Module 2: Implementation of an LPC Speech Codec

Write a series of matlab functions for implementing an LPC Speech codec. These functions should include:

- **get_rs**
  Function for computing autocorrelation function of a frame of data.

- **get_pitch**
  Determines pitch frequency.

- **lev**
  Determines AR parameters given autocorrelation sequence.

- **analysis**
  This is the main program which calls the above functions, makes voiced/unvoiced decisions, and then for each speech frame, generates a vector of speech parameters which is then saved.

- **synthesis**
  This function reads in the speech parameters generated by “analysis” and synthesizes the speech. The synthetic speech should then be output to a speaker using “soundsc”.

Try using \( N = 300 \), also for extra credit, study the effects of quantizing the LPC parameters. I will give a matlab function that implements a quantizer if you are interested.