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Experiment 4 (Application)	

PROBLEM DEFINITION:	Authentication using Audio Password Verification using Energy Spectral Density.
ALGORITHM:	1. Record Audio Password and filter the noise as x[n]. 2. Record Test Audio Password and filter the noise as y[n]. 3. Calculate X[k] and Y[k] using FFT. 4. Calculate $|X[k]|^2$ and $|Y[k]|^2$. 5. Calculate Coefficient of Correlation of $|X[k]|^2$ and $|Y[k]|^2$ => r. 6. Authenticate the user by selecting appropriate threshold value (anything > 0.9).
EXPERIMENTATION AND RESULT ANALYSIS:	

RESULT:	Final Output:
	
	 `Coefficient of Correlation: 0.935713471`
	 `Authentication successful.`