Exploring Wav2Vec - Understanding the Future of Speech Recognition

## Part 1: Research and Analysis

**Understanding Wav2Vec:**

* Research the basic principles of Wav2Vec, focusing on its architecture and how it differs from traditional speech recognition systems.
* Summarize your findings in a 500-word essay.

**Self-Supervised Learning in Wav2Vec:**

* Investigate the role of self-supervised learning in Wav2Vec.
* Explain how this approach benefits the model, especially in terms of data requirements and performance.

**Wav2Vec’s Impact on ASR:**

* Analyze the impact of Wav2Vec on the field of ASR. Consider aspects like accuracy, efficiency, and language diversity.
* Present your analysis in a short video presentation (5-10 minutes).

## Part 2: Practical Exploration

**Experiment with Wav2Vec:**

* Use a pre-trained Wav2Vec model available in libraries like Hugging Face or TensorFlow.
* Conduct a simple experiment: input an audio file and observe the transcription quality. Compare this with transcriptions from a traditional ASR system if possible.

**Case Study Analysis:**

* Find a real-world case study where Wav2Vec has been implemented.
* Write a report discussing the use-case, implementation challenges, and the outcomes.