ASSIGNMENT-1

EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES

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Maximum Mark	**2** mark

Basic Python

1. Split this string

s = "Hi there Sam!"

s = "Hi there Sam!"

s.split()

2. Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

planet = "Earth"

diameter = 12742

planet = "Earth"

diameter = 12742

print("The diameter of {} is {} kilometers.".format(planet,diameter))

3. In this nest dictionary grab the word "hello"

d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

d['k1'][3]['tricky'][3]['target'][3]

Numpy

import numpy as np

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

import numpy as np

array=np.zeros(10)

print(array)

```
import numpy as np

array=np.ones(10)*5

print(array)

## 5. Create an array of all the even integers from 20 to 35

array=np.arange(20,35,2)

print(array)

## 6. Create a 3x3 matrix with values ranging from 0 to 8

arr=np.arange(0,9).reshape(3,3)

print(arr)

## 7. Concatinate a and b

## a = np.array([1, 2, 3]), b = np.array([4, 5, 6])

a = np.array([1, 2, 3])

b = np.array([4, 5, 6])

np.concatenate((a,b))


# Pandas

## 8. Create a dataframe with 3 rows and 2 columns

import pandas as pd

import numpy as np


exam_data  = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura',
'Kevin', 'Jonas'],

        'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19]}


labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']
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```
df = pd.DataFrame(exam_data , index=labels)
print("First three rows of the data frame:")
print(df.iloc[:3])

## 9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023
from datetime import date, timedelta

start_date = date (2023,1,1)   # start date
end_date = date (2023,2,10)   # end date

def dates_bwn_twodates(start_date, end_date):
    for n in range(int ((end_date - start_date).days)):
        yield start_date + timedelta(n)
print(list(dates_bwn_twodates(start_date,end_date)))

## 10. Create 2D list to DataFrame

lists = [[1, 'aaa', 22],
         [2, 'bbb', 25],
         [3, 'ccc', 24]]
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
import pandas as pd

# List1
lst = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

```
# creating df object with columns specified

df = pd.DataFrame(lst, columns =['Firstnum', 'Letter', 'Lastnum'],

                                  dtype = float)

print(df )
```