EXPERIMENT 6: Pitch Estimation

```
clc;
 clear;
close all;
%% Load Speech Signal
[speech, fs] = audioread('speech.wav');
speech = speech(:,1); % Use mono channel if stereo


%% Select a Frame (25 ms)
frame_size = round(0.025 * fs);
frame = speech(1:frame_size) .* hamming(frame_size);


%% Compute Autocorrelation
autocorr_values = xcorr(frame);
autocorr_half = autocorr_values(length(frame):end);


%% Find Pitch Period
[~, locs] = findpeaks(autocorr_half, 'MinPeakDistance', fs/500);
pitch_period = locs(1);
pitch_freq = fs / pitch_period;


%% Display Result
fprintf('Estimated Pitch: %.2f Hz\n', pitch_freq);


%% Plot Autocorrelation
```

```
plot(autocorr_half); title('Autocorrelation'); grid on;
```