

# **IMPROVING ENGLISH PRONUNCIATION BY JAPANESE SPEAKERS**

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# Abstract

**This talk is about the development of a wordbook application using 13 vowels and 24 consonants to improve English pronunciation by Japanese speakers.**

**The International Phonetic Alphabet (IPA) uses special symbols and naive Japanese speakers usually find them difficult to understand, hindering the improvement of their pronunciation.**

**As an alternative, we propose using phonetic symbols put forward by Prof. Nogita of CLR (University of Aizu)**

# 1. INTRODUCTION



## 1.2. List of all phonemes in English by Prof. Nogita

He proposed a list of 13 vowels and 24 constants. [1]

- Vowels are based on phonics.

Alphabet sounds	ā	ē	ī	ō	ū
Relative sounds	ǎ	ě	ǐ	ǒ	ǔ
Vowel pairs	oi	ou	ōō		

Figure 2: List of 13 vowels

- Consonants are represented by Roman letters.

有声音	b	d	v	g		j	l	m	n	r	z	w	y	zh	th	ng
無声音	p	t	f	k	h	ch					s			sh	th	

Figure 3: List of 24 constants

[2]野北明嗣. "英語の全音素一覧表の提案: 発音体系の全体像を把握させる教育." 外国語外国文化研究 28 (2018): 30-45.

## 1.3. Pronunciation rules for English words

### English Education Issues

- Japanese schools do not teach the rules of English pronunciation.  
→ Only a few people can pronounce it well.

### Phonics

- Phonics is a method of teaching people to read by correlating sounds with letters or groups of letters in an alphabetic writing system. [3]

[3]McArthur, Genevieve, et al. "Phonics training for English-speaking poor readers." *Cochrane Database of Systematic Reviews* 11 (2018).

## 1.4. Goal

- Development of an English wordbook application using Nogita's list and Phonics.
- Improvement English learners' pronunciation ability using this application.

Example: Rainbow

IPA: réɪnbəʊ

Nogita's lists: RĀN-bō

# 2. IMPLEMENTATION



## 2.1. Wordlist database

- Reference wordlist: A1 rank of CEFR-J [4]
- Including
  - English vocabulary
  - Phonics spelling
  - Japanese
  - an example sentence.
- Database type: SQLite

[4]投野由紀夫. "小, 中, 高, 大の一貫する英語コミュニケーション能力の到達基準の策定とその検証." 平成 20 年度~平成 23 年度科学研究費補助金 (基盤研究 (A)) 研究成果報告書 (2012).

## 2.2. Development environment

- **Language used: Kotlin**
  - To be created as an application for Android
  - less prone to defects and more secure
- **Voice: TextToSpeech or real American voice**
- **Test: Google pixel 6 (Android)**

## 2.3. Contents

- **Arrange the words so that the study of pronunciation rules and English vocabulary can be done in parallel.**

### Example rule

- **Silent E**
  - **Consonant after short vowels**
  - **ER IR UR = UR etc...**
- 
- **Contain quizzes on pronunciation rules and English word translation.**

# 3. FUTURE WORK

### 3. Future work

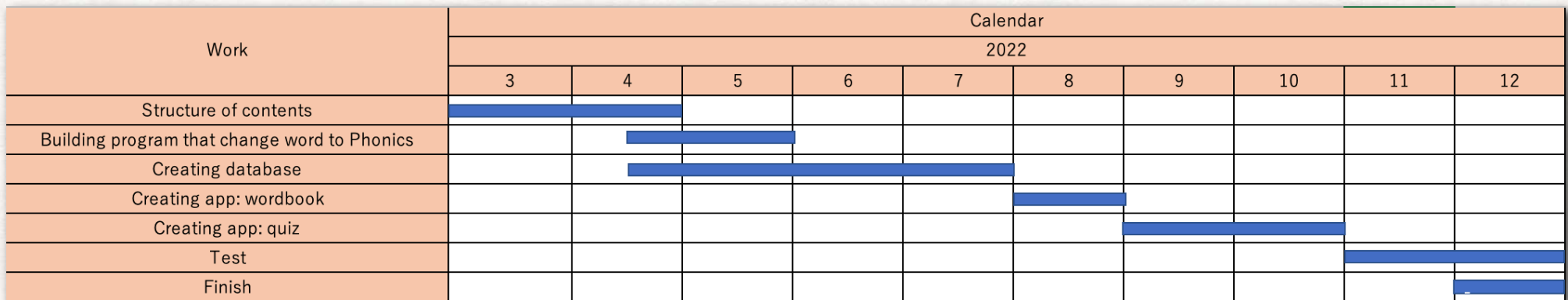


Figure 4: Gantt chart for my application

# Reference

[1]International Phonetic Association, and International Phonetic Association Staff. Handbook of the International Phonetic Association: A guide to the use of the International Phonetic Alphabet. Cambridge University Press, 1999.

[2]野北明嗣. "英語の全音素一覧表の提案: 発音体系の全体像を把握させる教育." 外国語外国文化研究 28 (2018): 30-45.

[3]McArthur, Genevieve, et al. "Phonics training for English-speaking poor readers." *Cochrane Database of Systematic Reviews* 11 (2018).

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**Thank you for attention!**



**Video 1: Sound of 13 vowels**



**Video 2: Sound of 24 constants**