

MI Assignment - Week 1

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SRN : PES1UG20CS620

Roll No : 54

Date : 11-08-2022

Source Code :

```
PES1UG20CS620.py M X
PES1UG20CS620.py > create_numpy_ones_array

1
2 from random import seed
3 import numpy as np
4 import pandas as pd
5
6
7 def create_numpy_ones_array(shape):
8     array=None
9     #TODO
10    array = np.ones(shape)
11    return array
12
13 def create_numpy_zeros_array(shape):
14     array=None
15     #TODO
16    array = np.zeros(shape)
17    return array
18
19 def create_identity_numpy_array(order):
20     array=None
21     #TODO
22    array=np.identity(order)
23    return array
24
25 def matrix_cofactor(array):
26     determinant = np.linalg.det(array)
27     array1=None
28     #TODO
29    array1 = np.linalg.inv(array).T * determinant
30    return array1
31
```

```

PES1UG20CS620.py M X
PES1UG20CS620.py > create_numpy_ones_array
32 def f1(X1,coef1,X2,coef2,seed1,seed2,seed3,shape1,shape2):
33     ans = None
34     W1 = None
35     W2 = None
36     np.random.seed(seed1)
37     W1 = np.random.random(shape1)
38     np.random.seed(seed2)
39     W2 = np.random.random(shape2)
40     f1 = W1.shape
41     f2 = W2.shape
42     f3 = X1.shape
43     f4 = X2.shape
44     if(f1[1] != f3[0] or f2[1] != f4[0]):
45         ans = -1
46         return ans
47     X1=X1**coef1
48     X2=X2**coef2
49     W1 = W1.dot(X1)
50     W2 = W2.dot(X2)
51     if(W1.shape == W2.shape):
52         ans = W1+W2+seed3
53         return ans
54     else:
55         ans = -1
56         return ans
57
58     # TODO
59
60
61 def fill_with_mode(filename, column):
62     df= pd.read_csv(filename)

```

```

PES1UG20CS620.py M X
PES1UG20CS620.py > create_numpy_ones_array
60
61 def fill_with_mode(filename, column):
62     df= pd.read_csv(filename)
63     df[column]=df[column].fillna(df[column].mode()[0])
64     return df
65
66 def fill_with_group_average(df, group, column):
67     df[column]=df[column].fillna(df.groupby(group)[column].transform('mean'))
68     return df
69
70
71 def get_rows_greater_than_avg(df, column):
72     # df=None
73     # return df
74     return df[df[column] > df[column].mean()]
75
76

```

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>
```