

FinGym



Do Finger Gymnastics with Music

Motivation



Patients and the elderly



Limb Contracture

Motivation

Finger Gymnastics

Motivation

Current Situation & Improvement



Location and time
restricted



PC/Laptop with
LeapMotion



Dull



Music



Lack of
motivation



Gaming
elements

Related Work



Fruit Ninja **FinGym** Tekh Tonic

Interaction Techniques

Gestures



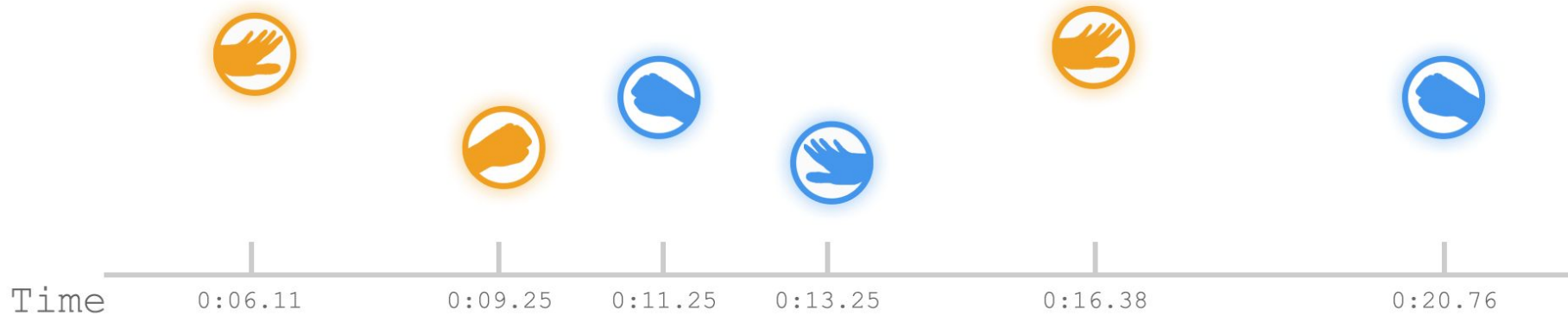
Extended Hand



Fist

Interaction Techniques

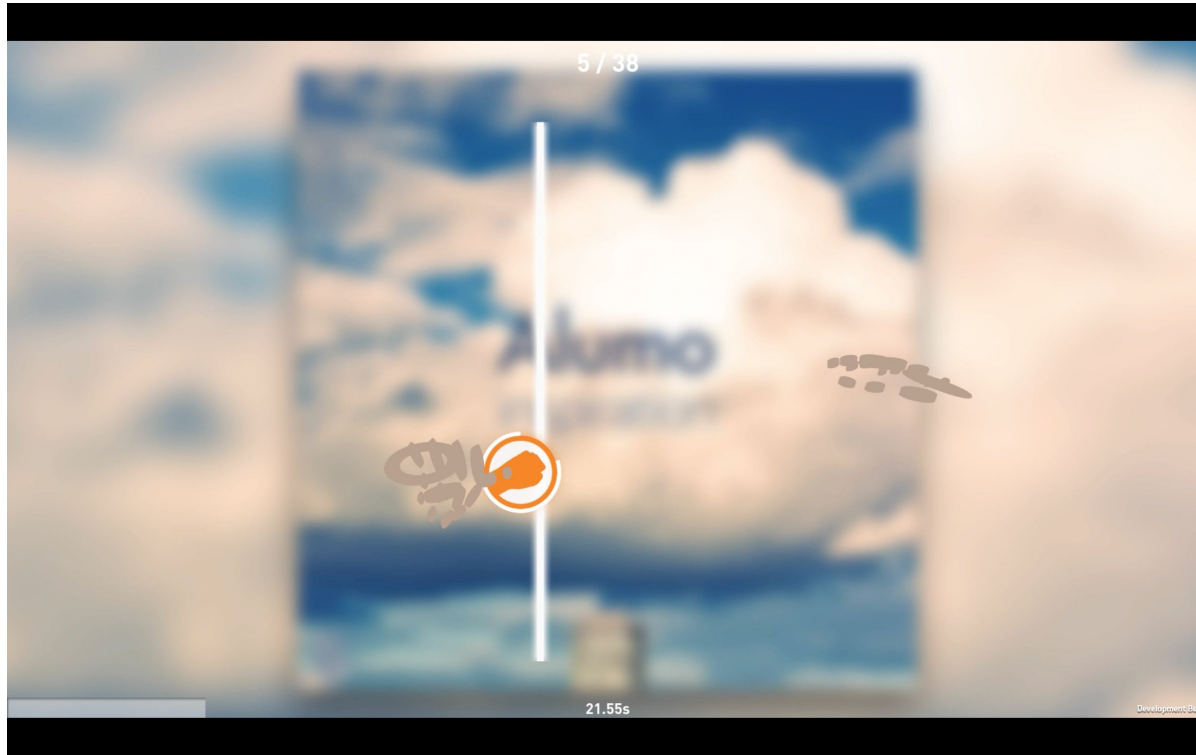
Database



Interaction Techniques



Interaction Techniques



Technical Realization

Implementation



Benefits

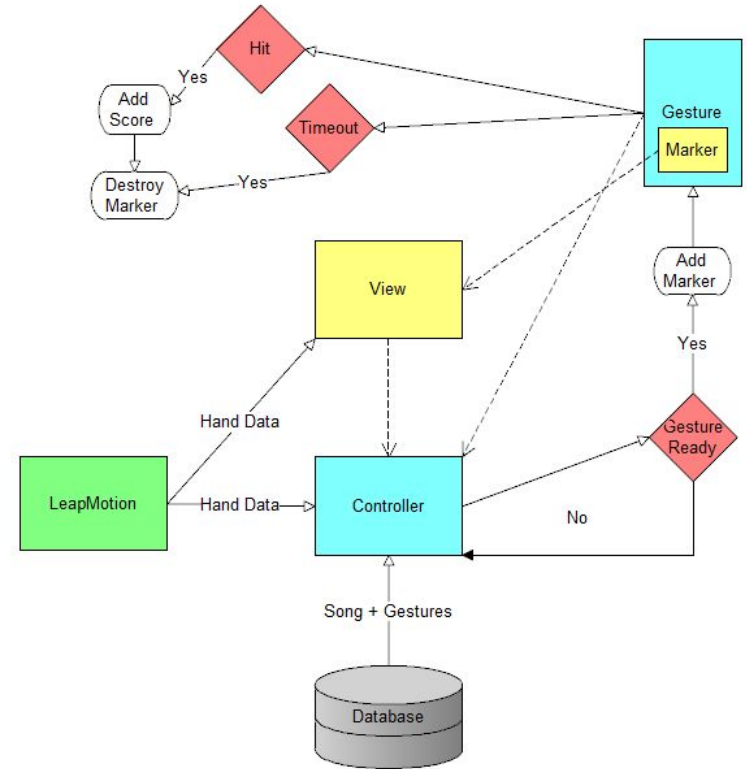
- LeapMotion supports common engines
- Easy integration in Unity
- Wide variety of programming examples

