

## **ABSTRACT**

This project concerns to speaker dependent Thai numeral speech recognition by Hidden Markov Model, using MATLAB. Owing to 0-9 Thai numeral are monosyllables so it is simple to collect the speech samples and create the speech models because monosyllables can be detected start point and end point to calculate some parameters for creating the speech models much easier than polysyllables. This research uses Speech Energy to segment speech signal into words in order to find LPC coefficients, then reduce them by Vector Quantization giving the codebook. Any LPC coefficients can be replaced by the members of this codebook. After Vector Quantization then create the models of those speech by Hidden Markov Model method, and then keep them for comparing with input speech. The recognized word (number) is the model that give maximum probability. The concepts of this project are appropriate to apply in the speaker independent speech recognition and the speech can be improved from monosyllables to continuous word or sentences.