



# Final Project- Korean Music & Hamster Robot Dance

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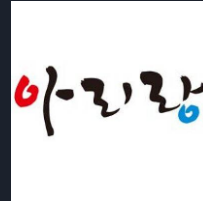


# Agenda

- Background
- Project introduction
- Robot Used
- Development process
- Project code
- Video

# Background

I listen to Korean music from Tik Tok videos and Youtube a lot because there are lots of famous Korean artist like BTS and blackpink, and many Kpop songs like Butter, Gangnam style, Kill this love, baby shark, and Korean traditional songs like arirang (아리랑). So I want to introduce those music to the users with simple dance movement of Hamster Robot in the project code.





# Project introduction

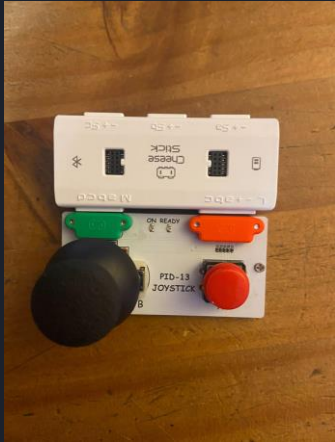
The Code utilizes JoyStick so that users can move the Hamster Robots to the picture of Korean song that user wants to listen to.

Then, the AI Camera is used to detect the picture of Korean Songs. When the pictures are found, the Scratch begins to play the music and Hamster Robot dances.

