**Audio Processing**

**Ex03 – Report**

Student: Anh Huy Bui

ID: 293257

**Problem 1:**

Chart, histogram

Description automatically generatedChart, histogram

Description automatically generated

It can be seen form the graphs that spectrogram magnitude has a shape somewhat similar to a sinuous wave. This is because the frequency of the signal is a sum of a constant and a sinuous wave.

**Problem 2:**



Chart, histogram

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Chart

Description automatically generated

There are some glitches in the output signal which is because the synthesis window is shifted faster (longer in range) than the analysis window.

I find that is also the reason of the echoing/robotic sound of output wav.

In this case the synthesis window hop length is 11.2ms ( double of analysis window hop length – 35% of window length).

Therefore, I tried reducing the analysis window hop length to 4ms

=> synthesis window hop length is 5.6ms.

This reduces echoing significantlyChart

Description automatically generated

Chart

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