WEEK-1 FAQs

FREQUENTLY ASKED QUESTIONS
BASICS OF PYTHON

1. **Can we convert ‘ *int’* into ‘ *string’* datatype?**

Ans: Yes, we can convert an ‘ ***int’*** into a ‘ ***string’*** datatype, but the vice versa is not always
possible.
Example:

2. **What is anaconda distribution?**

Ans. Anaconda is a free and open-source distribution of the Python and R programming languages for scientific computing (data science, machine learning applications, large-scale data processing, predictive analytics, etc.), that aims to simplify package management and deployment.

3. **Why do we use Spyder? Can we use Pycharm?**

Ans. You can use PyCharm as well. From a teaching point of view Spyder provides a very good interface.

4. **What is the maximum number of variables that we can delete using "del a,b,c.....n"?**
Is it many or is there any limit to no.of variables?

Ans. There is no limit for deleting the variables. You can delete ‘n’ number of variables using del command.

5. **What is the full form of SAS and SPSS ?**

Ans. SAS-Statistical Analysis System & SPSS-Statistical Package for the Social Sciences

6. **What is the difference between data science and big data analytics?**

Ans. Data science is a multidisciplinary blend of data inference, algorithm development, and technology in order to solve analytically complex problems. Big data analytics is the use of advanced analytic techniques against very large, diverse data sets that include structured, semi-structured and unstructured data, from different sources, and in different
sizes from terabytes to zettabytes.

7. **Where to execute the command *cd* to change the working directory? Is it in command prompt or somewhere else? If it is command prompt how it gets affected**
by the Spyder tool?

Ans. You can use the spyder interface itself to set your directory using *cd* command. No need to use the command prompt.

8. **What is raw data?**

Ans. The data that is not processed for use is called raw data.

9. **Can we trace the program that we have written in spyder IDE?**

Ans. The history of the codes written in spyder IDE will be available in the *History log* tab.

10. **What is an IDE and why should we use IDE?**

Ans. An IDE stands for *Integrated Development Environment.* It is a software application

consisting of a cohesive unit of tools required for development. It is designed to simplify software development. Utilities provided by IDEs include tools for managing, compiling, deploying and debugging software.

11. **Can I use a jupyter notebook?**

Ans. If you are new to programming, better to use Spyder, if you are experienced, you can use jupyter.

12. **When is the assignment operator '==' used?**

Ans. The '==' operator is used to check if the values of the two variables are equal or not,
if it is equal it will return true or else it will return false.

13. **There are various editors available like notepad++ , visual studio etc . Why and where do you use it?**

Ans. Editors are used to run the python program as per your application..
Like spyder is used when you want to observe dataset in data science..
Jupyter is useful when you want to run the python program with its running notes, storing images links with it etc...

14. **How can I Clear Console?**

I am trying to clear the console (Output). I am trying to use %Clear. But it shows an error.

Ans. It's %clear(small c). Or else place the cursor in the console window and you can use
the shortcut key Ctrl+L from the keyboard.

15. **What is version control?**

Ans. Version control is a system that records changes to a file or set of files over time so
that you can recall specific versions later.

16. **Can we either work on pycharm ?**

Ans. Pycharm is the advanced version of python. You can use Pycharm if you are comfortable with it.

17. **What is the difference between pascal and camel case?**

Ans. Pascal- capitalizes each word ex: PascalCase
Camel Lower Casing - is similar to pascal case but the first word is not capitalized
Camel Upper Casing - is similar to pascal case but the first word is capitalized

18. **Can we save the file in any format ?**

Ans. You have to save a file in .py format in order to use it later.

19. **How to open multiple files in python spyder?**

Ans. Although clicking on the Spyder icon will not allow you to open two instances, you can open a second instance by simply going to the folder where spyder.py is and running
spyder.py from the command line.

20. **I have an excel sheet that has string values and I need to convert to float. But I'm getting an error Valueerror: could convert string to float. what to do in such cases?**

Ans. Not all string values can be converted to float. String values like '2' can be converted
to float since these are numerical values enclosed between quotes. However if you have a
string value 'ABC' you will not be able to convert them to float.

