

# Attrition Risk Analyzer (v 2 . 0 )

## Objective

Analyze IBM HR Attrition dataset to identify attrition patterns and create a simple attrition risk flag

## Step 1 : Load the Dataset

Dataset: IBM HR Analytics Attrition Dataset (Kaggle)

File: `WA_Fn-UseC_-HR-Employee-Attrition.csv`

Shape of data: (1470, 35)

```
Out[4]:
```

	Age	Attrition	BusinessTravel	DailyRate	Department	DistanceFromHome	Educ
0	4 1	Yes	Travel_Rarely	1 1 0 2	Sales		1
1	4 9	No	Travel_Frequently	2 7 9	Research & Development		8
2	3 7	Yes	Travel_Rarely	1 3 7 3	Research & Development		2
3	3 3	No	Travel_Frequently	1 3 9 2	Research & Development		3
4	2 7	No	Travel_Rarely	5 9 1	Research & Development		2

5 rows × 3 5 columns

## Step 2 : Attrition Overview

Check how many employees have left (Attrition = Yes) vs stayed (Attrition = No).

```
Out[5]: Attrition
No      1233
Yes      237
Name: count, dtype: int64
```

## Step 3 : Attrition by Job Role

See how attrition is distributed across different job roles.

Out[6]:

	Attrition		No	Yes	
	JobRole				
Healthcare Representative	1	2	2	9	
Human Resources	4	0	1	2	
Laboratory Technician	1	9	7	6	2
Manager	9	7	5		
Manufacturing Director	1	3	5	1	0
Research Director	7	8	2		
Research Scientist	2	4	5	4	7
Sales Executive	2	6	9	5	7
Sales Representative	5	0	3	3	

## Step 4 : Create Attrition Risk Flag

We will add a new column: 1 if Attrition = Yes, else 0 .

Out[7]:

	JobRole	Attrition	AttritionRisk
0	Sales Executive	Yes	1
1	Research Scientist	No	0
2	Laboratory Technician	Yes	1
3	Research Scientist	No	0
4	Laboratory Technician	No	0

## Step 5 : Save Processed Dataset

This file will be useful for visualizations and further analysis.

Processed dataset saved as processed\_hr\_data.csv 

## Part 2 : Visualizations

Now let's explore attrition patterns with charts.

