%1.pitch estimation using manual method

[x,fs]=audioread('C:\Program Files\MATLAB\MATLAB Production Server\R2015a\bin\work\data\1-11.wav');

plot(x);axis tight;grid on;

sample=ginput(5);

pp=diff(sample)/fs;

% diff(X), for a vector X, is [X(2)-X(1) X(3)-X(2) ... X(n)-X(n-1)].

pf=1./pp;

%2.a)pitch period estimation using autocorrelation

[x,fs]=audioread('C:\Program Files\MATLAB\MATLAB Production Server\R2015a\bin\work\data\1-11.wav');

b=fir1(51,0.05);

x\_filter=filter(b,1,x);

subplot(211),plot(x);axis tight;grid on;

subplot(212),plot(x\_filter);axis tight;grid on;

y1=x\_filter(5000:5400);

plot(y1);axis tight;grid on;

x\_corr=xcorr(y1);

plot(x\_corr);axis tight;grid on;

instants=ginput(2);

pp=instants/fs;

pf=1./pp;