

# MI Assignment - Week 1

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Date : 11-08-2022

Source Code :

```
from random import seed
import numpy as np
import pandas as pd

def create_numpy_ones_array(shape):
    array=None
    #TODO
    array = np.ones(shape)
    return array

def create_numpy_zeros_array(shape):
    array=None
    #TODO
    array = np.zeros(shape)
    return array

def create_identity_numpy_array(order):
    array=None
    #TODO
    array=np.identity(order)
    return array

def matrix_cofactor(array):

    determinant = np.linalg.det(array)
```

```

array1=None
#TODO
array1 = np.linalg.inv(array).T * determinant
return array1

def f1(X1,coef1,X2,coef2,seed1,seed2,seed3,shape1,shape2):
    ans = None
    W1 = None
    W2 = None
    np.random.seed(seed1)
    W1 = np.random.random(shape1)
    np.random.seed(seed2)
    W2 = np.random.random(shape2)
    f1 = W1.shape
    f2 = W2.shape
    f3 = X1.shape
    f4 = X2.shape
    if(f1[1] != f3[0] or f2[1] != f4[0]):
        ans = -1
        return ans
    X1=X1**coef1
    X2=X2**coef2
    W1 = W1.dot(X1)
    W2 = W2.dot(X2)
    if(W1.shape == W2.shape):
        ans = W1+W2+seed3
        return ans
    else:
        ans = -1
        return ans

    # TODO

def fill_with_mode(filename, column):
    df= pd.read_csv(filename)
    df[column]=df[column].fillna(df[column].mode()[0])
    return df

```

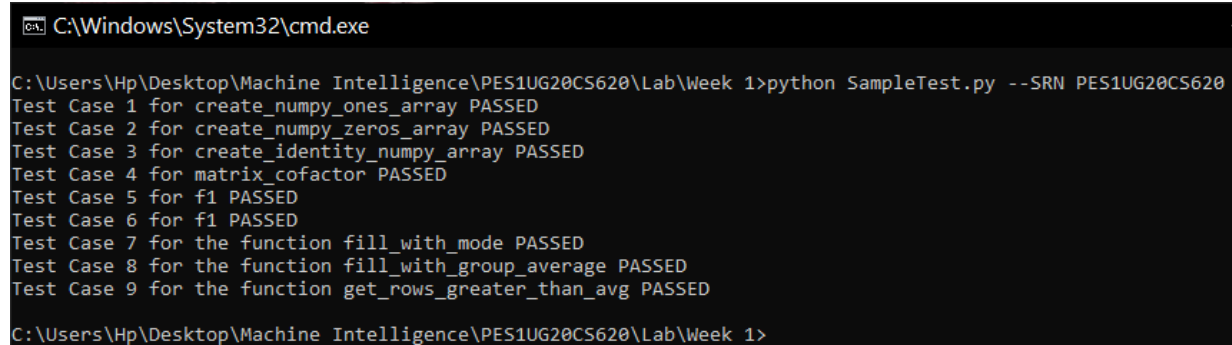
```
def fill_with_group_average(df, group, column):
df[column]=df[column].fillna(df.groupby(group)[column].transform('mean'))

    return df


def get_rows_greater_than_avg(df, column):
    # df=None
    # return df

    return df[df[column] > df[column].mean()]
```

## Output Screenshot:



```
C:\Windows\System32\cmd.exe

C:\Users\Hp\Desktop\Machine Intelligence\PES1UG20CS620\Lab\Week 1>python SampleTest.py --SRN PES1UG20CS620
Test Case 1 for create_numpy_ones_array PASSED
Test Case 2 for create_numpy_zeros_array PASSED
Test Case 3 for create_identity_numpy_array PASSED
Test Case 4 for matrix_cofactor PASSED
Test Case 5 for f1 PASSED
Test Case 6 for f1 PASSED
Test Case 7 for the function fill_with_mode PASSED
Test Case 8 for the function fill_with_group_average PASSED
Test Case 9 for the function get_rows_greater_than_avg PASSED

C:\Users\Hp\Desktop\Machine Intelligence\PES1UG20CS620\Lab\Week 1>
```