**2. Audio spectral analysis and filtering**

**Background:**

1. After using (fft) function:  
   Graphical user interface

   Description automatically generated  
   After using (fftshift) function:  
   Graphical user interface, chart

   Description automatically generated

Interfering signal: Noise with High Frequency

1. Graphical user interface

   Description automatically generated
2. (Filtered audio is attached in the file)
3. Chart

   Description automatically generated
4. Chart

   Description automatically generated
5. Chart, histogram

   Description automatically generated
6. Yes, the filter is causal.  
   because it’s practical filter and any practical filter is causal. (Never depend on the future input).
7. Graphical user interface, chart

   Description automatically generated