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correction: The formula for covariance matrix is  $\frac{1}{n} * (X^T * X)$  (we missed out in  $\frac{1}{n}$  in the video)

there is a typo in the ipython notebook, as eigenvalues generated are in ascending order, when we multiply  $\text{vector} * \text{sample\_data}^T$   
 $\text{vector}[0] * X[i]$  will be second principle component  
 $\text{vector}[1] * x[i]$  will be first principle component