LAB 2 Assignment

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**Assignment 3:**

1. 16-bit stores signal using 16 digit binary number. With 1byte of width contains 8bits, 16bits have a width of 2.
2. paInt8’s width is 1

**Assignment 4:**

1. '\xff\xff' to represent -1
2. '\x00\x01' to represent 256
3. '\xff\xff\xff\xff' to represent -1, '\x00\x01\x00\x00' to represent 256
4. I got an error: short format requires SHRT\_MIN <= number <= SHRT\_MAX

Too large gain made peak amplitude exceed the maximum allowed value.

1. It depends on each value of original filter. Given the filter in filtering\_paInt16\_a.py, the differential equation goes like: , than the transfer function goes like  using filter function in Matlab we could find the peak point for y is 3.221 when n = 5; so gain \* ymax should less than

The maximum gain is 10173

1. The source code of question 6 is in the package named filtering\_paInt16\_a\_sl5352.py.

Sound is bounded to 2^15-1 levels.

The effect for this on sound is that the code only generates the sound with bounded amplification.

1. The source code of module is in the package named bound.py This bound module contains three function for bounding different data type.
2. The source code of question 8 is in the package named Lab\_2\_Asgmnt3\_8\_sl5352.py
3. The source code of question 9 is in the package named Lab\_2\_Asgmnt3\_9\_sl5352.py