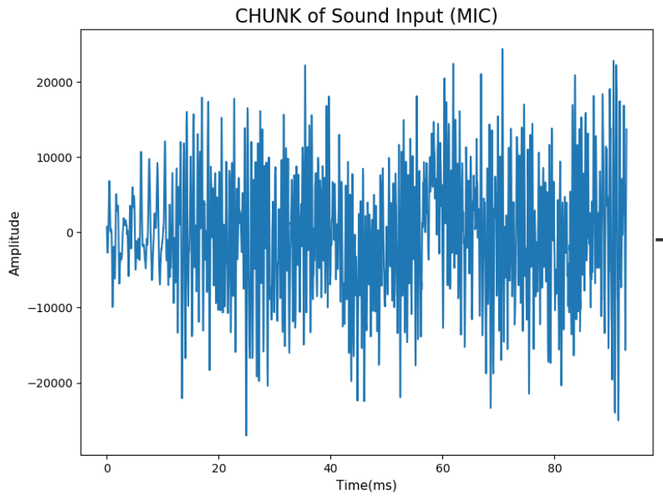
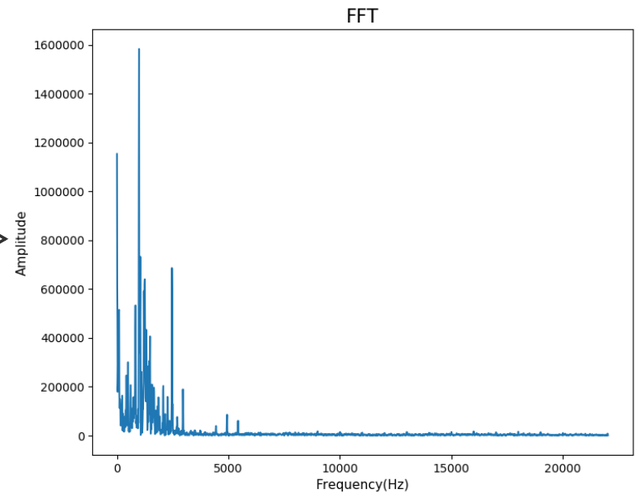
Sound Analysis Part 1



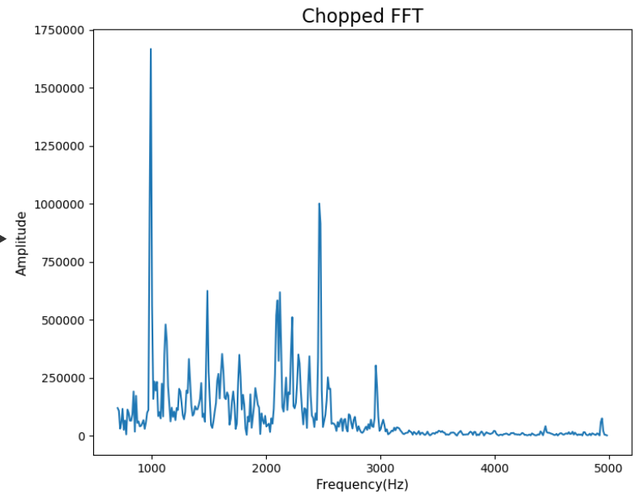
Step 1

IF Loudness > Threshold

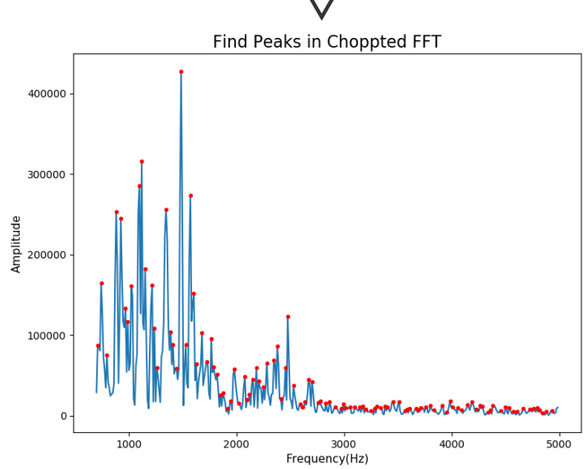
Step 2



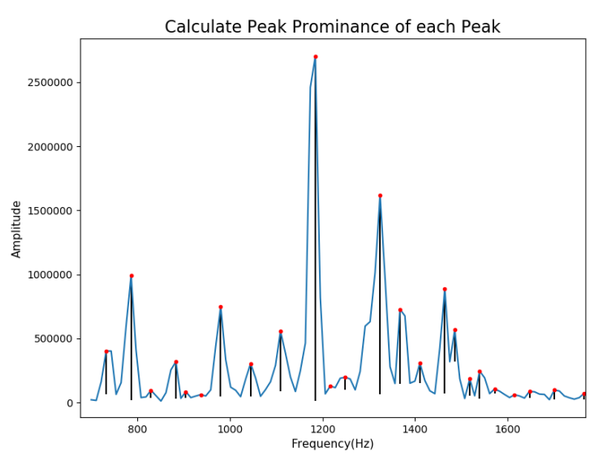
Step 3



Step 4



Step 5



Step 6

IF (Highest Peak Prominance) > Threshold

Step 7

(peckCount)++

Step 8

Feeding Amount (gm) = (peckCount)*(weightPerPeck)

Step 9

Step 1: A Chunk of sample is collected from the microphone for analysis
Step 2: Average Loundness of the Chunk is calculated and if it is greater than a threshold, then only futher process the CHUNK, otherwise take another CHUNK
Step 3: Calculate the Fourier Transform of the CHUNK, this will find the amplitude of various frequencies in the CHUNK
Step 4: Our Frequency of interest is of the range about 1Khz to 5Khz, so we chop the FFT, this will also increase the computation speed
Step 5: Find the peaks of the FFT, using appropriate algorithm
Step 6: Not all peaks have same significance, so we calculate the peak prominance of each peak (how sharp is the peak from its base level), finally find the peak with highest peak prominance
Step 7: Check if the highest peak prominance is greater than a threshold, if yes then goto step 8, else take another CHUNK
Step 8: Add unity to the peckCount variable
Step 9: Amount of food, fed can be calculated by multiplying the peckCount by the estimated weight of fed during a single peck.