

LAB4 MACHINE LEARNING LOGISTIC REGRESSION OUTPUTS

```

→ satisfaction_level      0
last_evaluation           0
number_project            0
average_monthly_hours     0
time_spend_company        0
Work_accident             0
left                     0
promotion_last_5years     0
Department                0
salary                    0
dtype: int64

      satisfaction_level  last_evaluation  number_project  \
count      14999.000000      14999.000000      14999.000000
mean         0.612834         0.716102         3.803054
std          0.248631         0.171169         1.232592
min          0.090000         0.360000         2.000000
25%          0.440000         0.560000         3.000000
50%          0.640000         0.720000         4.000000
75%          0.820000         0.870000         5.000000
max          1.000000         1.000000         7.000000

      average_monthly_hours  time_spend_company  Work_accident  left  \
count      14999.000000      14999.000000      14999.000000  14999.000000
mean         201.050337         3.498233         0.144610     0.238083
std          49.943099         1.460136         0.351719     0.425924
min          96.000000         2.000000         0.000000     0.000000
25%         156.000000         3.000000         0.000000     0.000000
50%         200.000000         3.000000         0.000000     0.000000
75%         245.000000         4.000000         0.000000     0.000000
max         310.000000        10.000000         1.000000     1.000000

      promotion_last_5years
count      14999.000000
mean         0.021268
std          0.144281
min          0.000000
25%          0.000000
50%          0.000000
75%          0.000000
max          1.000000
satisfaction_level      float64
last_evaluation         float64
number_project          int64
average_monthly_hours   int64
time_spend_company      int64
Work_accident           int64
left                    int64
promotion_last_5years   int64
Department              object
salary                  object
dtype: object

