

Python for Data Science – Assignment 1

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MCQ questions –

1. Which of the following statement is invalid?
 - a. `m_n_q = 3500`
 - b. `m.n.q = 3500, 3600, 3700`
 - c. `m,n,q = 3500, 3600, 3700`
 - d. `mnq = 350036003700`

Ans = `m.n.q = 3500, 3600, 3700`

2. How can you concatenate the strings “data” and “science” with a hyphen(-) between them?
 - a. `“data”.join(“science”)`
 - b. `“-”.join([“data”, “science”])`
 - c. `“data” + “-” + “science”`
 - d. None of the above.

Ans = `“-”.join([“data”, “science”])`
`“data” + “-” + “science”`

Descriptive questions

1. Answer the following questions –
 - a. `student = {'name': 'Jane', 'age': 25, 'courses': ['Math', 'Statistics']}`
Write the code to return this
`{'name': 'Jane', 'age': 26, 'courses': ['Math', 'Statistics'], 'phone': '123-456'}`
 - b. What will be the output of the following code
`import numpy as np`
`a = np.arange(10)`
`b = a[1:5]`
`b[0] = 10`
`print(a)`
 - c. Consider the list,
`Mylist=['a', 'a', 'b', 'b', 'b', 'c', 'c', 'd', 'e']`
The output of the code: `Mylist.index('d')` is

Answer

1.
 - a. `student['age'] = 26`
`student['phone'] = '123-456'`
`print(student)`
 - b. `[0 10 2 3 4 5 6 7 8 9]`
 - c. `7`

2. Answer the following

- a. Explain the difference between- Tuple and Set
- b. Explain the terms –
 - i. Numpy
 - ii. Rank
 - iii. Dictionary

Answer

- a. Difference between Tuple and Set

Feature	Tuple	Set
Definition	Ordered collection of elements	Unordered collection of unique elements
Duplicates	Allowed	Not allowed
Indexing	Supports indexing & slicing	Does not support indexing (unordered)
Mutability	Immutable (cannot change after creation)	Mutable (can add/remove elements)
Syntax	(1,2,3)	{1,2,3}

- b. i. Numpy

package for numerical computations

supports n dimensional array

Much faster than Python lists for numerical data.

- ii. Rank

In NumPy, rank = number of dimensions (axes) of an array.

Example:

[1,2,3] → rank 1

[[1,2],[3,4]] → rank 2

- iii. Dictionary

A Python key-value pair data structure.

Keys are unique & immutable, values can be anything.

Example:

```
student = {"name": "Jane", "age": 25}
```