The users would be able to enjoy Korean musics with hamster Robot dancing

# Robots Used

Cheesestick with Joystick



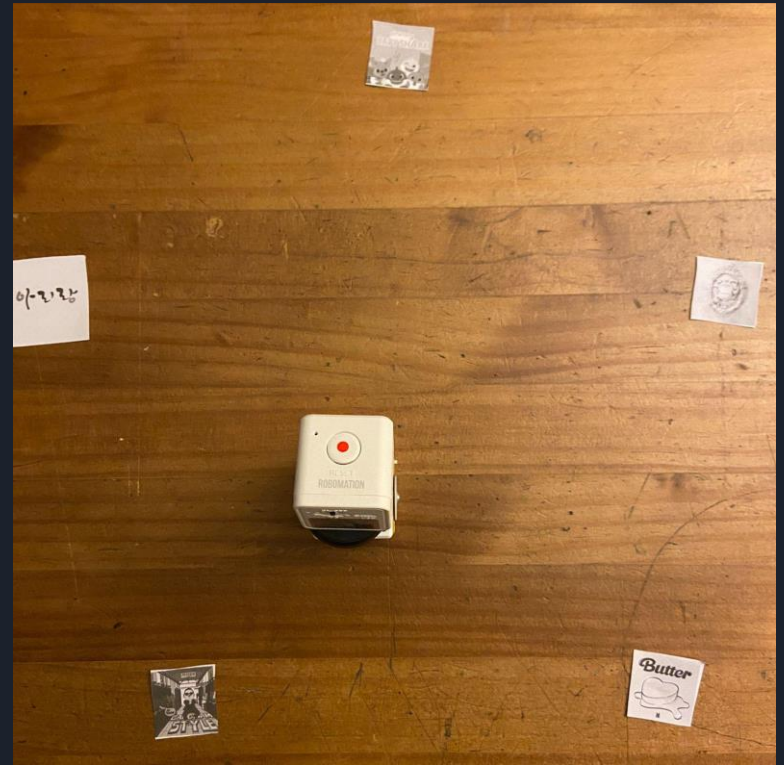
AI Camera



Hamster Robot

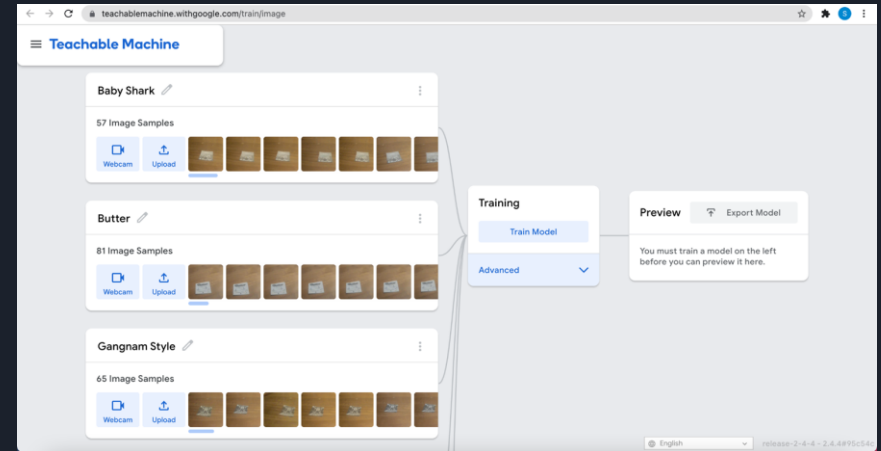
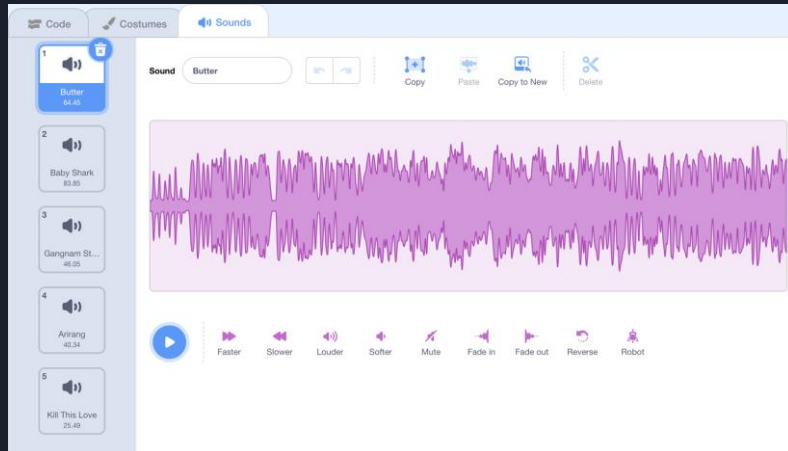


# Supplies (pictures)



# Development Process

1. Make Code of Hamster Robot Controller with Joystick
2. Record Korean songs on Scratch
3. Make image Model for Korean song pictures with 60-80 samples
4. Make code for AI Camera and Hamster Dance movement



# Project Code

```
when clicked
  0 : set wheels to left: 30 right: 30
  start PID-13 joystick and button
  PID: set x1 range 0 - 125.5 - 250 to -100 - 0 - 100 without decimal point
  PID: set y1 range 0 - 131 - 250 to -100 - 0 - 100 without decimal point
```

Code for controlling the Hamster Robot with Joystick

```
forever
  if PID: x1 < -80 then
    set wheels to left: -30 right: 30
    wait until PID: x1 = 0
  else
    if PID: x1 > 80 then
      set wheels to left: 30 right: -30
      wait until PID: x1 = 0
    if PID: y1 < -80 then
      set wheels to left: -30 right: -30
      wait until PID: y1 = 0
    else
      if PID: y1 > 80 then
        set wheels to left: 30 right: 30
        wait until PID: y1 = 0
```



# Project Code

Load Teachable model and  
classify model

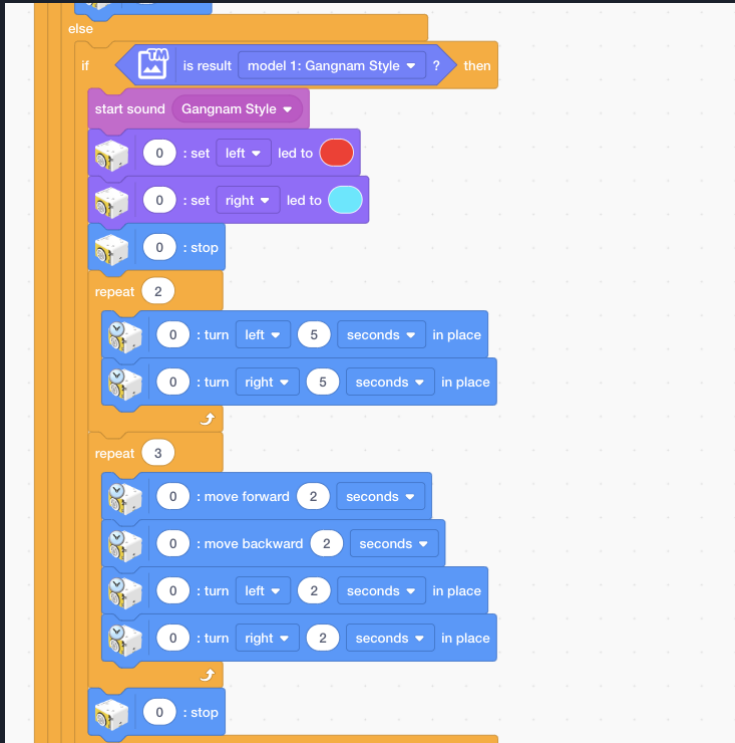
```
when green flag clicked
  model 1 : load model from URL https://teachablemachine.withgoogle.com/models/ZHrX8vImh/
  wait 1 seconds
  forever
    model 1 : classify image once now
    if is result model 1: Baby Shark ? then
      play sound Baby Shark until done
      : set both led to
      : set wheels to left: 0 right: 0
      : stop
    repeat 20
      : turn left 1 seconds in place
      : turn right 1 seconds in place
    : stop
  else
```

