Problem Statements

For HackerEarth's ML Challenge (June-July, 2020)

The problem statements can be found on the below link:

https://www.hackerearth.com/challenges/competitive/hackerearth-machine-learning-challenge-predict-employee-attrition-rate/problems/

You can try and solve the challenge and get your score using the below link:

https://www.hackerearth.com/challenges/competitive/hackerearth-machine-learning-challenge-predict-employee-attrition-rate/?utm_source=challenges-modern&utm_campaign=participated-challenges&utm_medium=right-panel

Problem 1

Employees are the most important part of an organization. Successful employees meet deadlines, make sales, and build the brand through positive customer interactions.

Employee attrition is a major cost to an organization and predicting such attritions is the most important requirement of the Human Resources department in many organizations. In this problem, your task is to predict the attrition rate of employees of an organization.

Data

- Train.csv
- Test.csv
- sample_submission.csv

Variable Description	
Column Name	**Description**
Employee_ID	Unique ID of each employee
Age	Age of each employee
Unit	Department under which the employee work
Education	Rating of Qualification of an employee (1-5)
Gender	Male-0 or Female-1
Decision_skill_possess	Decision skill that an employee possesses

Post_Level	Level of the post in an organization (1-5)
Relationship_Status	Categorical Married or Single
Pay_Scale	Rate in between 1 to 10
Time_of_service	Years in the organization
growth_rate	Growth rate in percentage of an employee
Time_since_promotion	Time in years since the last promotion
Work_Life_balance	Rating for work-life balance given by an employee.
Travel_Rate	Rating based on travel history(1-3)
Hometown	Name of the city
Compensation_and_Benefits	Categorical Variabe
VAR1 - VAR5	Anominised variables
Attrition_rate(TARGET VARIABLE)	Attrition rate of each employee

Submission format

You are required to write your predictions in a **.csv** file that contain the following columns:

- Employee_ID
- Attrition_rate

Evaluation criteria

The evaluation metric that is used for this problem is the **root mean squared error**. The formula is as follows:

```
score=100*max(0,1-root_mean_squared_error(actual_values, predicted_values))
```

Problem 2

Find the employee ID and name of all the female employees who work in the Sales department whose:

- Time since the last promotion has exceeded 1 year
- Pay scale is above 4.0.

You must order your answer by employee's name.

Table Description

Employee	
Column	**Type**
Employee_ID	varchar(10)
Age	int
Education	int
Relationship_Status	varchar(10)
Hometown	varchar(10)
Name	varchar(30)
Gender	varchar(1)

Service	
Column	**Type**
Employee_ID	varchar(10)
Unit	varchar(10)
Post_Level	int
Time_since_promotion	int
Time_of_service	float
Pay_Scale	float
Collaboration_and_Teamwork	int
Compensation_and_Benefits	varchar(10)

Sample

Refer the following sample tables and output:

Employee						
Employee_ID	**Age**	**Education**	**Relationship_Status**	**Hometown**	**Name**	**Gender**
EID_7044	47	4	Married	Franklin	Paul Jones	M
EID_11061	43	3	Married	Springfield	Roger Reyes	M
EID_4392	64	4	Single	Franklin	Shane Martin	M
EID_13606	27	3	Married	Franklin	Christopher Huynh	M
EID_7656	45	5	Married	Lebanon	Jacob Leblanc	M
EID_8156	44	4	Single	Clinton	Colleen Strong	F
EID_3577	64	4	Single	Washington	James Wise	M
EID_5730	50	4	Married	Springfield	Brenda Marquez	F

EID_6064	65	1	Married	Franklin	Robert George	M

Service							
Employee_ID	**Unit**	**Post_Level**	**Time_since_promotion**	**Time_of_service**	**Pay_Scale**	**Collaboration_and_Teamwork**	**Compensation_and_Benefits**
EID_7044	Sales	2	1	9	8.0	4	type4
EID_11061	Sales	3	2	14	10.0	4	type2
EID_4392	Logistics	3	1	26	5.0	2	type2
EID_13606	Human Resource Management	5	3	3	6.0	3	type3
EID_7656	Purchasing	1	4	7	8.0	3	type3
EID_8156	Purchasing	1	1	21	5.0	3	type2
EID_3577	Purchasing	5	2	32	7.0	4	type2
EID_5730	Sales	2	4	25	9.0	5	type2
EID_6064	IT	2	2	37	1.0	4	type2

Output	
Employee_ID	**Name**
EID_5730	Brenda Marquez