) Click **Perform Action**

**Action options:**

Select an assignment from the dropdown menu and check an action on right:

ola7 (Deadline: 2021-11-08 23:59) ☒ Submit ☐ Status/Retrieval [Perform Action](#)

[Reset](#) [Back](#) [Close](#)

List of current valid assignment identification codes, followed by (if applicable) time stamp and graded status.

Assignment:	Time Stamp:	Status:	Due Date:	Deadline:
-----	-----	-----	-----	-----

3.

- (a) click **Choose File** to attach your OLA7.pdf
- (b) click **Upload**.



## To submit ola7, upload these required files:

OLA7.pdf

Choose File

OLA7.pdf

OLA7.pdf

Upload

(←Once pressed, wait for next screen. A succesful upload can take a

No file chosen

Reset

Back

Close

### 4. Congratulations! You are done with OLA7!

```
Preparing ola7 submission of the following file(s):  
  /tmp/c8055500/*  
The following file(s) were successfully submitted:  
  OLA7.pdf                               Oct 21 15:02 c8055500    49113 bytes  
SUCCESS: ola7 submitted.
```

**Check status line above to see if submission was successful.**

Back

Close