21. **How can I assign values to multiple variables in one instance?**

Ans.You can assign values to multiple variables at once then you can give as x,y=20,30

22. How important is precedence in an operator?

Ans. If more than one operator is involved in an expression, Python language has a predefined rule of priority for the operators. This rule of priority of operators is called operator precedence.

23. **What is the difference between anaconda software and the syder software?**

Ans. Anaconda is a tool box. It provides different IDEs. Spyder is one of the many IDEs that Anaconda provides.

24. **What about specifying data type for a variable that is not assigned a value. Should it**
be specified before hand or will python figure it out as the program progresses.

Ans. Python automatically figures out the datatype of each variable with value assigned to it.

25. **What is the relation between data science and python**

Ans. Python is a programming language.
Data science is a multidisciplinary blend of data inference, algorithm development, and technology in order to solve analytically complex problems.

26. How to set the working directory?

There are three ways to set a working directory

- Icon
- Using library os
- Using command cd

Using Icon:

Type the following in the console

Using library os:

Using command cd:

27. What are the basic data types in Python?

28. How to identify the datatype of an object?

Data type of object can be identified using the command **type(object)**

29. How to verify an object data type?

To verify if an object is of a certain data type the following syntax can be used:
type(object) is datatype

Example:

30. How to coerce objects to new data type?

- Convert the datatype of an object to another
- Syntax: **datatype(object)**
- Changes can be stored in same variable or in different variable

WEEK-2 FAQs

1. How to install spyder

Ans.

- To install spyder, through – ANACONDA NAVIGATOR, click on the link below: -

https://repo.anaconda.com/archive/

- Next choose the version based on the OS:
- Click on the version to download
- Post the download, run the setup file
- Set the path
- Open the ANACONDA NAVIGATOR - **Launch** spyder

2. How to download slide lectures?

Ans. You will find the lecture slides under the relevant week.

3. How to download lecture videos?

Ans. You will find the lecture videos under the **Download Videos** tab.

Sequence Data Types

1. In a list the sub level component index starts from 0 and the inner level elements start from 0 or 1…?

Ans. In python indexing starts from 0 to n-1. For sub level as well it starts from 0

2. Like tuple can we find out the length of the list?

Ans. Yes! We can find out the length of the list using *len()*

3. When List_1 is concatenated with List_2 , does the length of the List_1 change?

Ans. The length of the List_1 will not change unless you update it in the existing list. If we assign it to a new variable length of the list changes depending on the number of elements.

4. Can we find max and min for a tuple?

Ans. Yes! We can find maximum and minimum value for a tuple using max() and min() function.But the only condition is the values of the tuple should have the same datatype.

5. Is a list mutable or immutable and can its values be changed?.

Ans. List is mutable, we can change the value.

6. **How does one change the name of the key once assigned?.**

Ans. Keys cannot be changed. You need to add a new key with the modified value then remove the old one, or create a new dictionary with a new dictionary key.

7. **To insert an element in a list can we use *append()* instead of *insert()* ?**

Ans. *append* () can also be used. But it basically adds the element at the end. To add it in the specified position you can use the *insert()* .

8. **If an element occurs twice or thrice, does *remove* method remove all occurrences or only the first occurrence?**

Ans. *remove* method removes only the first occurrence of the value.

9. Is List a type of Data?

Ans. There are four collection data types in the Python programming language.
List is a collection which is ordered and changeable. Allows duplicate members.

10. How to change a particular element in tuple ?

Ans. Tuples are immutable, you cannot modify them once created.

11. **Can slicing be used on lists or only on tuples?**

Ans. Slicing can be used in lists as well.

12. **What if more than 2 words are repeated and we want to remove the word more than 2 so how can we use the *remove()* ?**

Ans. Kindly write a loop and execute the statements.

13. Why do we use dict_values? can we get simply the values.

Ans. Dictionary can be accessed by calling the key() or values(). Suppose we want to get
only values without dict_values, use the command list(dictionary_name.values())

14. **When I created a dictionary, The order in which I am creating and the order in which it prints is different.**

Ans. Dictionary will have key value pairs and stored in an unordered manner.

