# Portfolio Standard Deviation Calculation

## Python Code:

import numpy as np  
  
# Calculate the portfolio standard deviation  
portfolio\_volatility = np.sqrt(np.dot(portfolio\_weights.T, np.dot(cov\_mat\_annual, portfolio\_weights)))  
print(portfolio\_volatility)

## Explanation:

This code calculates the portfolio's standard deviation using the formula: √(wᵀ \* Σ \* w), where w is the portfolio weights vector and Σ is the annualized covariance matrix. The np.dot() function computes matrix multiplication and np.sqrt() takes the square root to obtain volatility.

