

## DWDM MODEL LAB

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1. Download a sample dataset from any Repository. List the attributes and its type in a word Doc.

sl_no	gender	ssc_p	ssc_b	hsc_p	hsc_b	hsc_s	degree_p	degree_t	workex	etest_p	specialisa	mba_p	status	salary
1	M	67	Others	91	Others	Commerce	58	Sci&Tech	No	55	Mkt&HR	58.8	Placed	270000
2	M	79.33	Central	78.33	Others	Science	77.48	Sci&Tech	Yes	86.5	Mkt&Fin	66.28	Placed	200000
4	M	65	Central	68	Central	Arts	64	Comm&M	No	75	Mkt&Fin	57.8	Placed	250000
5	M	56	Central	52	Central	Science	52	Sci&Tech	No	66	Mkt&HR	59.43	Not Placed	
6	M	85.8	Central	73.6	Central	Commerce	73.3	Comm&M	No	96.8	Mkt&Fin	55.5	Placed	425000
7	M	55	Others	49.8	Others	Science	67.25	Sci&Tech	Yes	55	Mkt&Fin	51.58	Not Placed	
8	F	46	Others	49.2	Others	Commerce	79	Comm&M	No	74.28	Mkt&Fin	53.29	Not Placed	
9	M	82	Central	64	Central	Science	66	Sci&Tech	Yes	67	Mkt&Fin	62.14	Placed	252000
10	M	73	Central	79	Central	Commerce	72	Comm&M	No	91.34	Mkt&Fin	61.29	Placed	231000
11	M	58	Central	70	Central	Commerce	61	Comm&M	No	54	Mkt&Fin	52.21	Not Placed	
12	M	58	Central	61	Central	Commerce	60	Comm&M	Yes	62	Mkt&HR	60.85	Placed	260000
13	M	69.6	Central	68.4	Central	Commerce	78.3	Comm&M	Yes	60	Mkt&Fin	63.7	Placed	250000
14	F	47	Central	55	Others	Science	65	Comm&M	No	62	Mkt&HR	65.04	Not Placed	
15	F	77	Central	87	Central	Commerce	59	Comm&M	No	68	Mkt&Fin	68.63	Placed	218000
16	M	62	Central	47	Central	Commerce	50	Comm&M	No	76	Mkt&HR	54.96	Not Placed	
17	F	65	Central	75	Central	Commerce	69	Comm&M	Yes	72	Mkt&Fin	64.66	Placed	200000
18	M	63	Central	66.2	Central	Commerce	65.6	Comm&M	Yes	60	Mkt&Fin	62.54	Placed	300000
19	F	55	Central	67	Central	Commerce	64	Comm&M	No	60	Mkt&Fin	67.28	Not Placed	
20	F	63	Central	66	Central	Commerce	64	Comm&M	No	68	Mkt&HR	64.08	Not Placed	
21	M	60	Others	67	Others	Arts	70	Comm&M	Yes	50.48	Mkt&Fin	77.89	Placed	236000
22	M	62	Others	65	Others	Commerce	66	Comm&M	No	50	Mkt&HR	56.7	Placed	265000
23	F	79	Others	76	Others	Commerce	85	Comm&M	No	95	Mkt&Fin	69.06	Placed	393000

ATTRIBUTE	TYPE
sl_no	NUMERIC
gender	SYMMETRIC BINARY
ssc_p	NUMERIC
ssc_b	NOMINAL
hsc_p	NUMERIC
Hsc_b	NOMINAL
Degree_p	NUMERIC
Degree_t	NOMINAL
workex	ASYMMETRIC
Etest_p	NUMERIC
specialisation	NOMINAL
Mba_p	NUMERIC
status	ASYMMETRIC BINARY
salary	NUMERIC
Hsc_s	NOMINAL

**2.Create a random dataset of 30 elements with x and y variables using random function between 30 to 80 integers for x and 60 to 100 integers for y. Apply K- means clustering to cluster the data into 2 clusters. Plot the graph and display the result. Use Tkinter GUI to Display the Results.**

```
In [21]: import numpy as np
from pandas import DataFrame
Data={'X' : np.random.randint(30,80,30),
'Y' : np.random.randint(60,100,30)}
df = DataFrame(Data,columns=['X','Y'])
print(df)
```