15. What makes tuples different from lists?

Ans. In lists you can add, modify and delete the elements.
Once tuple is created you will not be able to modify the elements.

16. Can we update the sub level list directly??ex. id[1]=3.

Ans.Yes! you can also do that. It automatically gets updated in the main list

17. What is a *Set* ?

Ans. *Set* is a collection which is unordered and unindexed. And it returns no duplicate members. So when you print the values of Set, you won't get it in the same order as you have created.

18. **Explain *immutability* ?**

Ans. Once an object is created you will not be able to modify the elements, that refers to immutability.

19. We print the combine tuple directly then it'll do any changes in the database ?I mean it will store the data forever or just will store on a temporary basis?

Ans.Combined tuple will be printed but it will not be updated.
You can store the combined tuple in variable for future purpose.

20. **Can we remove more than one object from a list?**

Ans.Yes! We can remove multiple elements. Kindly write a loop and remove the elements.

21. **How to use insert() in case of negative indexing? Does insert() function have positive**
indexing as default? .

Ans.Instead of positive indexing you can also specify the negative indexing value.

22. When we use a *pop* method whether it will print the pop element or not.

Ans. The *pop()* method removes the item at the given index and returns the removed item.

23. **What is meant by *String* in python?**

Ans. A string is a sequence of one or more characters (letters, numbers, symbols) that can
be either a constant or a variable. Made up of Unicode, strings are immutable sequences

24. **How to create *Strings* ?**

Ans. To create a string, enclose a sequence of characters inside single, double, triple quotes Example: strSample = 'learning'

25. **How to print strings?**

Ans. We can print out strings by simply calling the print() function

26. **What is *range()* in python?**

Ans. *range()* is a built-in function of Python. It is used when a user needs to perform an action for a specific number of times.

27. **Where do we use *range()* in general?**

Ans. *range()* is commonly used for looping hence, knowledge of the same is key aspect when dealing with any kind of Python code.

28. **How does *range()* work?**

Ans. *range()* takes mainly three arguments
start: integer starting from which the sequence of integers is to be returned
stop: integer before which the sequence of integers is to be returned
The range of integers end at stop – 1.
step: integer value which determines the increment between each integer in the sequence

Numpy

1. How to access two columns from an array at a time ?

Ans. To access the columns from the array please use the below code
a[:,0:2] ---> to access first and 2nd column

2. To add a new array to an existing array ,I have used the below code
np.append(a,[[10,11,14]],axis=0)
But it added in the end ,why?

Ans. It is due to the *append* function.
append adds the value at the end of the array.

3. **How do we know whether it is positive indexing or negative indexing ? Is there any**
command to know about indexing?

Ans. The positive index starts from 0 to n-1 (with positive sign)
Negative indexing is used to access elements from the end of a list
negative indexing starts from -1 to -(n) (with negative sign)

4. What does ":" mean while accessing the subset of the array?

Ans. The **:** operator slices a part from a sequence object such as list, tuple or string. It takes two arguments. First is the index of the start of slice and second is index of end of slice. Both operands are optional. If the first operand is omitted, it is 0 by default. If the second is omitted, it is set to the end of the sequence.
Example:

```
a=[1,2,3,4,5,6,7]
a[1:3]
[2, 3]
```

5. Why do we need to use the axis in insert() and delete() function?
Ans.delete() function is not available in python only del() is available and there is no axis in the insert() and del() function.
The insert() function takes two parameters:

- index - position where an element needs to be inserted
- element - this is the element to be inserted in the list

del() - The del keyword is used to delete objects. You can pass the variable name with the index value inside the braces.
6. **Why are we using axis while inserting an array?.**
Ans. To insert the new array along row wise we will use axis=0 and to add along column wise use axis=1.

