The aim of this research is to develop the Thai text-to-speech (TTS) system. TTS system initially transforms text input into a sequence of sound symbols. The complexity of Thai requires about four hundred rules including main and specific rules to derive most pronunciations for the rule-based approach. This approach is based on the syllable structure analysis. To increase the quality of TTS, an exception dictionary to cover anomalous pronunciations and alternative selection process to determine sentence structure are included in the system. The phonetic generation and speech generation by mapping table are sequential steps to transform sound symbols to speech.