**Assignment I**

**Activities:**

- Write a MATLAB script named "click_removal.m" to detect and remove clicks from an audio file.
- Create a short report describing the design and performance of the algorithm.

**Upload:**

- Submit a PDF version of the report using the provided LaTeX template.
- Provide a working MATLAB demo named "demo.m" along with associated function files, packaged in a zip file.

**Contents of demo.m:**

- Define variables allowing easy modification of input file (in .wav format), block size, and duration (in seconds) of the input file to process.
- Process the provided "degraded.wav" file and write the output into a file named "output.wav."
- Use the provided "clean.wav" (based on a real audio track) and the provided "degraded.wav" (artificially degraded) for testing the algorithm and generating the processed version of "degraded.wav."
- The demo audio files should be 10 seconds long with a minimum sampling rate of 8KHz.
- The "demo.m" should play "degraded.wav" for the first 5 seconds and then the restored .wav file for the next 5 seconds.

**Grading Criteria:**

- Code Functionality and Indentation:

  If the demo code doesn't run or lacks proper indentation, the final mark for the assignment is 0.

- Code Functionality (Software Performance):

  Correctly restores the audio by removing clicks: 40%

- Code Style and Adherence to Guidelines:

  Adherence to the style guide: 10%

- Research Methodology and Parameter Exploration:

  Solid research methodology exploring problem parameters (block size, AR model order, threshold): 30%

- Report Quality:

  Coherent report with well-rendered graphics, correctness, and thorough discussion of results: 20%