### Chart- 1 Overall Attrition Count

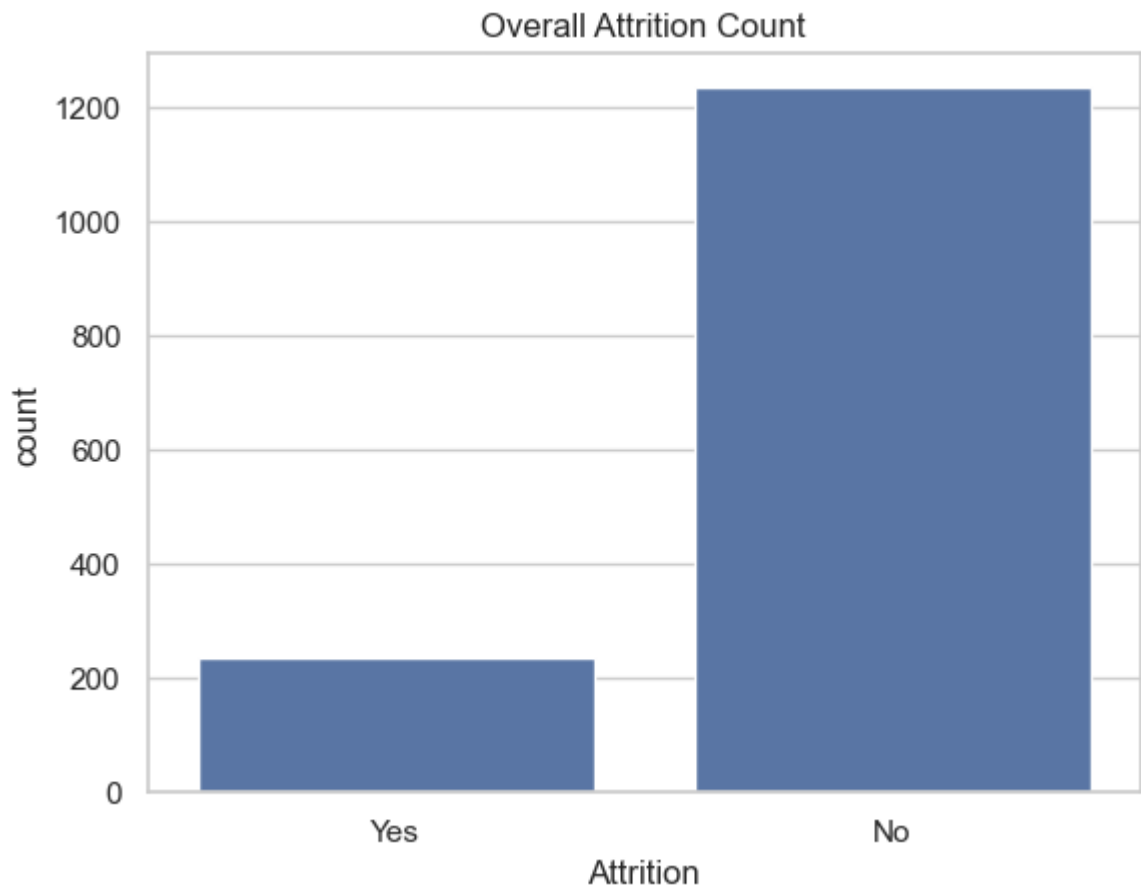


Chart- 2 ➡ Attrition by Department

