

ITSE 1302 – Assignment 08

General Points

- Use the course material located at:
 - [Python Data Science Handbook](#)
- Assignment 08 can be completed using previously covered material and content from the following chapters:
 - 00.00-Preface *through* 01.08-More IPython Resources
- After completing the requirements, test to ensure all cells run correctly in the .ipynb file.
- Include appropriate markdown cells to identify the requirements below by number. See this [example](#).
- Produce an .html file that shows the .ipynb after a *successful test run*.
 - by File | Download as | HTML (.html) .
- Test the .html file by opening it in a browser and ensure the content is produced correctly from the run in Jupyter Notebook.
- Submit **BOTH** the .ipynb and .html files to the appropriate link in Blackboard | Assignments. Submit the .html file as a .zip file to pass security settings. Submit other files individually.
- Submit any additional files required to complete the assignment.

Requirements

(Ensure that all Requirements are complete)

1. Using Jupyter Notebook (or similar tool), create a file named:
 - assignment-08.ipynb
2. Add an H1 markup: “This is Assignment 08 - <yournamehere>”
3. Include appropriate markdown cells to identify the requirements below by number.

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4. Access three sources for definitions of Data Science. Include those definitions in a markdown cell. Include appropriate citations for the sources.
5. Demonstrate accessing the help system for five different topics.
6. Write a function *cube()* that raises an argument to the third power and returns that argument. Include a *docstring* in the function. Include a call to *cube()*.
7. Display the docstring and source code of *cube()* using the shortcuts shown in the online textbook.
8. Define a list *L*. Include *L*. in a code cell below *L* and press <TAB> to observe code completion. This display the methods are available to Python list objects.

```
In [8]: 1 L = [1, 2, 3]
```

```
In [ ]: 1 L.
```

append
 clear
 copy
 count
 extend
 index
 insert
 pop
 remove
 reverse

9. Demonstrate the use of tab completion with the import statement.
10. Demonstrate the use of wildcard matching.
11. Create a file *myscript.py* that includes the definition of *cube()* you wrote earlier and a for loop to call *cube()* multiple times. Use a magic command to

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run `myscript.py` from a code cell. Include `myscript.py` in your Bb submission so your code works when run.

12. Use a magic command to time an operation.
13. Demonstrate silently displaying output.
14. Demonstrate five different command console shell commands.
15. With `automagic` set to off, demonstrate five different shell-related magic commands.
16. With `automagic` set to on, demonstrate five different shell-related magic commands. Different from those in the previous requirement.
17. Demonstrate the use `%xmode` magic function.
18. Use `*Error?` to show the list of Python system exceptions. Demonstrate *throwing* three of these exception types (in separate code segments).
19. Demonstrate the use of the debugger with the exceptions thrown in the previous requirement.
20. Use at least 4 magic commands to time a function(s) that you have written.
21. Use markdown to include a statement at the end of `assignment-08.ipynb` explaining your experiences with Assignment 08. Make this authentic (minimum of 2-3 sentences).

TEST – TEST – TEST your `.ipynb` file to ensure all requirements are met.

Produce an `.html` file from a *successful test run* of the `.ipynb` file. Ensure that the `.html` is produced correctly by opening it in a browser.

- Use the list above as a confirmation checklist.
- Not meeting all requirements = 0 points for the assignment.