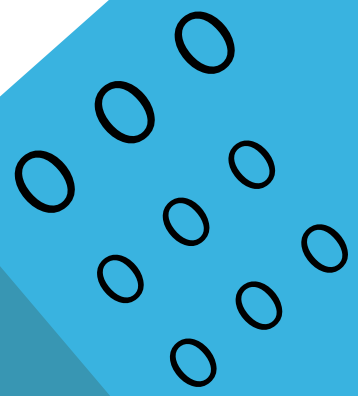
FITNESS AID APPLICATION WITH KINECT



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WHAT'S GOING ON?

Goal?

Personal Training (PT) at Home

For this

Recording By Trainer.

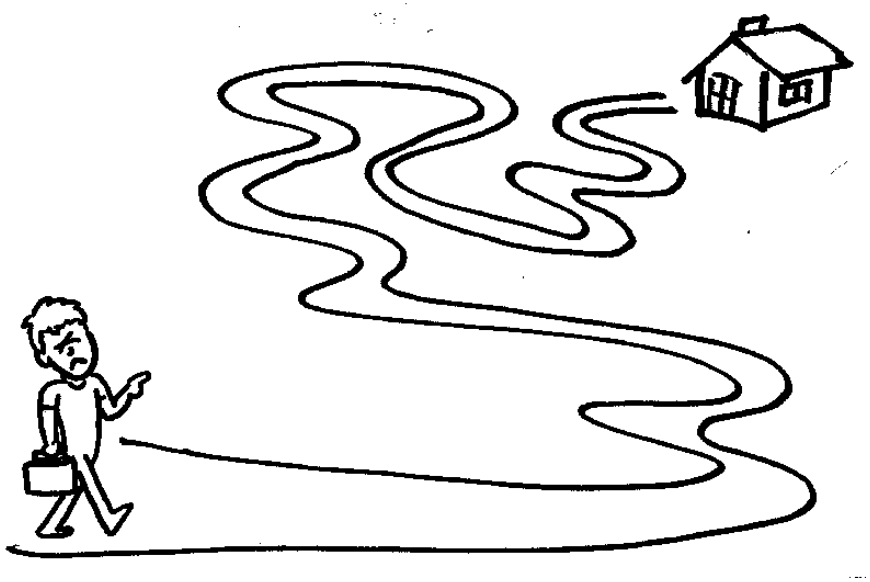
&

Used by Customer

WHY WE NEED THIS?

1.Visiting Gym is Time wasting.

2. Correct Form is important in fitness.



WHY WE NEED THIS?

Problem in current solution

Wii Fit

- Wii Fit does not care about what you're doing on the board
  - Impossible to check if posture is correct
  - Difficult to get feedback from a trainer

WHY WE NEED THIS?

TWO SIDE OF APPLICATION

Recording Gesture

Exercise with kinect

Recorder Side

Key Feature

1. XML Data Structure
    1. Save Skeletal animation with xml

2. Editing function
    1. Trim skeletal animation

XML Data Structure

Save Skeletal animation with xn

Fixed Frame rate animation data

For 20skletal point .

