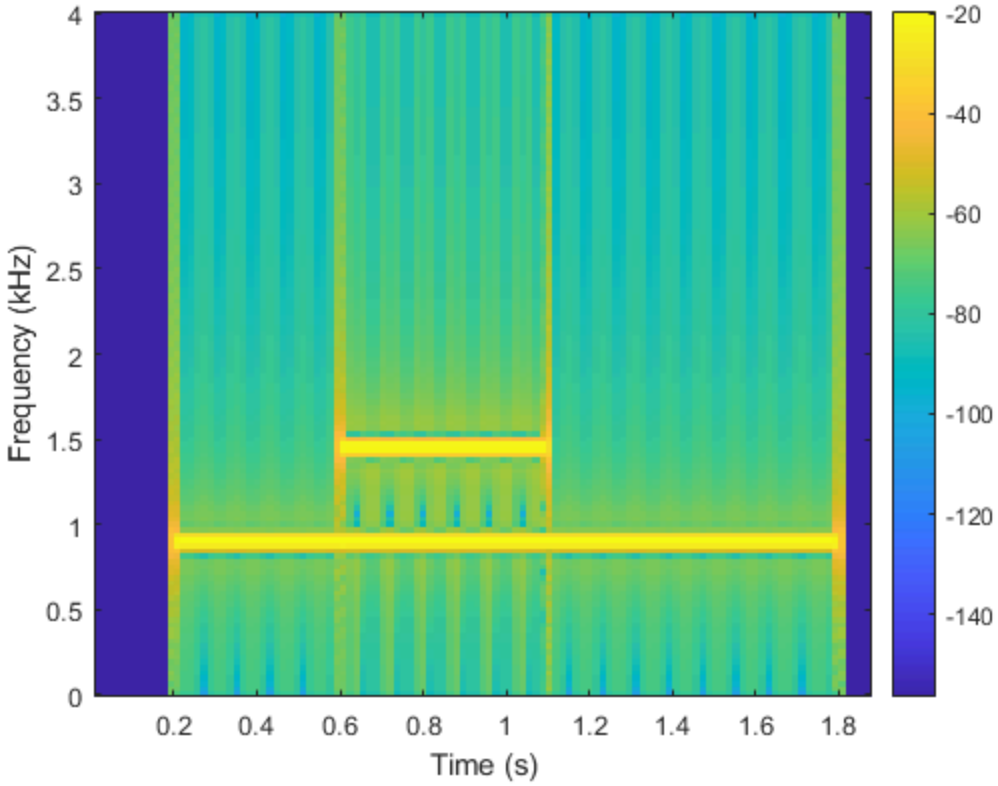
3.3.2

Modify the following code from Prelab 2.6

```
amps = [1, 1]
freqs = [900,1450]
phases = [0, 0]
fs = 8000;
tStart = [0.2, 0.6];
durs = [1.6,0.5];
maxTime = max(tStart+durs) + 0.1; %-- Add time to show signal ending
durLengthEstimate = ceil(maxTime*fs);
tt = (0:durLengthEstimate)*(1/fs); %-- be conservative (add one)
xx = 0*tt; %--make a vector of zeros to hold the total signal
for kk = 1:length(amps)
    nStart = round(tStart(kk) * fs)+1; %-- add one to avoid zero index
    xNew = shortSinus(amps(kk), freqs(kk), phases(kk), fs, durs(kk));
    Lnew = length(xNew);
    nStop = nStart + Lnew - 1; %<========= Add code
    xx(nStart:nStop) = xx(nStart:nStop) + xNew;
end
tt = (1/fs)*(0:length(xx)-1);
figure
spectrogram(xx,256,[ ],[ ],fs,'yaxis'); colorbar


function xs = shortSinus(amp, freq, pha, fs, dur)
% amp = amplitude
% freq = frequency in cycle per second
% pha = phase, time offset for the first peak
% fs = number of sample values per second
% dur = duration in sec
%
tt = 0 : 1/fs : dur; % time indices for all the values
xs = amp * cos( freq*2*pi*tt + pha );
end


amps =

     1     1


freqs =

         900        1450


phases =

     0     0
```



Published with MATLAB® R2022a