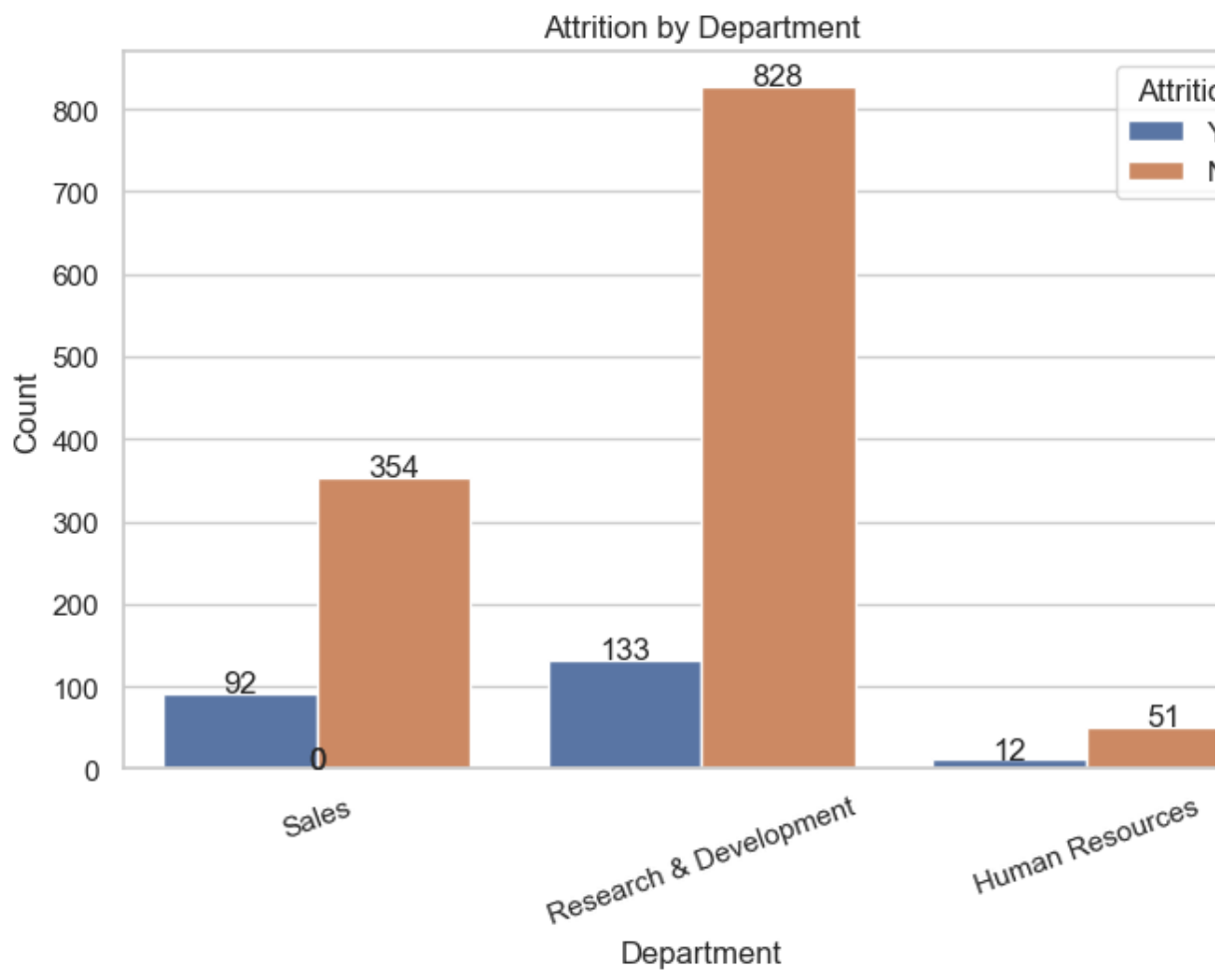


Chart- 3 ➡ Attrition by Age

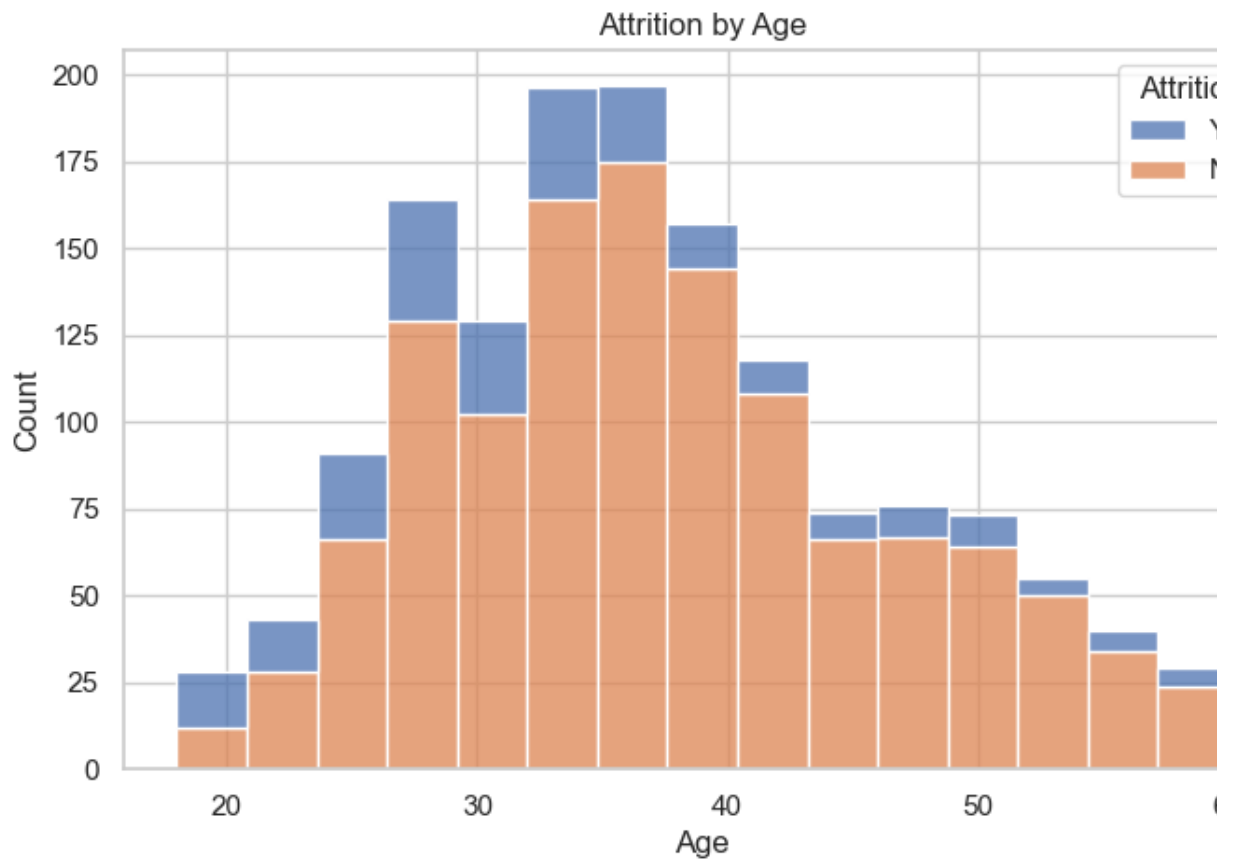


Chart- 4 ➡ Attrition % by Job Role

