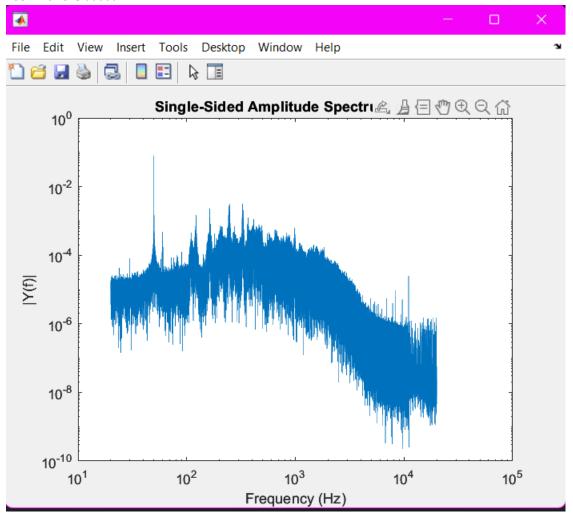
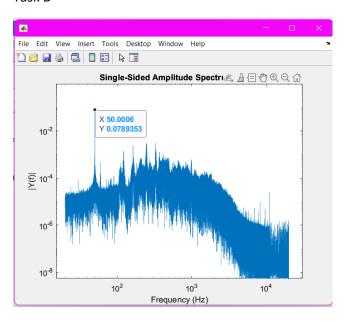
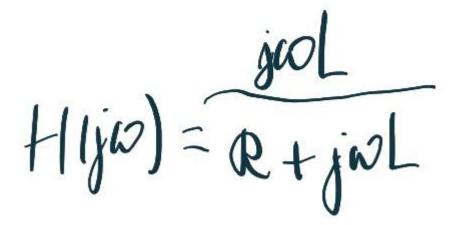
Task B and C?????

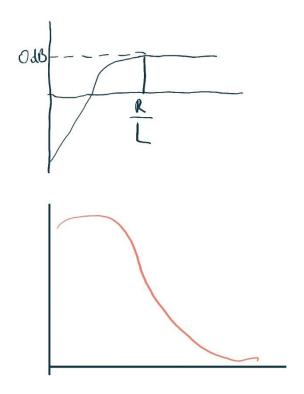


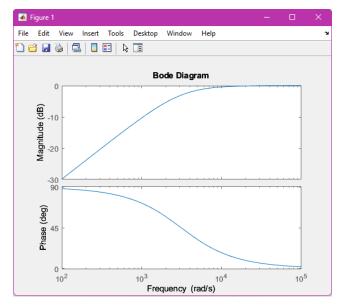
Task D





F bode(tf([1 0],[1 3125.8]))





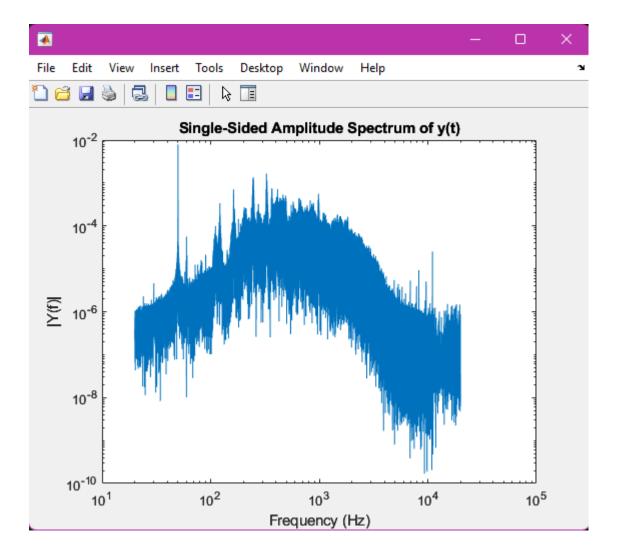
9)
$$|H(ju)| = \frac{\sqrt{w^2}}{\sqrt{(\frac{R}{2})^2 + ju}}$$

Н

H)
$$\omega = 2\pi f$$
 = $\omega = 100\pi$
 $f = 50 H_{e}$
 $|H(j_{w})| = \frac{\omega}{\sqrt{(2j_{x}^{2} + \omega)}} = 0.1$
 $\frac{100 \pi}{\sqrt{(2j_{x}^{2} + (100\pi)^{2})}} = 0.1$
 $R = \sqrt{980000\pi^{2}} = 3175.8$

```
Figure 1
File Edit View Insert Tools Desktop Window Help
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                         Bode Diagram
       0
    Magnitude (dB)
      -10
      -20
      -30
90
    Phase (deg)
      45
       10<sup>2</sup>
                      10<sup>3</sup>
                                     10<sup>4</sup>
                                                    10<sup>5</sup>
                        Frequency (rad/s)
s=tf('s');
RdivL=3125.8;
sys=(s/(RdivL+s));
bode(sys)
J
  [f1,Fs] = audioread('radioSample.wav');
  [m,\sim] = size(f1);
           = (0 : 1/Fs : (m-1)*1/Fs)';
  makeFft(f1,Fs,20,20e3); %People can only hear in a frequency range from 20 to 20
  s=tf('s');
RdivL=3125.8;
sys=(s/(RdivL+s));
bode(sys)
f2=lsim(sys,f1,t);
L
  [f1,Fs] = audioread('radioSample.wav');
  [m,\sim] = size(f1);
            = (0 : 1/Fs : (m-1)*1/Fs)';
  t
  %makeFft(f1,Fs,20,20e3); %People can only hear in a frequency range from 20 to
20 kHz...
  s=tf('s');
RdivL=3125.8;
sys=(s/(RdivL+s));
%bode(sys);
f2=lsim(sys,f1,t);
makeFft(f2,Fs,20,20e3);
```

ı



The high pass filter adjusted the whole audio by reducing the lower frequencies by a factor of 10.

The notch filter would have been focusing on a specific frequency.