## Name: Arul kumar ARK

Roll No.: 225229103

## Lab 6:

```
In [ ]:
                                                           Pandas Data Cleaning
 In [1]: import pandas as pd
          df = pd.read_csv("train_hr.csv")
          df.head(10)
 Out[1]:
                                                                                                                                           KPIs_met >80%
              employee_id department
                                        region education gender recruitment_channel no_of_trainings age previous_year_rating length_of_service
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                            Marketing
In [21]: column_names = df.columns
          print(column_names)
          df.dtypes
          for i in column names:
              print("{} is unique : {}".format(i,df[i].is_unique))
          Index(['department', 'region', 'education', 'gender', 'recruitment_channel',
                   'no_of_trainings', 'age', 'awards_won?', 'avg_training_score',
                  'is_promoted'],
                 dtype='object')
          department is unique : False
          region is unique : False
          education is unique : False
          gender is unique : False
          recruitment_channel is unique : False
          no_of_trainings is unique : False
          age is unique : False
          awards_won? is unique : False
          avg_training_score is unique : False
          is_promoted is unique : False
 In [3]: df.index.values
                                      2, ..., 54805, 54806, 54807], dtype=int64)
 Out[3]: array([
 In [4]: 0 in df.index.values
 Out[4]: True
 In [5]: df.set_index("employee_id",inplace=True)
```

:	department	region	education	gender	recruitment_channel	no_of_training	gs age	previou	s_year_rating	length_of_service	KPIs_me >80%	t awar
employee_id												
65438	Sales & Marketing	region_7	Master's 8 above		sourcing		1 35		5.0	8		1
65141	Operations	region_22	Bachelor's	m m	other		1 30		5.0	4		)
7513	Sales & Marketing	region_19	Bachelor's	m m	sourcing		1 34		3.0	7		)
2542	Sales & Marketing	region_23	Bachelor's	m m	other		2 39		1.0	10		)
48945	Technology	region_26	Bachelor's	m m	other		1 45		3.0	2		)
3030	Technology	region_14	Bachelor's	m m	sourcing		1 48		3.0	17		)
74592	Operations	region_27	Master's 8 above		other		1 37		2.0	6		)
13918	Analytics	region_1	Bachelor's	m m	other		1 27		5.0	3		1
13614	Sales & Marketing	region_9	NaN	m	sourcing		1 29		1.0	2		)
51526	HR	region 22	Bachelor's	m	other		1 27		1.0	5		)
54808 rows >		Lumn_nam	es[i] for	' i in [8	,9,10]]							
4	_drop = [col				,9,10]]							
: columns_to_	_drop = [col				,9,10]]							
columns_to_ df.drop(col df	_drop = [col	op, inpla		axis=1)	,9,10]]	nt_channel no	o_of_train	nings a	ge awards_w	on? avg_training_	score is_	promot
<pre>columns_to_ df.drop(col df  employee_id</pre>	_drop = [co. Lumns_to_dro departm	op, inpla	ace=True	axis=1)	gender recruitme		o_of_train					promot
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54808 rows × 10 columns

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In [10]: df['department'] = df['department'].fillna(' ')
           df
Out[10]:
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In [11]: df['education'] = df['education'].fillna(99)
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           df['age'] = df['age'].fillna(df['age'].mean())
In [12]:
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           54808 rows × 10 columns
In [13]: import numpy as np
```

```
In [14]: df1 = pd.DataFrame(data={'col1':[np.nan,np.nan,2,3,4,np.nan,np.nan]})
In [15]: df1.fillna(method='pad', limit=1)
Out[15]: col1
         0 NaN
         1 NaN
         2 2.0
         3 3.0
         4 4.0
         5 4.0
         6 NaN
In [16]: df1.fillna(method='pad', limit=1)
Out[16]:
          col1
         0 NaN
         1 NaN
         2 2.0
         3 3.0
         4 4.0
         5 4.0
         6 NaN
In [17]: df1.fillna(method = 'bfill')
Out[17]: col1
         0 2.0
         1 2.0
         2 2.0
         3 3.0
         4 4.0
         5 NaN
         6 NaN
In [18]: df1.dropna()
Out[18]: col1
         2 2.0
         3 3.0
         4 4.0
In [19]: df1.dropna(axis=1)
Out[19]: _____
         1
         2
         3
         5
         6
```