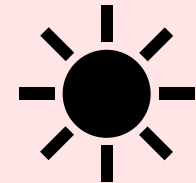
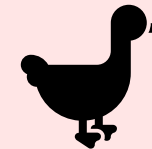
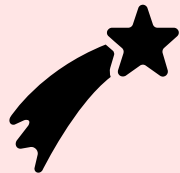




# Lab On App Presentation

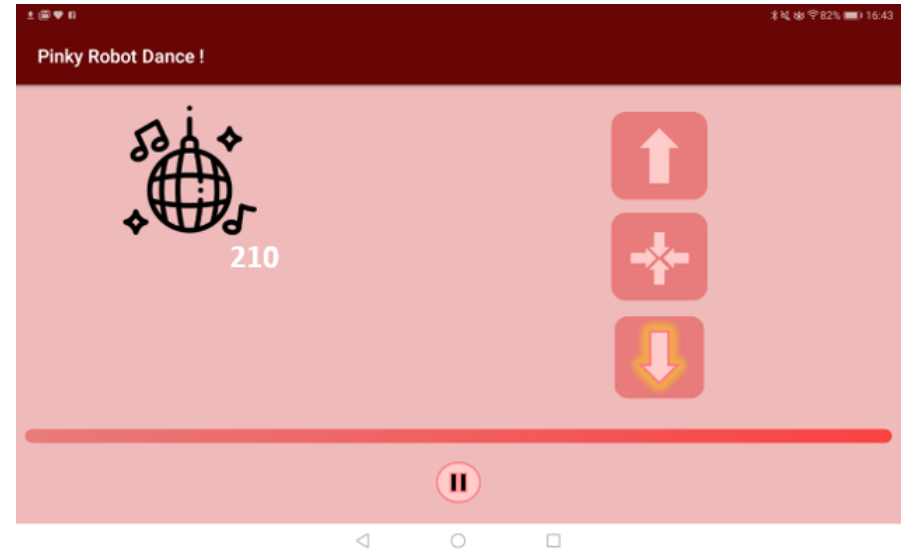
GROUP 13: CLONE DANCE !  
(ALIAS PINKY ROBOT DANCE !)



Audrey Jordan  
Hugo Grall Lucas  
Pauline Maury Larivière

# Pinky Robot Dance Overview

- The user has to follow signs on screen and reproduce the moves with watch
- There is an account for each user
- There are Hall of Fame for each songs
  - 5 best score with dancer name