Technical Realization

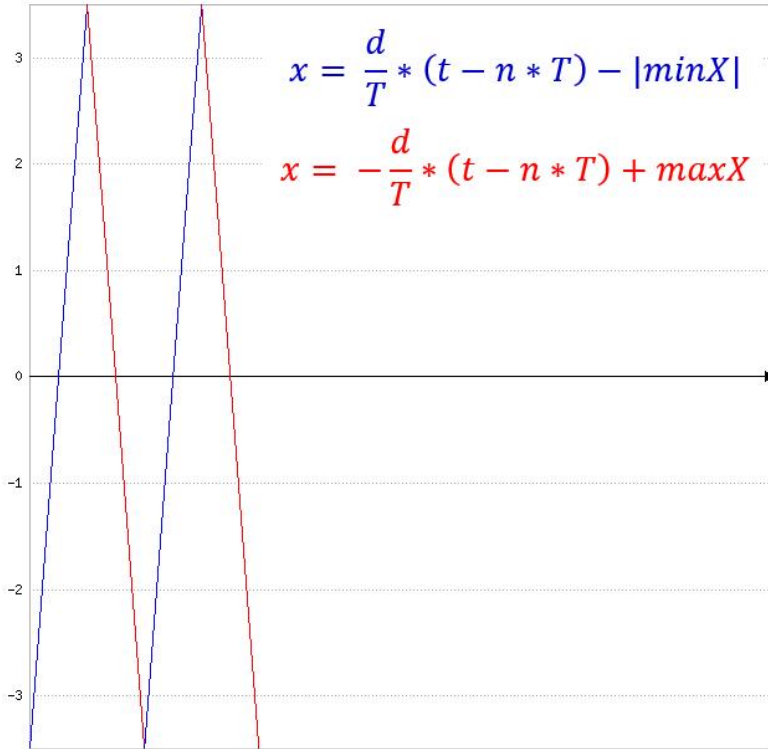
Setup

- LeapMotion Controller
- PC / Laptop
- The software FinGym

Simplified overview of the modules



Technical Realization



$$\max X > \min X$$

$$d = \max X - \min X$$

$T = \text{Duration to move from left to right}$

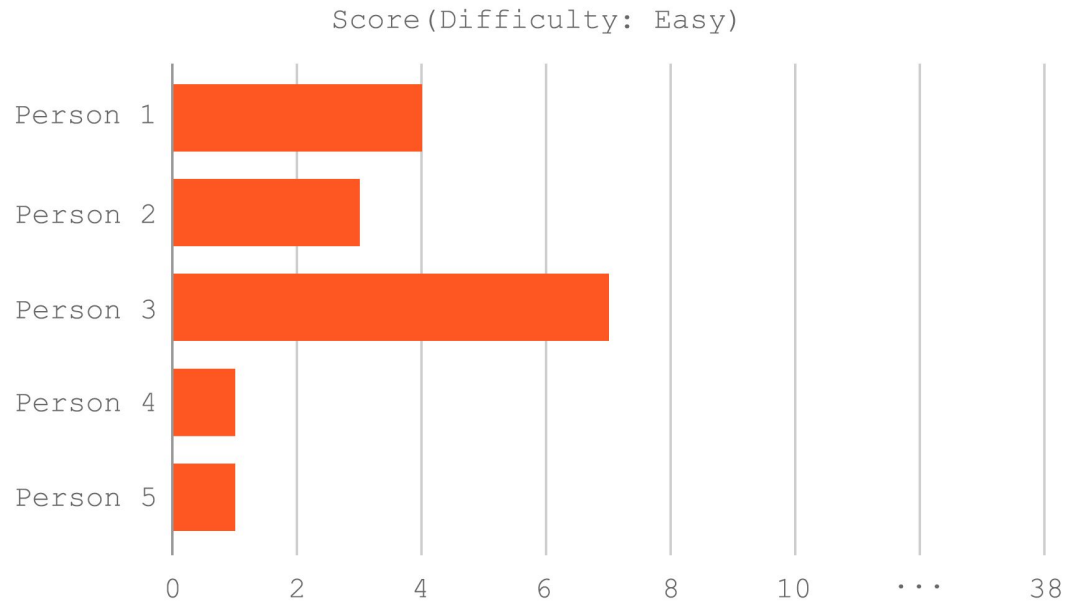
$$n = \text{integer part of } \frac{t}{T}$$

User Tests

- By the help of an outpatient nursing service.
- 5 Persons with physical disease on their hands.
- All were right handed.
- Unequal conditions according to the furniture (Table, Chairs).
- Only 1 person noted his age.

User Tests

Result



User Tests

Questionnaire

- | | | |
|--|------|------|
| 1. Do you find the application useful? | ✓ x5 | ✗ x0 |
| 2. Would you use the application? | ✓ x3 | ✗ x2 |
| 3. Do you believe that the application may have a positive effect on your disease? | ✓ x5 | ✗ x0 |
| 4. Was the coordination of your hands a problem? | ✓ x1 | ✗ x4 |
| 5. Was it easy to hit the markers? | ✓ x5 | ✗ x0 |

Live Demo

Thank you for your
Attentions!

Any questions?