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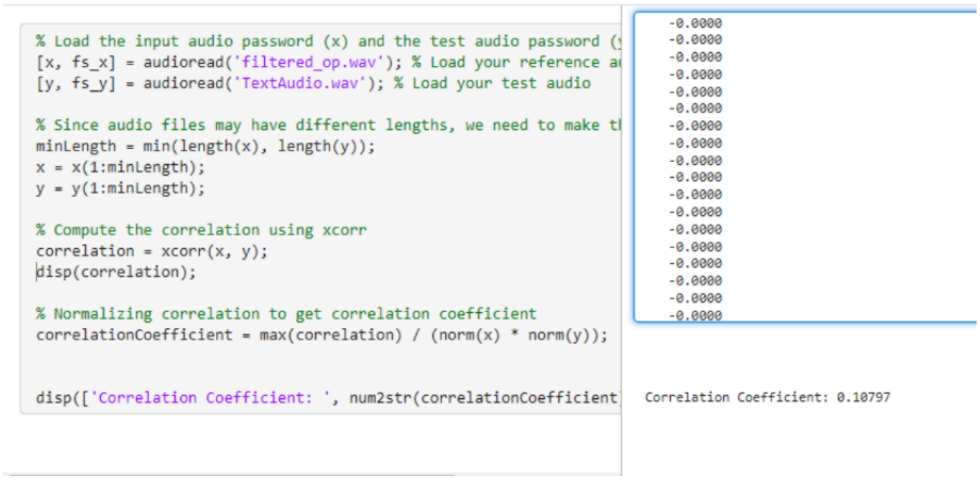
Experiment 2	
Problem Statement	Authenticate the user by measuring the degree of similarity between stored audio Password and Test Audio Password
ALGORITHM:	1.Record Audio Password and filter the noise x[n]. 2. Play the recorded Audio signal x[n]. 3. Record Test Audio Password and filter the noise y[n]. 4. Play the recorded Test Audio signal y[n]. 5. Calculate Coefficient of Correlation r 6. Authenticate the user by selecting appropriate Threshold value (Anything > 0.9)
RESULT:	When Audio and password are different.  When Audio and password are same.

```
% Load the input audio password (x) and the test audio password (y
[x, fs_x] = audioread('filtered_op.wav'); % Load your reference au
[y, fs_y] = audioread('TextAudio.wav'); % Load your test audio

% Since audio files may have different lengths, we need to make th
minLength = min(length(x), length(y));
x = x(1:minLength);
y = y(1:minLength);

% Compute the correlation using xcorr
correlation = xcorr(x, y);
disp(correlation);

% Normalizing correlation to get correlation coefficient
correlationCoefficient = max(correlation) / (norm(x) * norm(y));


disp(['Correlation Coefficient: ', num2str(correlationCoefficient)
```

```
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000
   -0.0000

Correlation Coefficient: 0.10797
```

```
% Load the input audio password (x) and the test audio password (y
[x, fs_x] = audioread('filtered_op.wav'); % Load your reference au
[y, fs_y] = audioread('TextAudio.wav'); % Load your test audio

% Since audio files may have different lengths, we need to make th
minLength = min(length(x), length(y));
x = x(1:minLength);
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% Compute the correlation using xcorr
correlation = xcorr(x, y);
disp(correlation);

% Normalizing correlation to get correlation coefficient
correlationCoefficient = max(correlation) / (norm(x) * norm(y));


disp(['Correlation Coefficient: ', num2str(correlationCoefficient
```

```
   1.0e+03 *

    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
    0.0000
```

```
Correlation Coefficient: 0.99965
```