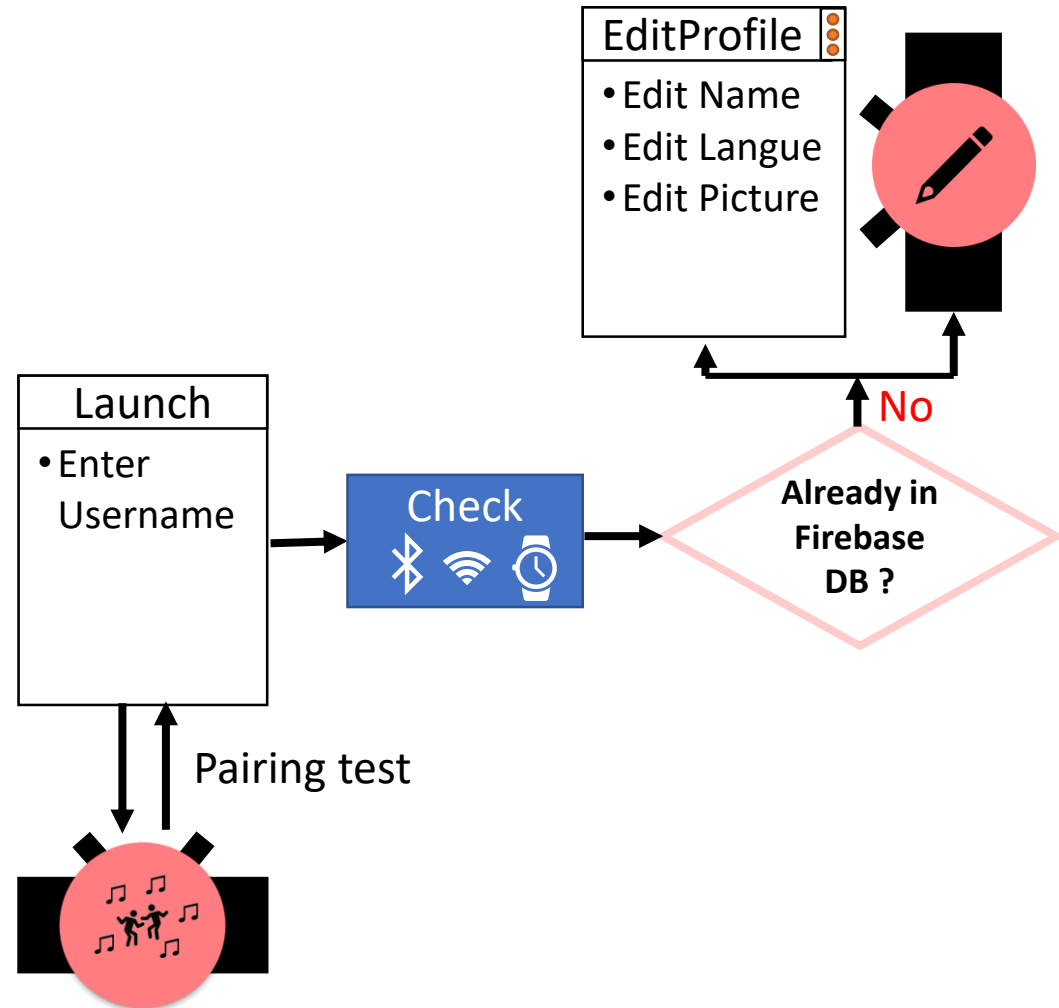
## Devices

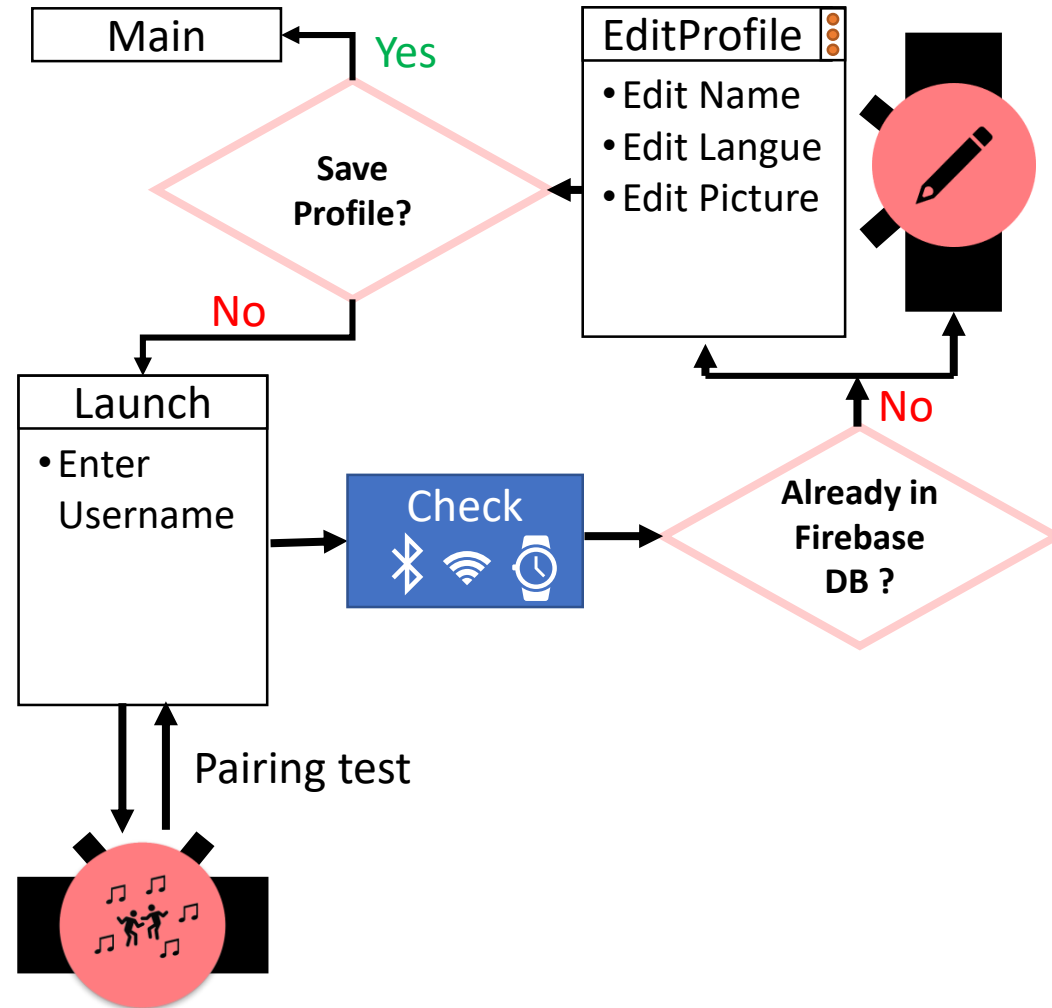
- Tablet Huawei MediaPad T3 (tested for any API above 23 Marshmallow)

