EE104

Lab7

Hung Nguyen

**Read me:**

**Video demo link:** https://drive.google.com/file/d/1QVTTfgcqlpeAm1SKpOg4OBxQEIo-eTHv/view?usp=sharing

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1. **FFT/IFFT Audio Signal Processing**

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First, you need to import the following libraries and packages to run the program:

Text

Description automatically generated

A picture containing text, light, device, gauge

Description automatically generatedThen apply the code and click on run button:

You will get the following results:

* Signal 1: low frequency – f = 3 Hz

A picture containing text, kitchenware

Description automatically generated

* Signal 2: High frequency - f = 12 Hz
* A picture containing chart

  Description automatically generatedA picture containing text, measuring stick, chime

  Description automatically generatedSignal 3: High frequency - f = 15 Hz
* Sig = sig1 + sig2 +sig3

A picture containing text, antenna, measuring stick

Description automatically generated

* The FFT of the signal

Chart, histogram

Description automatically generated

* The original signal (blue) vs the filtered signal (orange)
* The FFT of the signal Shape, arrow

  Description automatically generatedafter filter high frequency

Chart, histogram

Description automatically generated

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1. **Heart Rate Analysis – Time Domain Measurements - Biotechnology**

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First, you need to import the following libraries and packages to run the program:

Text

Description automatically generated

A picture containing text, light, device, gauge

Description automatically generatedThen apply the code and click on run button:

You will get the following results: A picture containing object, antenna

Description automatically generated

Text

Description automatically generated

Chart

Description automatically generated

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1. **Game: Red Alert**

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First, you need to import the following libraries and packages to run the program:

Ảnh có chứa văn bản

Mô tả được tạo tự động

A picture containing text, light, device, gauge

Description automatically generatedThen apply the code and click on run button:

You will get the following results:

A picture containing text

Description automatically generated