

Bomby



Word guessing game

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Idea

The word guessing game.

The player:

Explain the word that is on the screen to others

Pass the bomb when somebody guesses it.

Game over when bomb makes explosive sound

Components

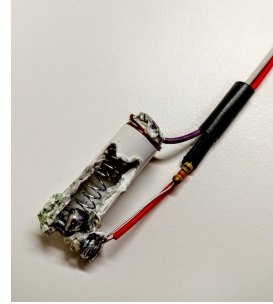
Controller: **Raspberry PI3**



Sensors: **Microphone,**



Shake sensor



Display: **LCD 16x2**



Power: **Battery**



Mechanical structure

Ideally - **plastic cage**

Software

Implementation in python

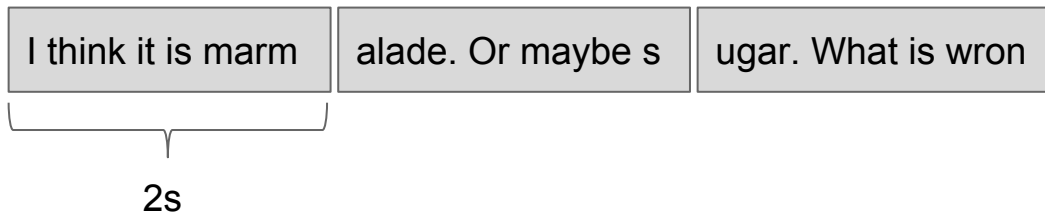
Software

4 main classes:

Display	Sound	Speech recognition	Game engine
<ul style="list-style-type: none">1. Show greeting2. Show next word3. Show game over	<ul style="list-style-type: none">1. Determine time 30-60s2. Play ticking sound for determined time3. Play exploding sound4. Notify other threads game finished	<ul style="list-style-type: none">1. Record sound (cross recording)2. Recognize track using google, wit.ai, and “<i>sphinx</i>”3. Check for a match	<ul style="list-style-type: none">1. Initialization2. Thread managing3. Restart the game

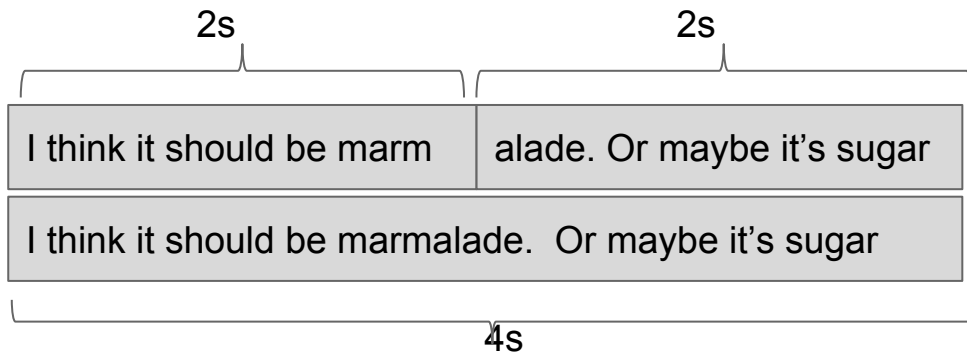
Speech recognition

Cut word problem



Word "Marmalade" and "Sugar" would **not be** recognized

Solution:



Now all words are kept.

Result (video)

<https://youtu.be/KEYknByKYtY>

Better results would be possible?

1. Write your own speech recognizer
2. Find the one that can output the internal **probabilities** for every prediction.
 - a. Set threshold
 - b. Check all words that are with certain probability.
3. Network with less latency.
4. More accurate voice recognition
5. Our own token for google voice recognition API.
- 6.

QA

Project repository: [**https://github.com/yesanton/bomby_robotics**](https://github.com/yesanton/bomby_robotics)