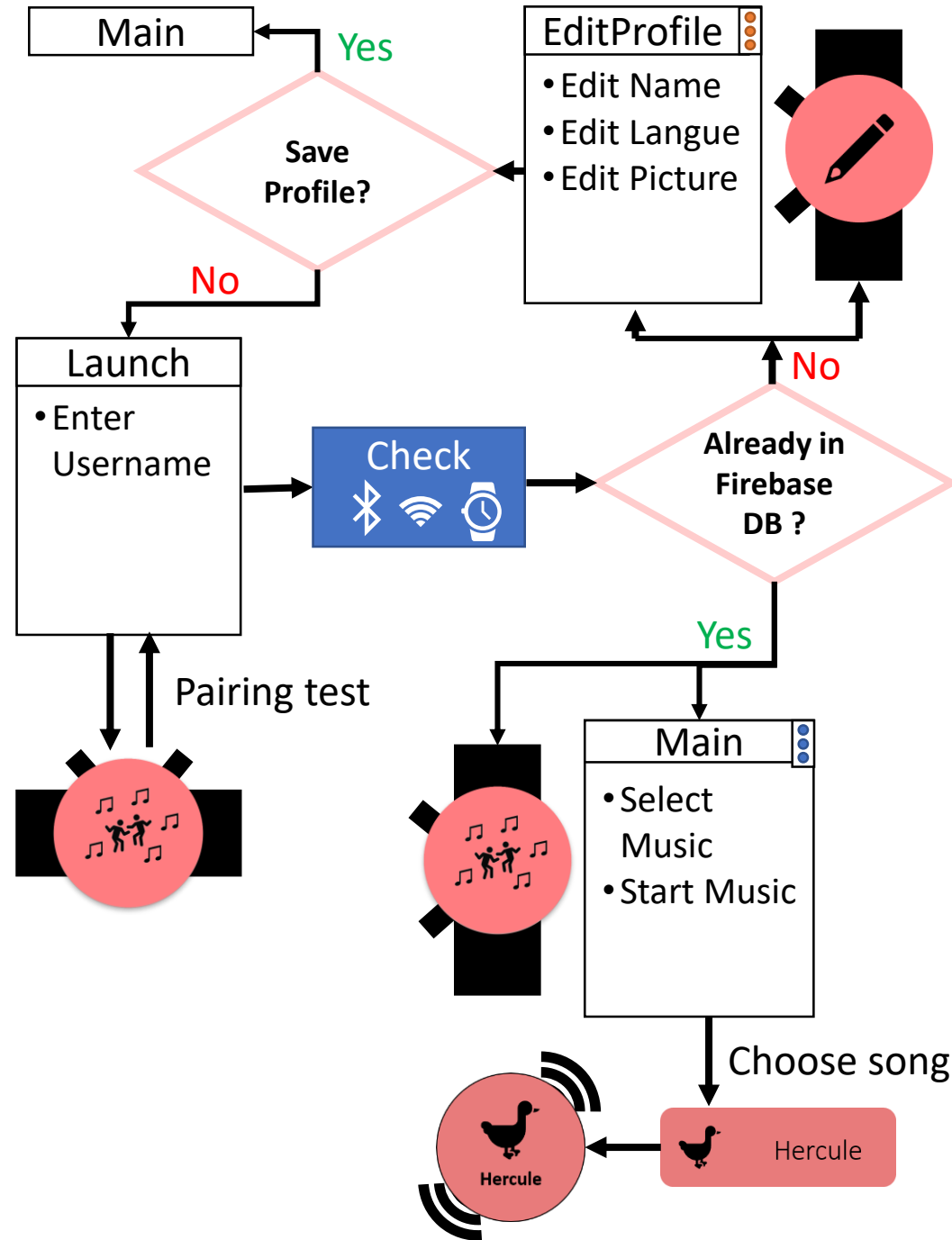


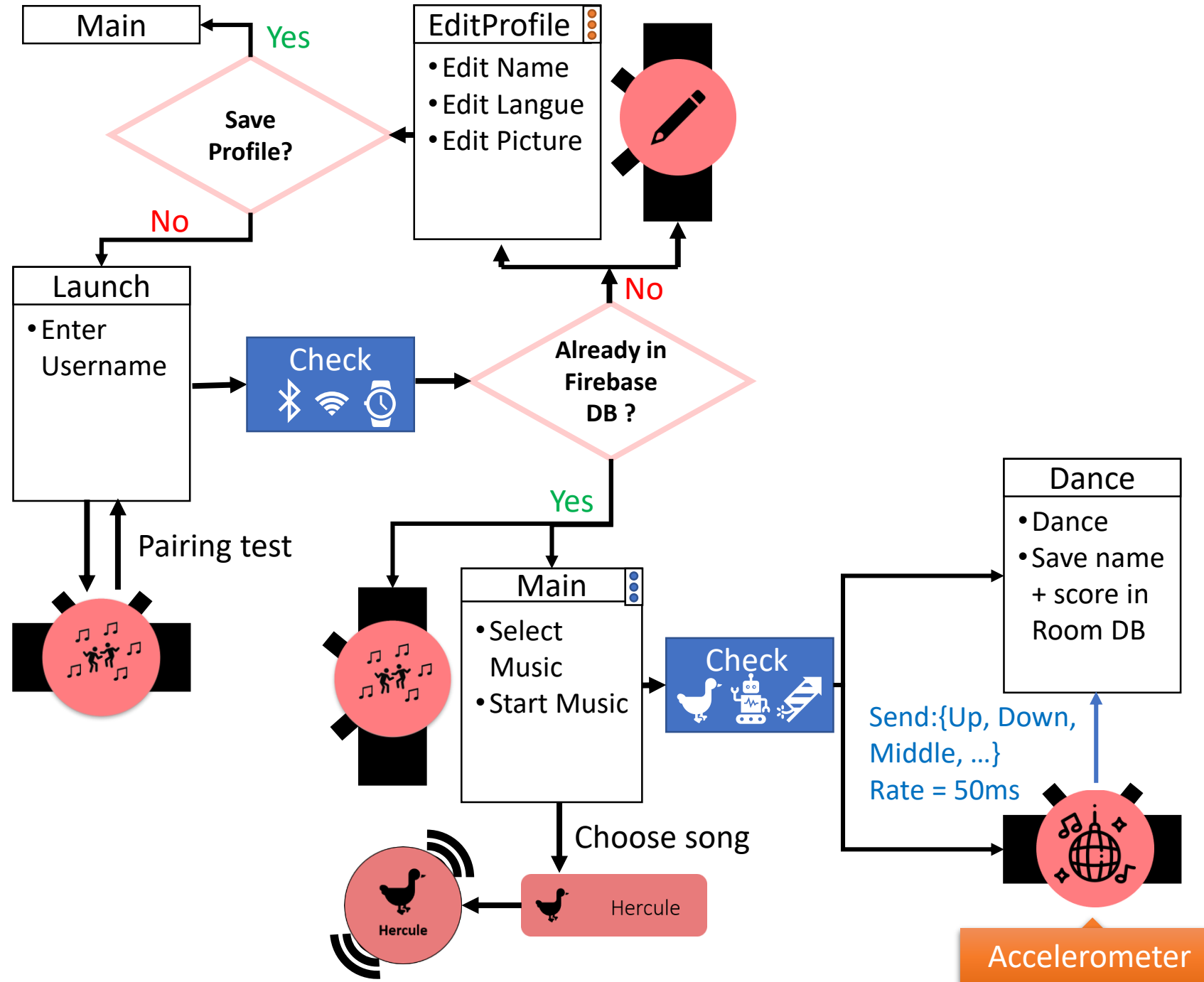
- Watch Huawei LEO-BX9

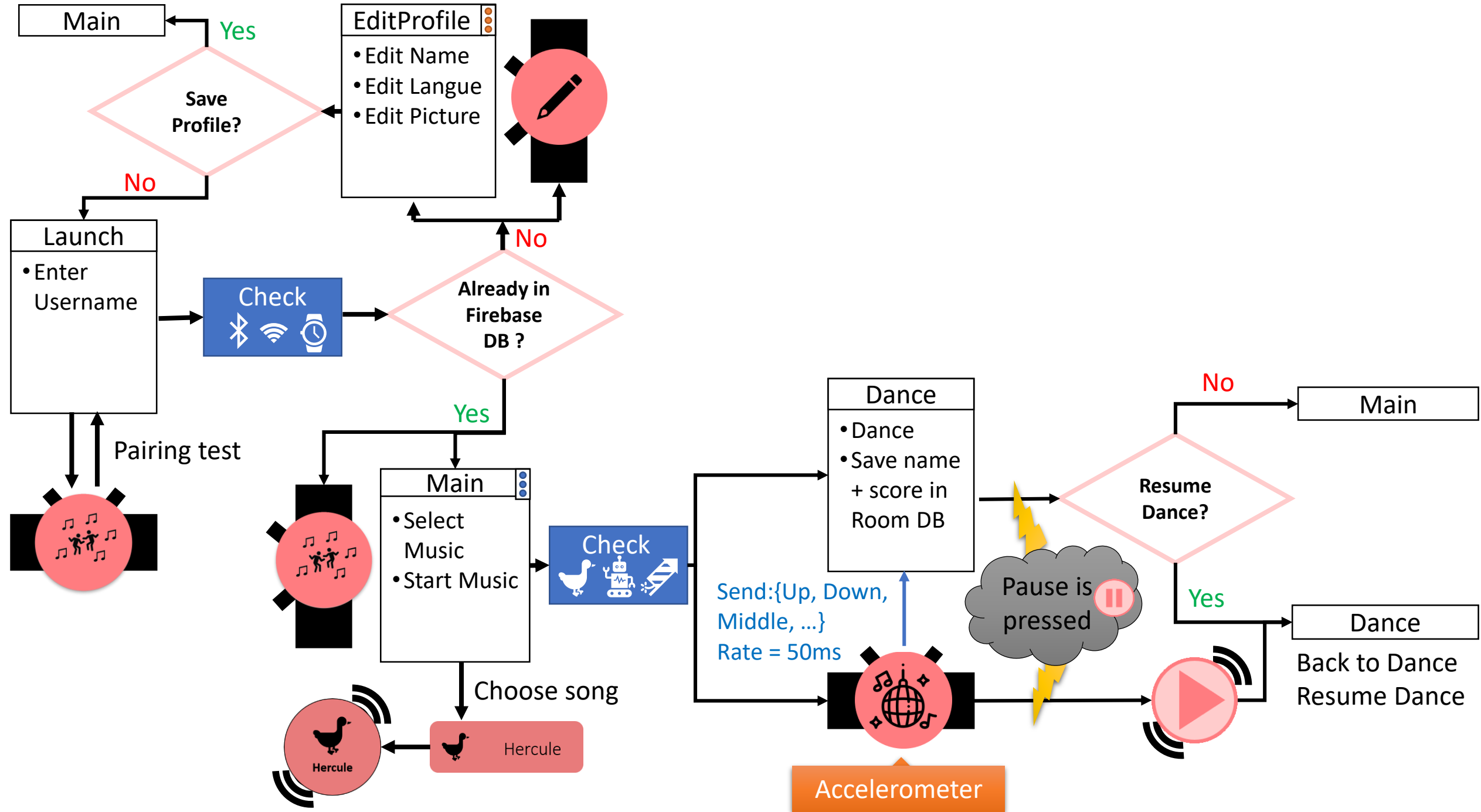


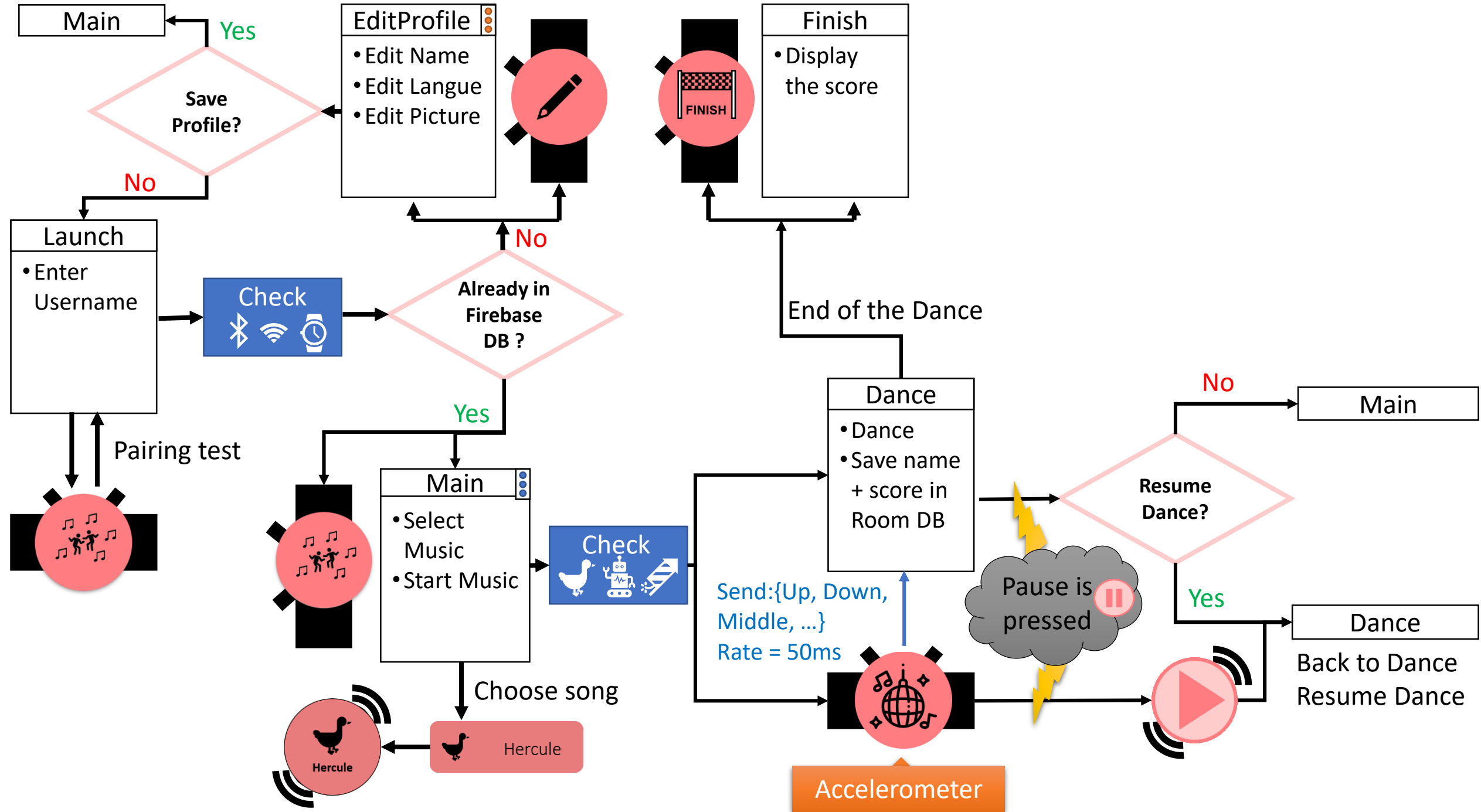




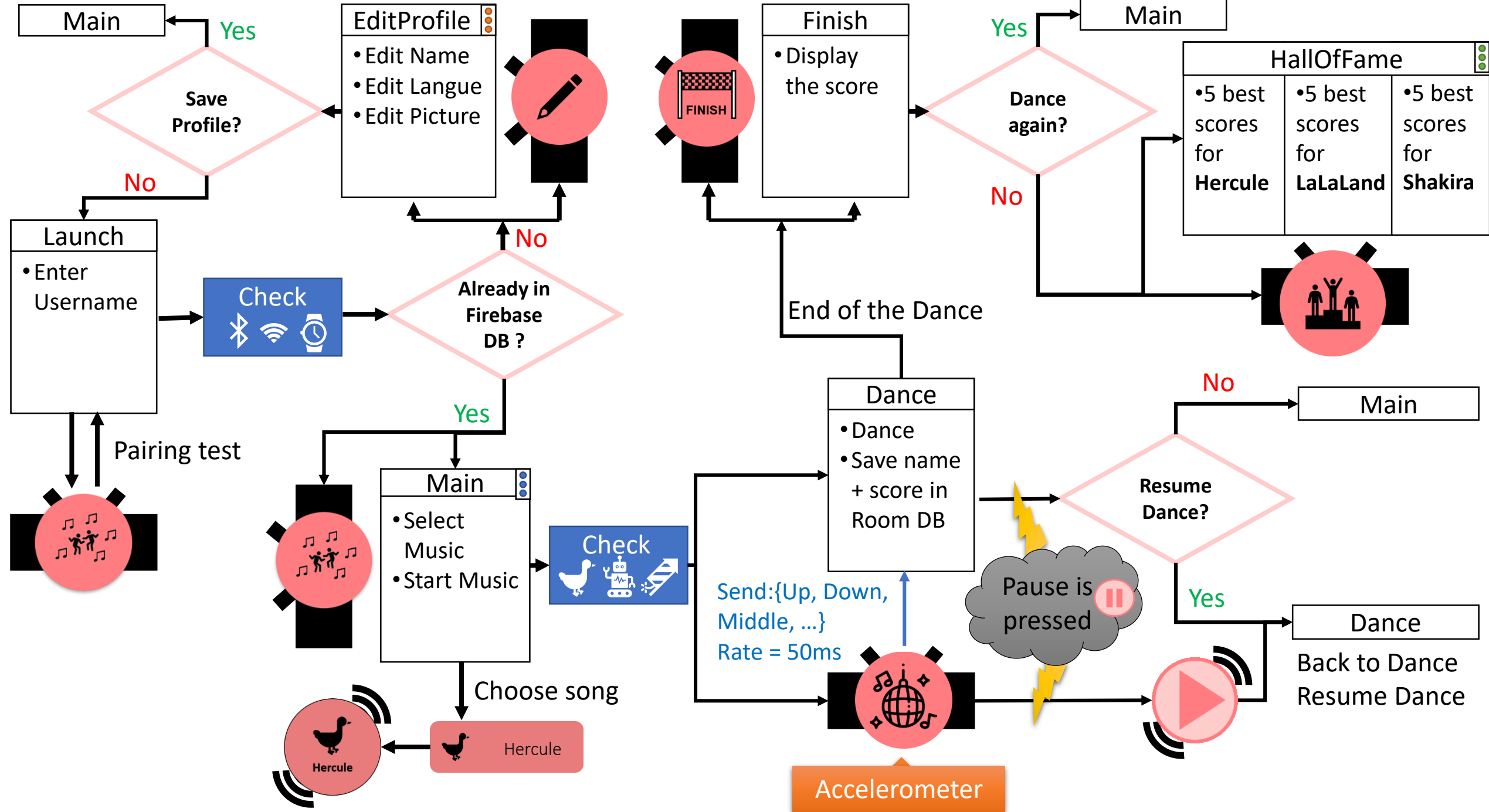