WEEK-3 FAQs

on Pandas

1. How to add Pandas to spyder?

Ans-Import pandas as pd

2. Does Python support .xls and .xlsx formats ?

Ans-Yes, Python supports excel files. To read an excel file, follow the steps given below. Import pandas as pd xls = pd.read_excel('file_name.xls') xlsx = pd.read_excel('file_name.xlsx')

3. Instead of returning the data types for all columns, can the data type of single column be returned ?

Ans-Yes, the data type of a single column can be returned using the following command. (df1-name of the existing dataframe) df1['column_name'].dtypes Refer to the link to know more.

4. Is Iris_data_sample inbuilt data file in pandas?

Ans-No. This is a different dataset.

5. How do you find the directory where pandas directory in my pc?

Ans-You can find where pandas library is stored by using the following commands: import pandas pandas.__path__

6. How do you get the number of unique data types in a given dataframe?

Ans-Pandas dataframe.get_dtype_counts() function returns the counts of dtypes in the given dataframe. It returns a pandas series object containing the counts of all data types present in the pandas object.

7. How is the memory usage reduced when the data type is converted from object to category ?

Ans-Refer to the link below for information on categorical data in pandas.

8. The output for the .txt file does not read “??” and “###” values, instead it is showing the average values for the applicable column values.

Ans-Use any of the following codes to read the text data into Spyder: data_txt1=pd.read_table('Iris_data.txt',delimiter=" ") data_txt2=pd.read_csv('Iris_data.txt',delimiter=" ") Clear your console and environment variables and then try reading it again

. 9. How to find out if there are any duplicate values in a DataFrame ?

Ans-To find out duplicated values, use the pandas.DataFrame.duplicated() function.

10. How to get the list of in-built functions (most useful) in Python? Ans-There many useful functions in python. Please refer to documentation for each library.
11. How to import a .csv file?

Ans-To import .csv files, use the following command: pandas.read_csv("path") Refer to the documentation for a better understanding.

12. Are there any built in functions in python which display the statistical 5 point summary?

Ans-The function describe() from pandas library returns the statistical five-number summary.

13. What is difference between pandas.DataFrame.drop() and pandas.DataFrame.dropna() functions?

Ans-The function pandas.DataFrame.drop() removes rows or columns by specifying label names and corresponding axis, or by specifying directly index or column names The function pandas.DataFrame.dropna() drops rows with missing values. Refer to the documentation for more on which values are considered missing.

14. How do you deal with special or junk characters in data?

Ans-By converting special or junk characters to nan, the data cleaning process is made easy. This is because the pandas libraries offers several functions that help in handling nan values. For instance the function pandas.DataFrame.dropna() is

used to drop rows with nan values and pandas.DataFrame.fillna() is used to fill the nan values with the given value.

15. Is it necessary to import the library os for using the command cd?

Ans-No. The cd command works independent of any library.

16. What is categorical data?

Ans-Refer to the documentation to understand categorical data.

17. Which function is used to find the Spearman's correlation coefficient in python?

Ans-Refer to the link for information on Spearman correlation in python.

18. When there is only one 'nan' in the entire column then does the entire column become an object if the datatype was previously of category?

Ans-Yes. Refer to the link for further information.

19. In the function dataframe.select_dtypes(include=None,exclude=None') what do the arguments include and exclude mean and whatt is the difference between them?

Ans-The arguments include and exclude help you specify which datatypes you want to select from the dataframe. Refer to the link for further information.

20. When used with the apply() function, is lambda like a for or while loop where x takes all the values of the columns until it has filled missing values?

Ans-The lambda function returns a value based on the conditions specified and apply functions applies it across rows /columns. Refer to the link for an in depth understanding.

21. How are values between a specific index range accessed?

Ans-If df is the name of the dataframe, then df.at() is used for accessing single values from a dataframe. In order to access a range of values from a dataframe, the df.loc() or df.iloc() functions can be used. Refer to the link below for further information.

22. Can a dataframe be multi-dimensional?

Ans-No. A data frame consists of only 2 dimensions i.e. rows and columns. Each column stores data corresponding to a specific dimension.

23. How to select two or three columns from data frame?

Ans-There many ways to select multiple columns from a dataframe. Refer to links below to know how to select different multiple columns from a dataframe. Reference1 Reference 2