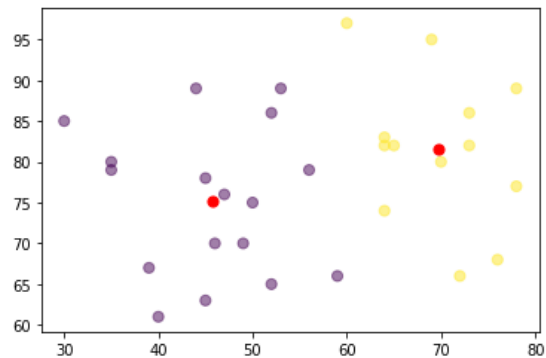
	X	Y
0	35	80
1	64	82
2	47	76
3	65	82
4	64	74
5	45	78
6	39	67
7	44	89
8	53	89
9	78	77
10	60	97
11	73	82
12	72	66
13	52	86
14	30	85
15	59	66
16	69	95
17	70	80
18	45	63
19	35	79
20	46	70
21	52	65
22	50	75
23	78	89
24	73	86
25	49	70
26	76	68
27	56	79
28	64	83
29	40	61

```
In [22]: import matplotlib.pyplot as plt
from sklearn.cluster import KMeans

kmeans = KMeans(n_clusters=2).fit(df)
centroids = kmeans.cluster_centers_
print(centroids)

plt.scatter(df['X'], df['Y'], c= kmeans.labels_.astype(float), s=50, alpha=0.5)
plt.scatter(centroids[:, 0], centroids[:, 1], c='red', s=50)
plt.show()

[[45.70588235 75.17647059]
 [69.69230769 81.61538462]]
```



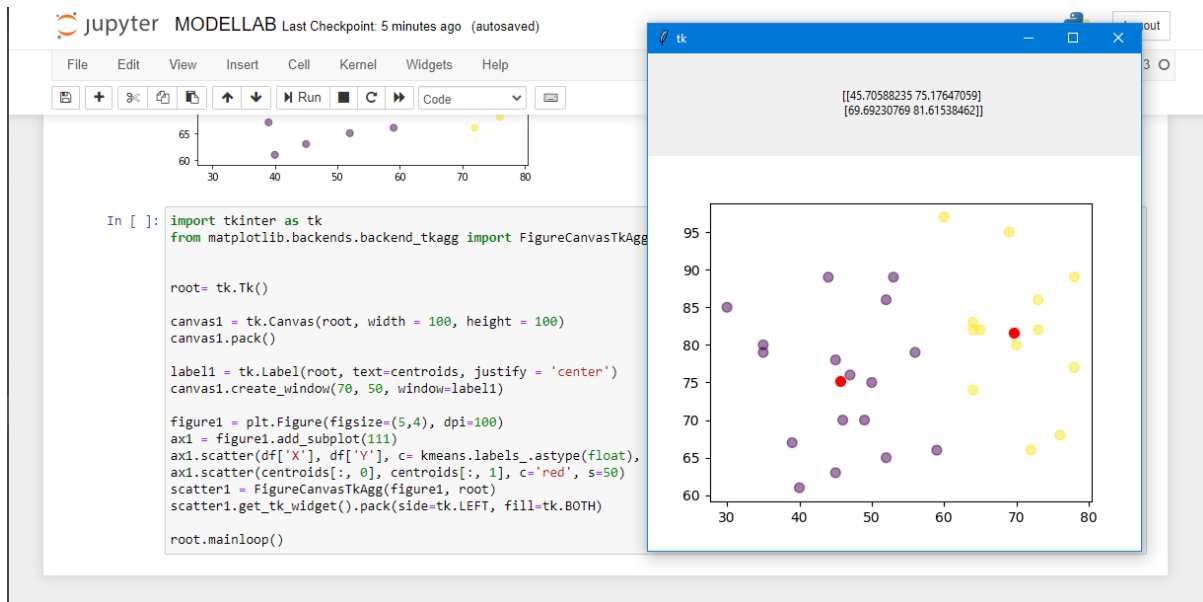
```
In [13]: import tkinter as tk
from matplotlib.backends.backend_tkagg import FigureCanvasTkAgg

root= tk.Tk()
|
canvas1 = tk.Canvas(root, width = 100, height = 100)
canvas1.pack()

label1 = tk.Label(root, text=centroids, justify = 'center')
canvas1.create_window(70, 50, window=label1)

figure1 = plt.figure(figsize=(5,4), dpi=100)
ax1 = figure1.add_subplot(111)
ax1.scatter(df['X'], df['Y'], c= kmeans.labels_.astype(float), s=50, alpha=0.5)
ax1.scatter(centroids[:, 0], centroids[:, 1], c='red', s=50)
scatter1 = FigureCanvasTkAgg(figure1, root)
scatter1.get_tk_widget().pack(side=tk.LEFT, fill=tk.BOTH)

root.mainloop()
```



**3.Upload in your github account. Provide the link for access.**

[https://github.com/Praveenvidor/Dataset/blob/main/Placement\\_Data\\_Full\\_Class.csv](https://github.com/Praveenvidor/Dataset/blob/main/Placement_Data_Full_Class.csv)