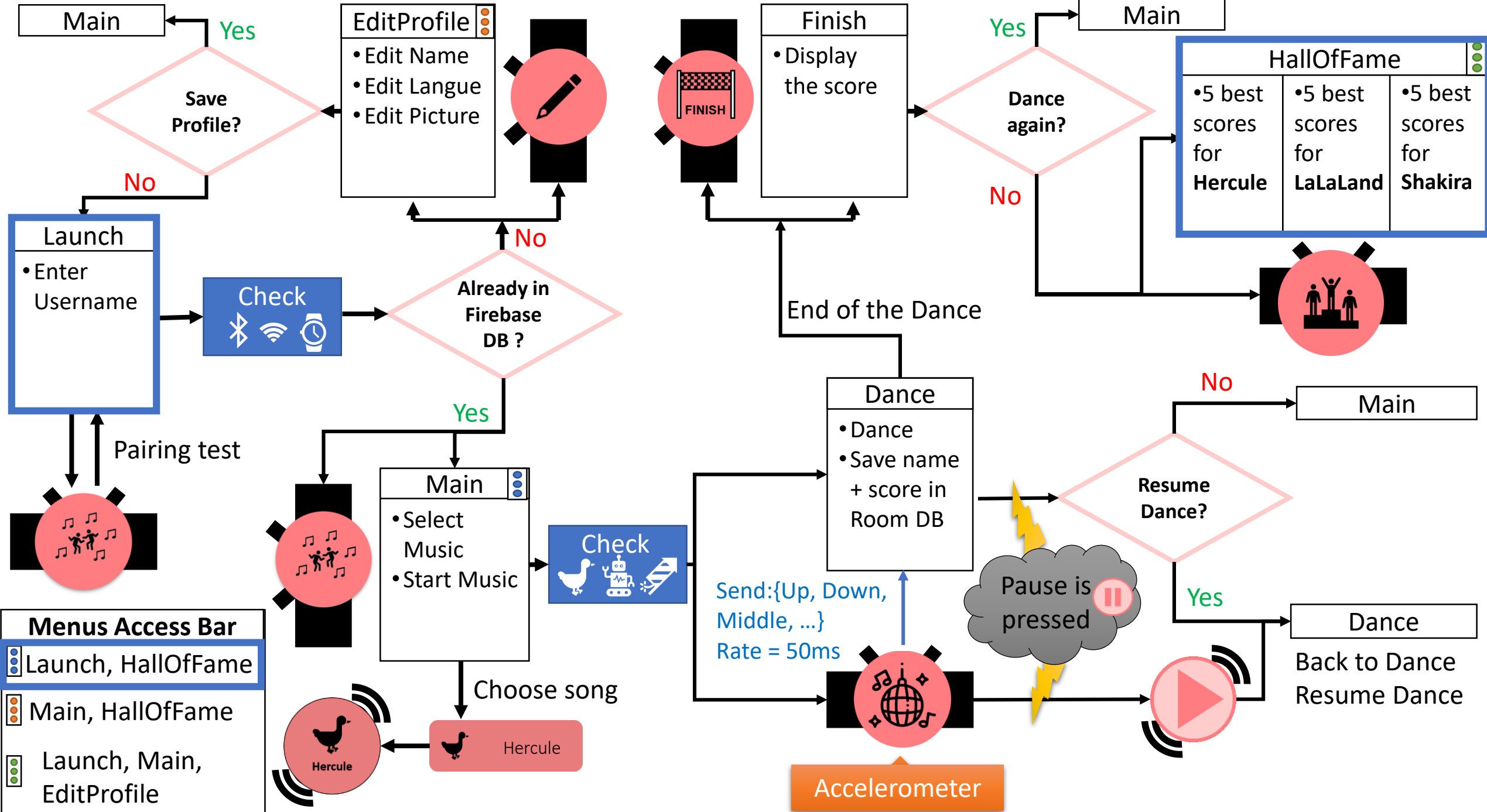


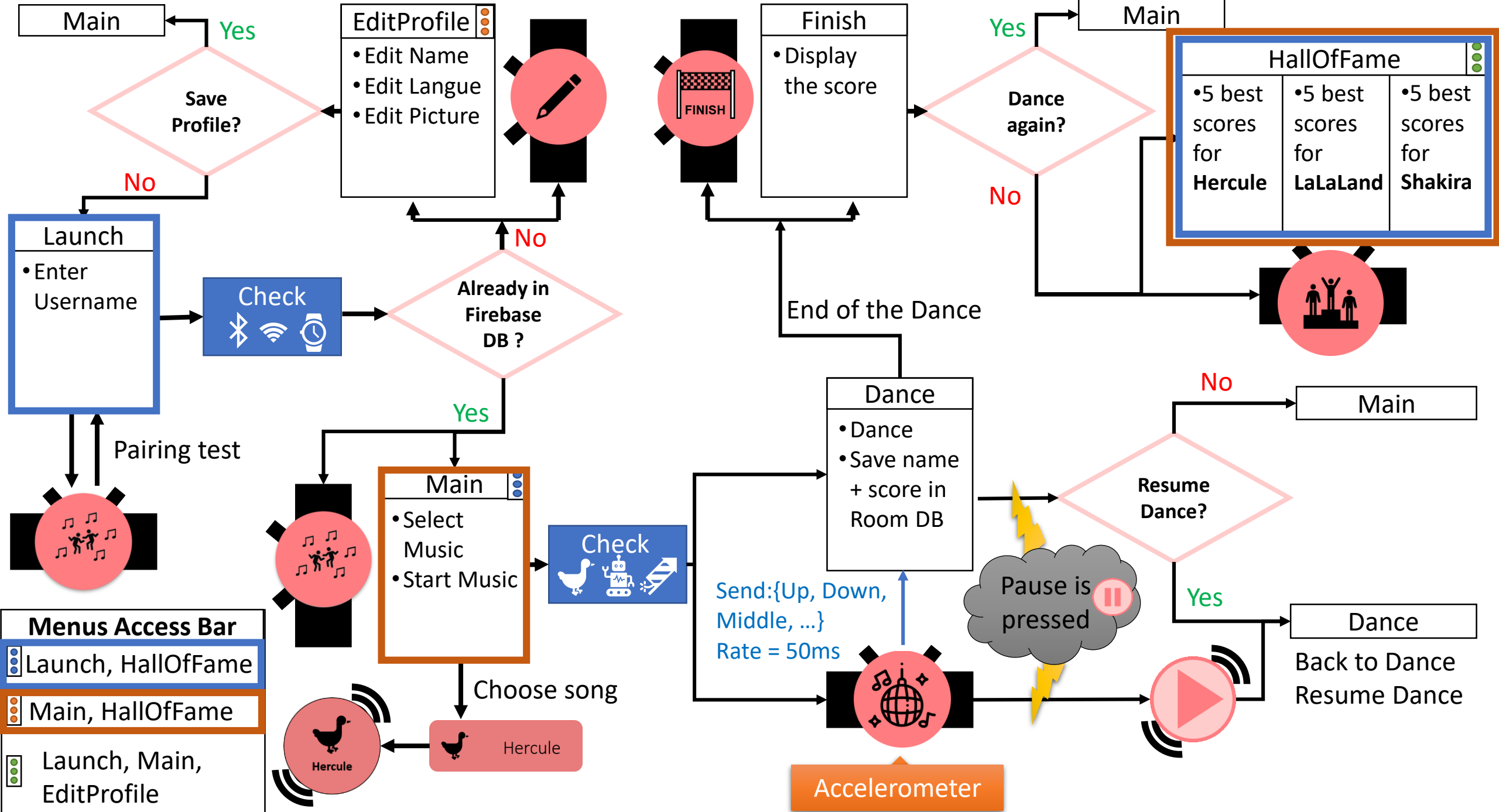


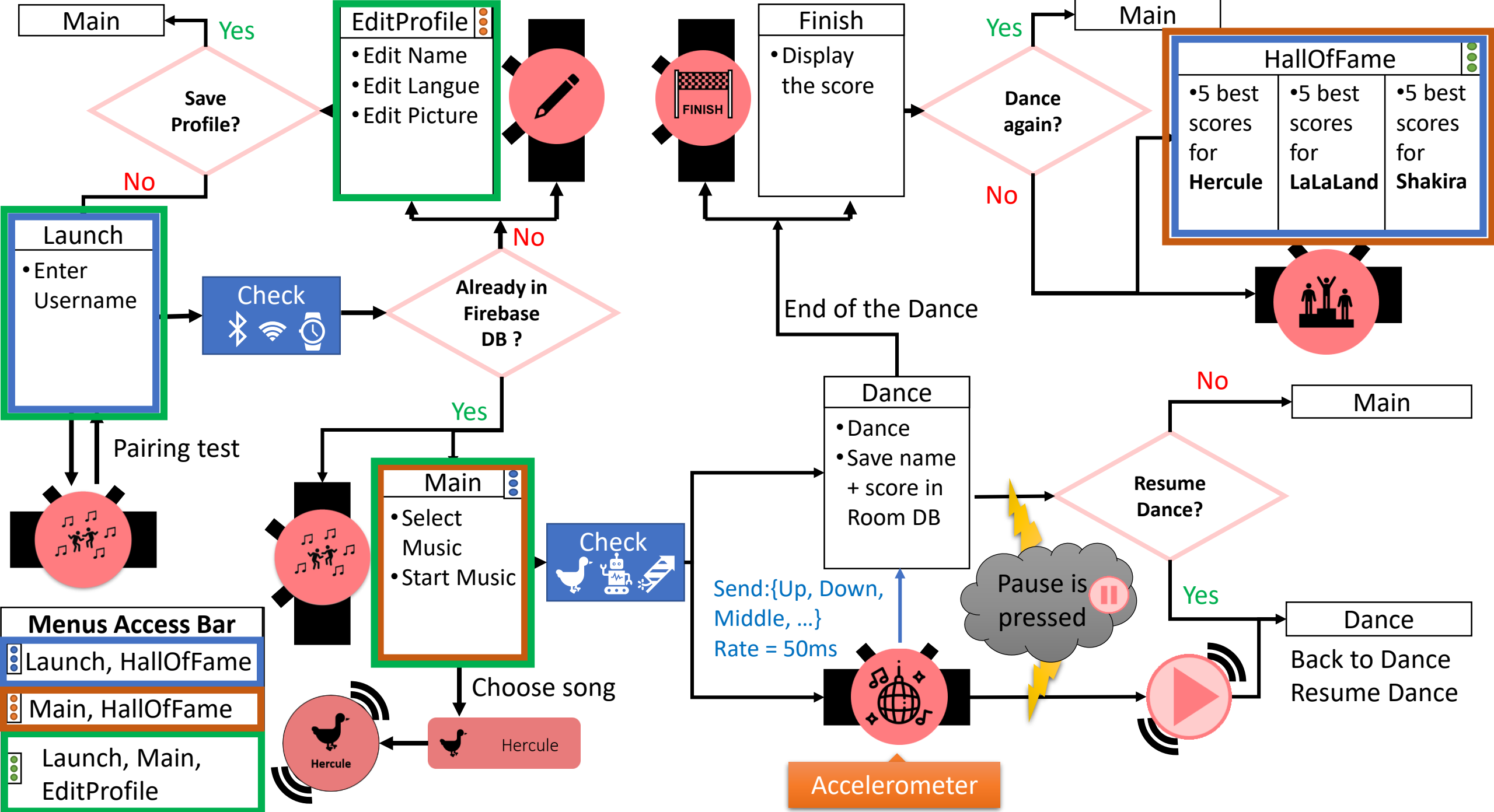






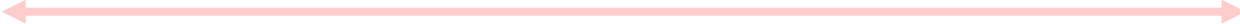






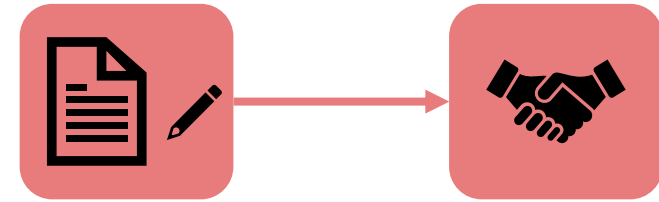
# Work split

Audrey	Pauline	Hugo	All
<ul style="list-style-type: none"><li>- Dance</li><li>- Music</li><li>- Languages</li></ul>	<ul style="list-style-type: none"><li>- Layout</li><li>- Databases (Firebase, Room)</li></ul>	<ul style="list-style-type: none"><li>- Communication with watch</li><li>- Sensor processing</li></ul>	<ul style="list-style-type: none"><li>- App design</li><li>- Debugging</li><li>- Help others</li><li>- Presentation preparation</li></ul>



# App design

- Agreed on structure on paper before coding
- Main components:
  - Activities (5) and Fragments (3)
  - Menus
  - Services (Watch)
  - Songs with associated moves
  - Matlab file for movement generation
  - Languages: French and English
  - Databases (Firebase DB and Room DB)
  - Layouts



