1. Briefly answer the following questions:
    i. What is the difference between an attack and an onset?

An *onset* is a moment chosen to mark the beginning of the transient (which extends in time longer than a moment), versus an *attack* which is the period of time after an onset when amplitude increases in a nontrivial/unpredictable way.

    ii. Why is preprocessing is typically done to the signal?

Preprocessing is done to accent or attenuate parts of a signal so it can be better utilized for the task at hand (ie slicing up a signal into spectral slices to more easily identify transients across frequency domains).

    iii. What is the purpose of reduction?

Reduction transforms signals into highly sub-sampled versions where transients are more visible and onset detection is easier.

    iv. What is the role of peak picking?

The detection function will give us onsets/sharp increases in the signal's energy, and then a peak picking algorithm sifts through these (which have often been masked by noise, other signal aspects like vibrato, and general variability in size/shape) to estimate onsets.