```

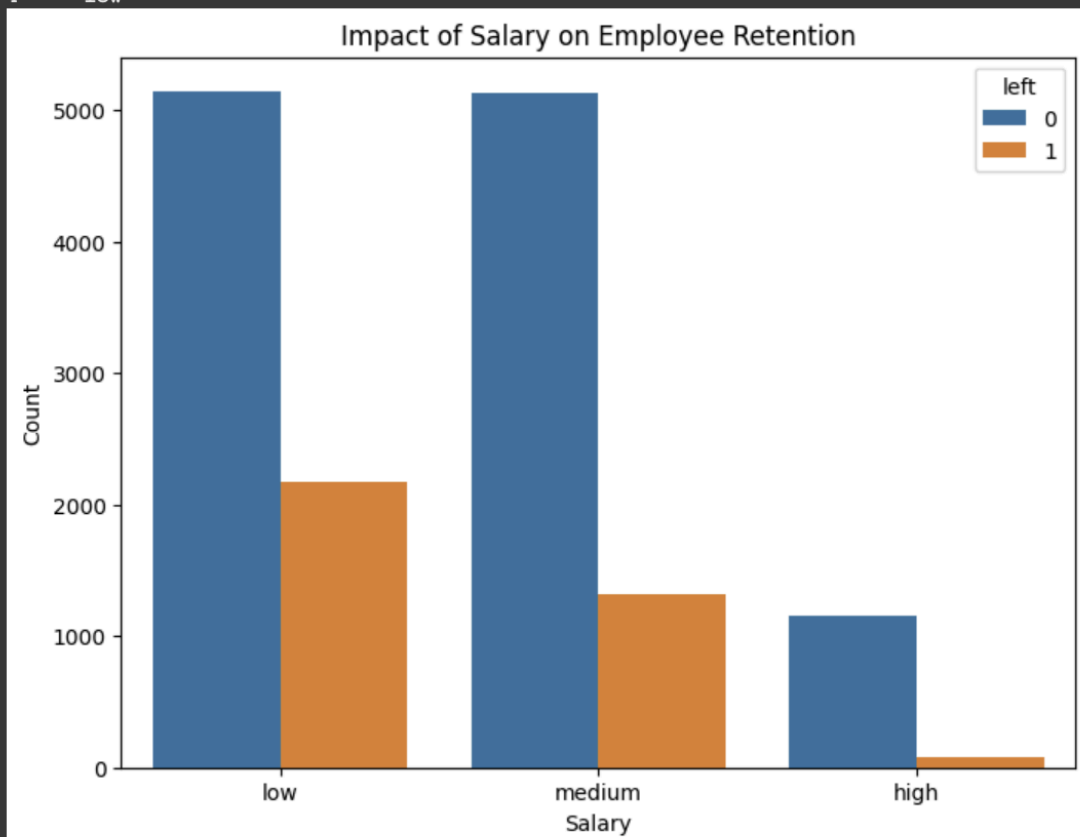
```

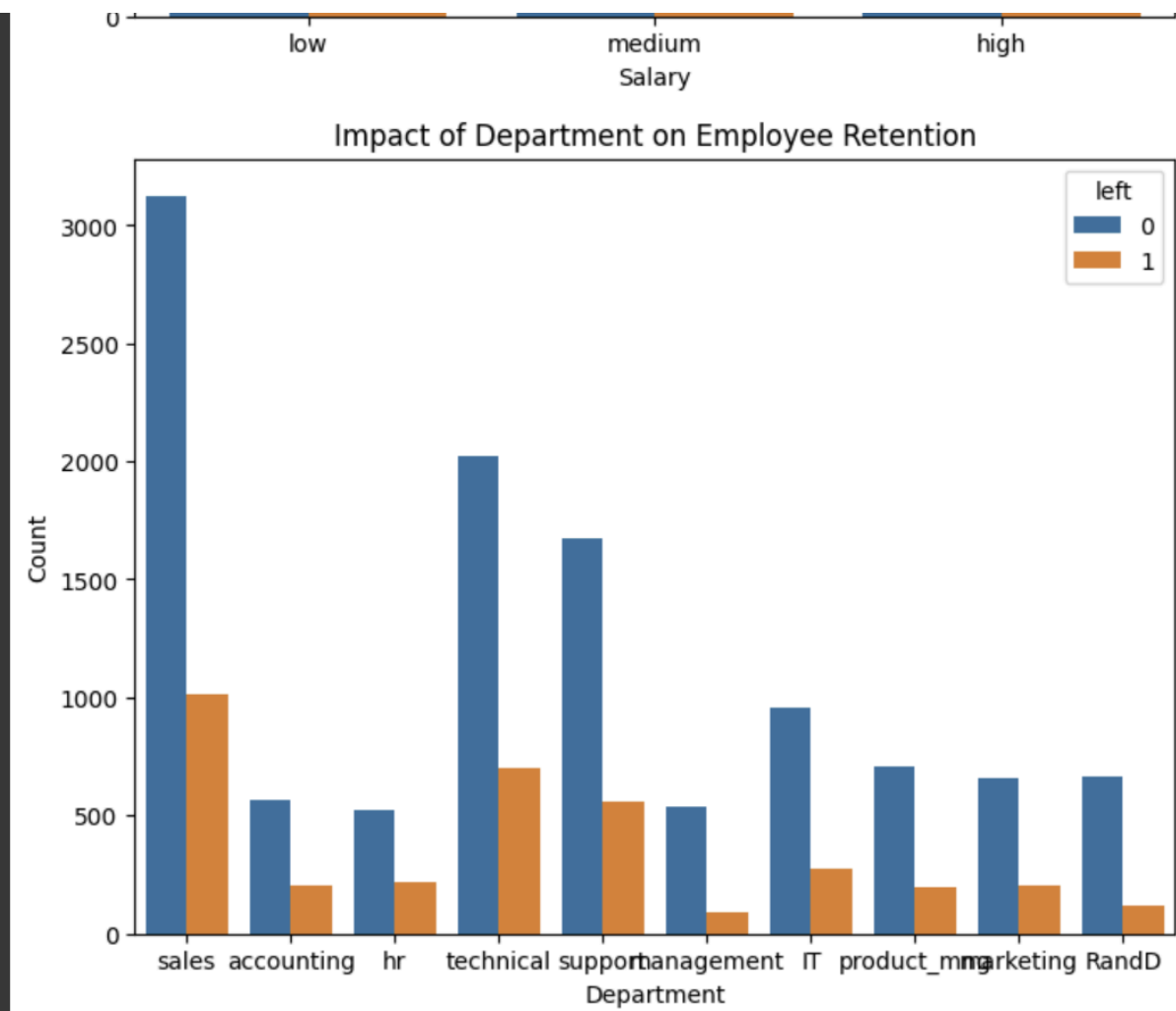
[1] satisfaction_level last_evaluation number_project average_monthly_hours \
0 0.38 0.53 2 157
1 0.80 0.86 5 262
2 0.11 0.88 7 272
3 0.72 0.87 5 223
4 0.37 0.52 2 159

time_spend_company Work_accident left promotion_last_5years Department \
0 3 0 1 0 sales
1 6 0 1 0 sales
2 4 0 1 0 sales
3 5 0 1 0 sales
4 3 0 1 0 sales

salary
0 low
1 medium
2 medium
3 low
4 low

```





Accuracy of the Logistic Regression model: 0.7843

Confusion Matrix:

```
[[2116 178]
```

```
 [ 469 237]]
```

Classification Report:


Accuracy of the Logistic Regression model: 0.7843

Confusion Matrix:

```
[[2116 178]
 [ 469 237]]
```

Classification Report:

	precision	recall	f1-score	support
0	0.82	0.92	0.87	2294
1	0.57	0.34	0.42	706
accuracy			0.78	3000
macro avg	0.69	0.63	0.65	3000
weighted avg	0.76	0.78	0.76	3000

 /usr/local/lib/python3.11/dist-packages/sklearn/linear_model/_logistic.py:1247: FutureWarning: 'multi_class' was deprecated in version 1.3 and will be removed in 1.6. Please use 'multinomial' instead.
warnings.warn(
Model Accuracy: 1.00