Picture:  
Hall of fame at end of finish  
dance

# Data management

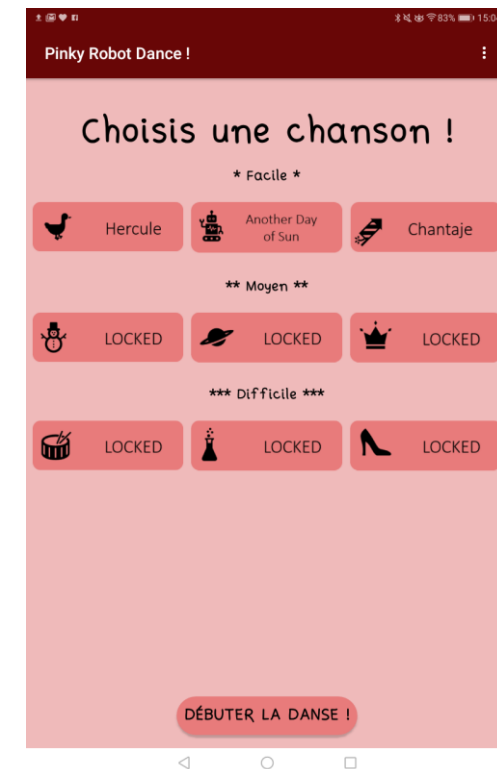
- Firebase: stores users information
  - Identifier
  - Name
  - Language
  - Profile Picture (Storage database)
- Room database: Store results for each dance
  - Halls of Fame



Name	Music	Score
Audrey	Hercule	800
Hugo	Chantaje	1000
Pauline	Another Day of Sun	10

# User Interface

- Theme editor: app colors
- Layout robust to different screen size
  - Portrait and landscape mode
- Writing style: SimplehandwritingRegular.ttf
- Images: self-made with powerpoint icons
- Watch: Uses vibrations (song selection)
- Custom:
  - DialogBox,
  - ProgressBar,
  - Button





# DanceActivity: Algorithms

## WATCH:

Sensor: `onReceive()`

```
// get event
```

```
accX += event[0]
```

```
accY += event[1]
```

```
accZ += event[2]
```

```
count ++
```

Every **50ms**: `sendDataToBroadcast()`

```
accX = mean(accX)
```

```
accY = mean(accY)
```

```
accZ = mean(accZ)
```

```
mode = classifier(acc)
```

```
// mode ∈  
{Wait, Up, Middle, Down, Unkwon}
```

```
send2Tablet(mode)
```

```
reset(count, acc)
```

## TABLET:

From Broadcast: `onReceive()`

```
// get message
```

```
if(mode == askedPosition)
```

```
    countGoodMovement += 3
```

```
    count++
```

```
else if(mode == nextPosition)
```

```
    countGoodMovement += 1
```

```
    count++
```

```
else if(askedPosition != Wait)
```

```
    count++
```

```
end
```

## TABLET:

Every **1s**: `progressRunnable()`

```
ratio = countGoodMovement/count
```

```
ratio *= FACTOR_PERCENT
```

```
if(ratio > 75)
```

```
    // PERFECT
```

```
else if(ratio > 50)
```

```
    // SUPER
```

```
else if(ratio > 25)
```

```
    // OK
```

```
else if(askedPosition != 0)
```

```
    // WAIT
```

```
else
```

```
    // NOPE
```

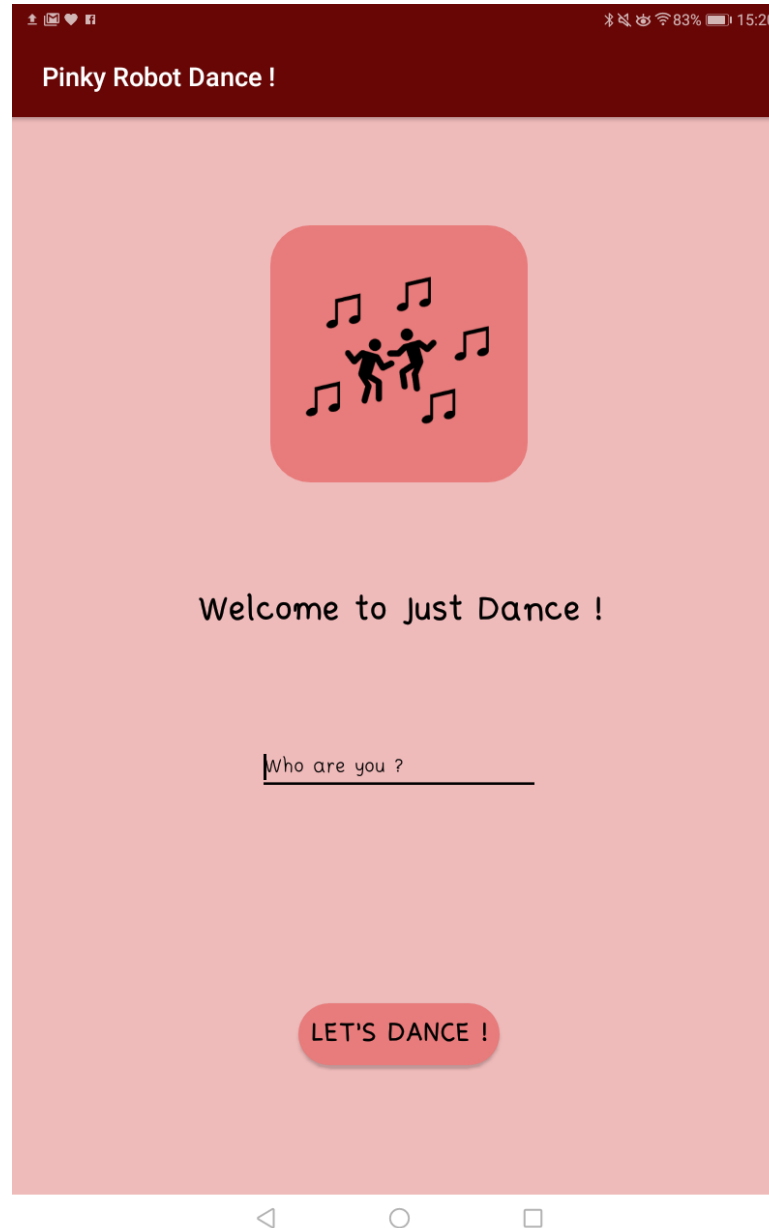
```
end
```

```
updateProgressBar()
```

```
reset(count, countGoodMovement)
```

# Demo

Let's do it



It's dancing  
time !!

Who will get  
the best score ?