Exercise 1

Introduction

This report outlines the processes involved in audio recording, editing, processing, and saving using the Audacity software. It also details the characteristics of various effects used, analyzes the impact of specific effects on sound spectrum.

1. Audio Processes in Audacity

Audacity was employed for this project. The process began with the audio recording; a clear and noise-free environment was chosen to ensure quality. Using a standard USB microphone, the voice was recorded directly into Audacity.

The editing process involved trimming unnecessary parts from the start and end of the recording. Additionally, sections with mistakes were either removed or re-recorded for clarity. The Normalize effect was then applied to ensure the audio level was consistent throughout the recording.

Processing involved several steps. Firstly, the Noise Reduction tool was used to eliminate background hiss. Then, Equalization was applied to enhance voice clarity, focusing on mid-range frequencies. Finally, the Compressor effect was used to balance the dynamic range, making quieter sounds more audible without distorting louder sections.

Saving the file was the final step, done in the universally compatible WAV format for high quality, and MP3 for sharing due to its smaller file size.

Screenshots
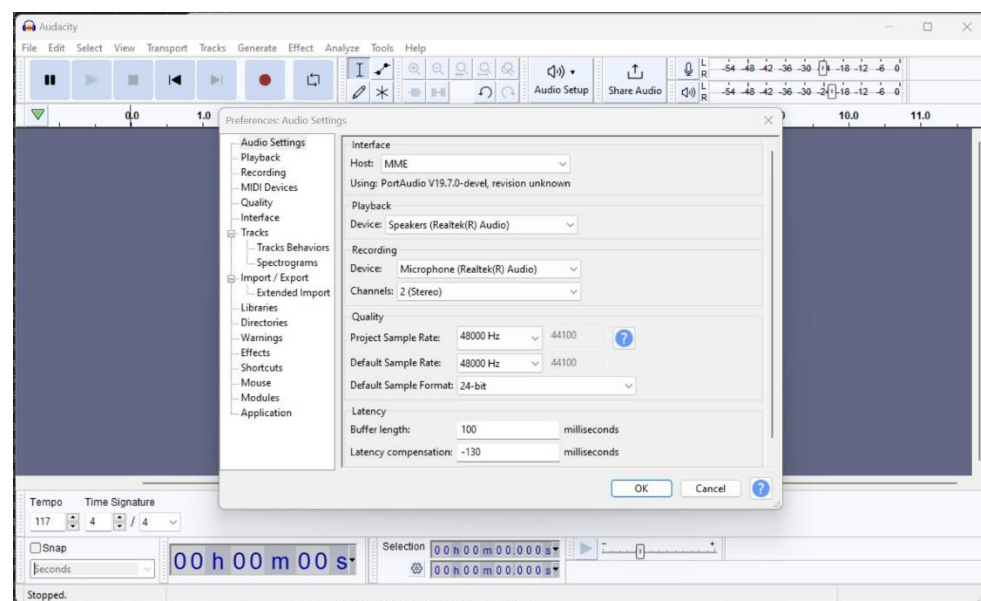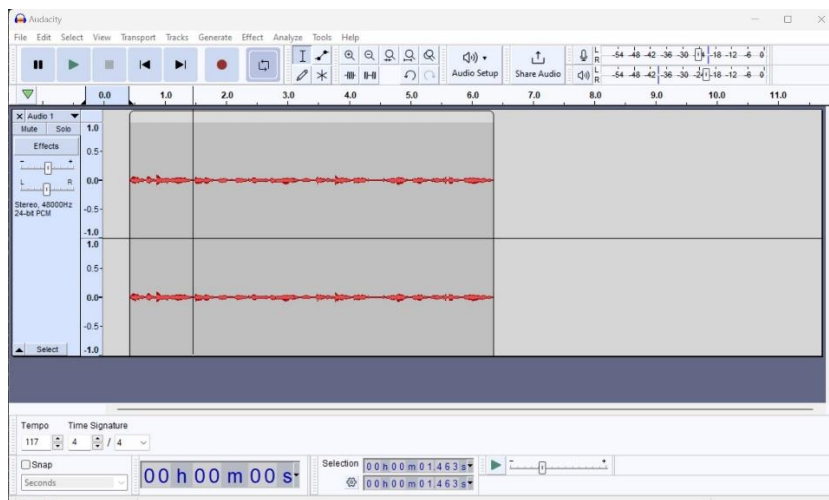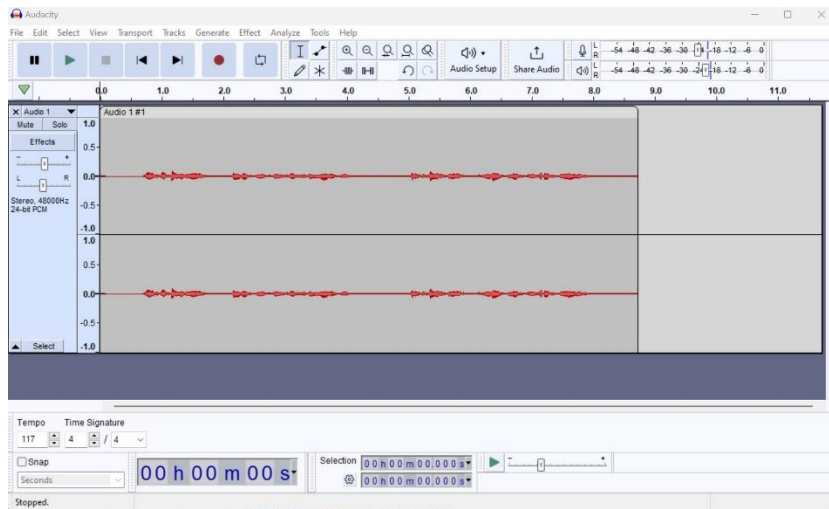
2. Characteristics of Each Effect

The project utilized several effects:

Normalize: Adjusts the volume to a target level, making the audio sound consistent.

Noise Reduction: Removes background noise without affecting the primary audio.

Equalization: Adjusts frequency balances, enhancing vocal clarity.

Compressor: Balances the dynamic range, making softer sounds louder and preventing louder sounds from peaking.

Each effect was programmed to optimize the voice quality, considering factors like room acoustics and microphone sensitivity.

3. Analysis of Application

A significant focus was on the low-pass filter and master volume effects. The low-pass filter was crucial in reducing high-frequency noise, enhancing voice intelligibility. It effectively allowed frequencies below a certain cutoff point, removing unwanted high-frequency sounds.

The master volume control was pivotal in maintaining an overall balanced sound level. Adjusting this ensured that the audio output did not clip or distort, regardless of the listener's volume settings.

4. Further Development

Further development included the integration of a Voice Enhancer effect, which automatically adjusts frequency and dynamic range to suit spoken word recordings. Additionally, a custom Background Music track was created and mixed at a lower volume, ensuring it complemented the voice without overwhelming it.

This enhancement aimed to create a more professional and pleasant listening experience, especially important for podcasts or narrative projects. Future developments could involve exploring advanced noise reduction techniques and experimenting with 3D audio effects to create a more immersive experience for listeners.

Conclusion

This project demonstrated the effective use of Audacity for professional-level audio editing. The application's user-friendly interface, combined with its powerful tools, made it possible to produce high-quality audio recordings. The project's success lays a foundation for more advanced audio editing and production techniques in future endeavors.

Unfortunately, I was not able to finish the project as I planned and described above but the final form would have been based on the report above.