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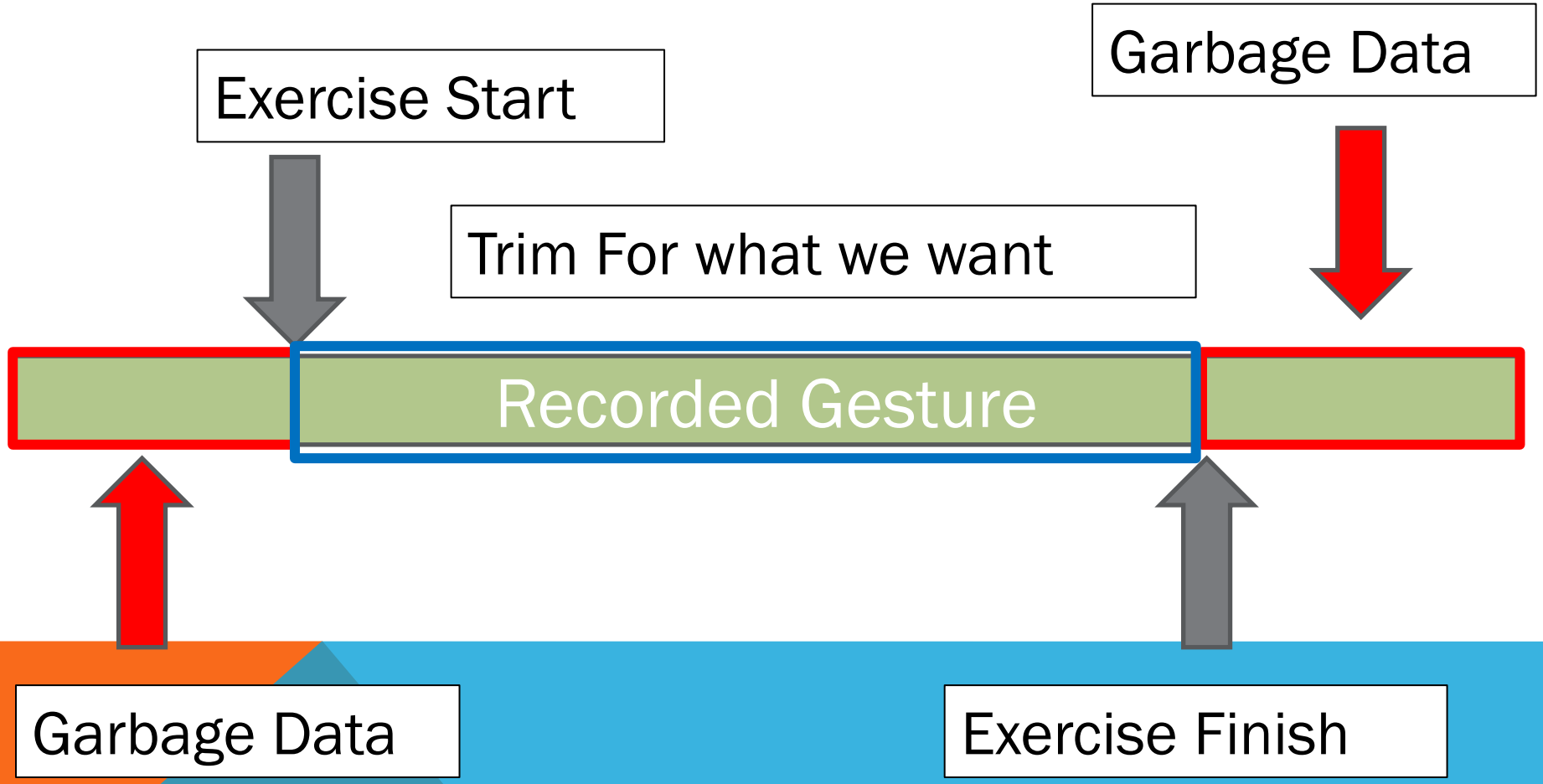
```

Editing function



Player Side

Key Feature

1. Ratio & Position Correction
   1. Ratio Correction for different body.
   2. Position Correction between Trainer skeleton and customer skeleton

2. Compare Algorithm
   1. Compare by position difference
   2. Animation Compare

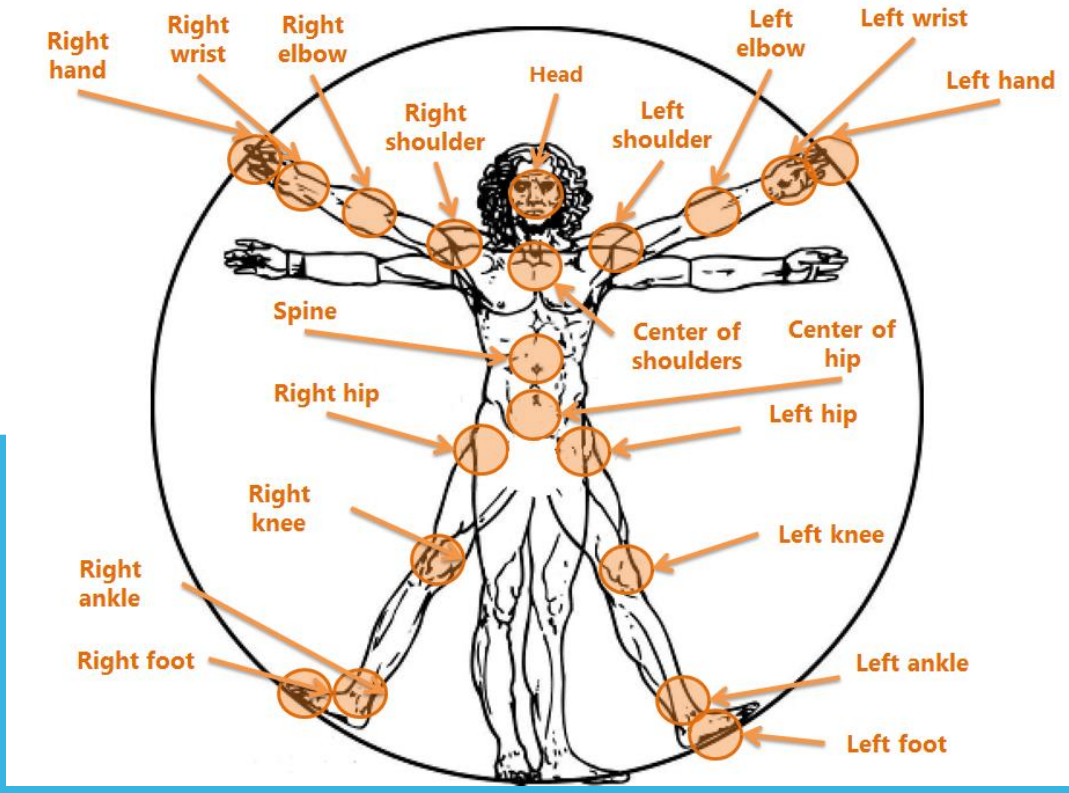
Ratio Correction for different body.

Position Data -> Vector Data

Change to relation between position

(x,y,z)- (x,y,z) -> (x,y,z direction+length)

Trainer Length Ratio-> Customer Length Ratio



Position Correction

Set a datum point.

$\Rightarrow$ depend on type of exercise.

Move Vector data and transform to position data.

Compare Algorithm

Threshold & Distance

if distance between position is smaller than threshold value.

(accuracy =100%)

if distance between position is larger than threshold value. (accuracy=threshold/distance*100)

COMPARE ALGORITHM

Accumulate accuracy by frame.

1. Make Accuracy array buffer (Initialized by 100%)
2. Update accuracy per frame. And it's average value become exercise accuracy.

SCHEDULE & WHAT WE DID