```
PS C:\Users\Lenovo\Documents\Study\Maths\project\Employees Performance> & C:/Python314/python.exe "c:/Users/Lenovo/Documents/Study/Maths/project/Employees Performance/Employees.py"
Dataset Loaded Successfully
   Employee_ID Department  Age  Salary  Projects_Completed  Working_Hours  Performance_Score Promotion_Status
0       100001    Support   59   70621                   5            175                 99              Yes
1       100002      Sales   47   30892                  20            144                100              Yes
2       100003  Marketing   46   96733                   1            168                 98              Yes
3       100004    Support   34   98586                  18            175                100              Yes
4       100005         IT   37   56142                  15            184                100              Yes

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STEP 1: CENTRAL TENDENCY & DISPERSION

Mean Salary   : 69731.02
Median Salary : 70121.50
Mode Salary   : 89110.00
Variance (Projects Completed): 47.84
Standard Deviation (Projects Completed): 6.92

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STEP 2: PROBABILITY

Probability of Promotion: 0.95
Conditional Probability (Promotion | Performance > 80): 1.00

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STEP 3: DISTRIBUTIONS & VISUALIZATIONS

Salary Skewness : -0.01
Salary Kurtosis : -1.21

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STEP 4: LINEAR ALGEBRA

Vector 1 (Employee 1): [np.int64(5) np.int64(175)]
Vector 2 (Employee 2): [np.int64(20) np.int64(144)]
Dot Product           : 25300.00
Norm of Vector 1      : 175.07
Norm of Vector 2      : 145.38
Angle Between Vectors : 6.27 degrees

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KEY INSIGHTS

1. Employees with Performance_Score > 80 have higher promotion probability.
2. Salary distribution shows skewness, indicating unequal pay structure.
3. Projects Completed and Working Hours show measurable work intensity.
4. Linear algebra helps compare employee work patterns mathematically.

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Focus folder in explorer (ctrl + click)

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PS C:\Users\Lenovo\Documents\Study\Maths\project\Employees Performance>
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