Code for AI Camera and Hamster Dance  
movement

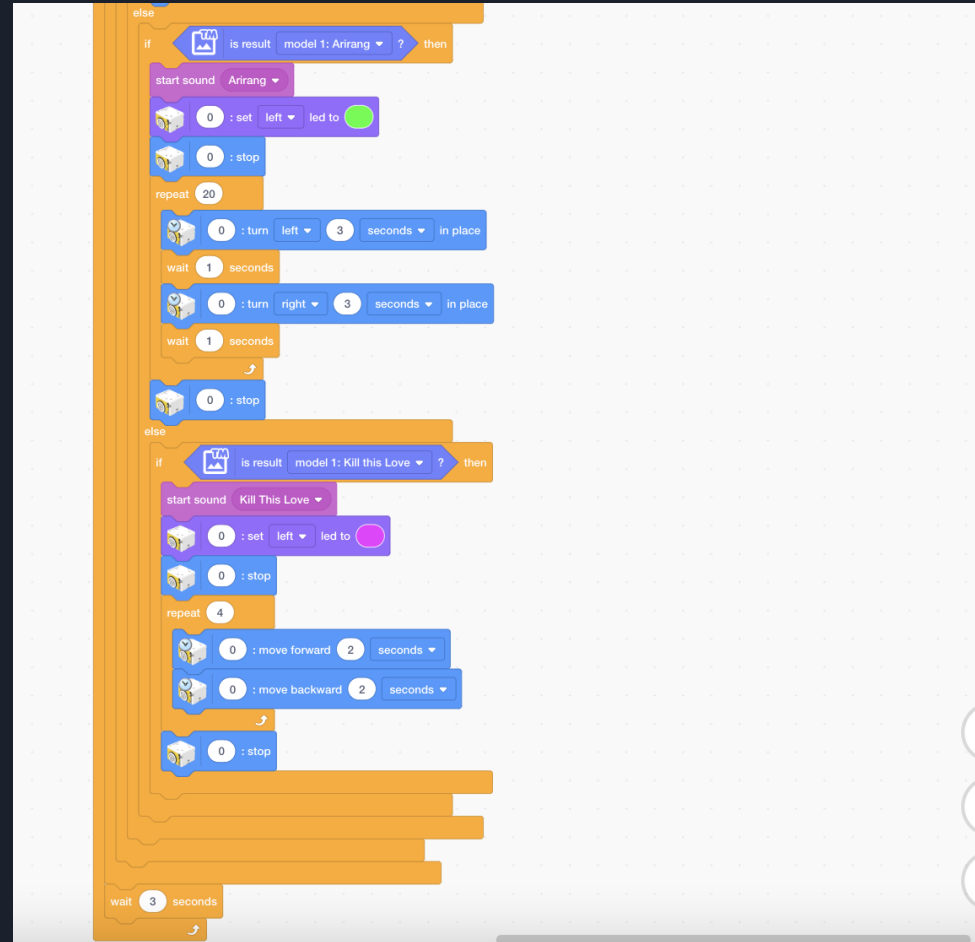
```
else
  if is result model 1: Butter ? then
    : set wheels to left: 0 right: 0
    : set both led to
    start sound Butter
    repeat 4
      : turn left 1 seconds in place
      : move forward 2 seconds
    wait 1 seconds
    : move backward 2 seconds
    wait 1 seconds
    : turn right 1 seconds in place
    : move forward 2 seconds
    wait 1 seconds
    : stop
```

# Project Code 2

Code for AI Camera and Hamster Dance movement



```
else
  if [is result model 1: Gangnam Style ?] then
    start sound Gangnam Style
    [0] : set left led to red
    [0] : set right led to cyan
    [0] : stop
    repeat 2
      [0] : turn left 5 seconds in place
      [0] : turn right 5 seconds in place
    repeat 3
      [0] : move forward 2 seconds
      [0] : move backward 2 seconds
      [0] : turn left 2 seconds in place
      [0] : turn right 2 seconds in place
    [0] : stop
```

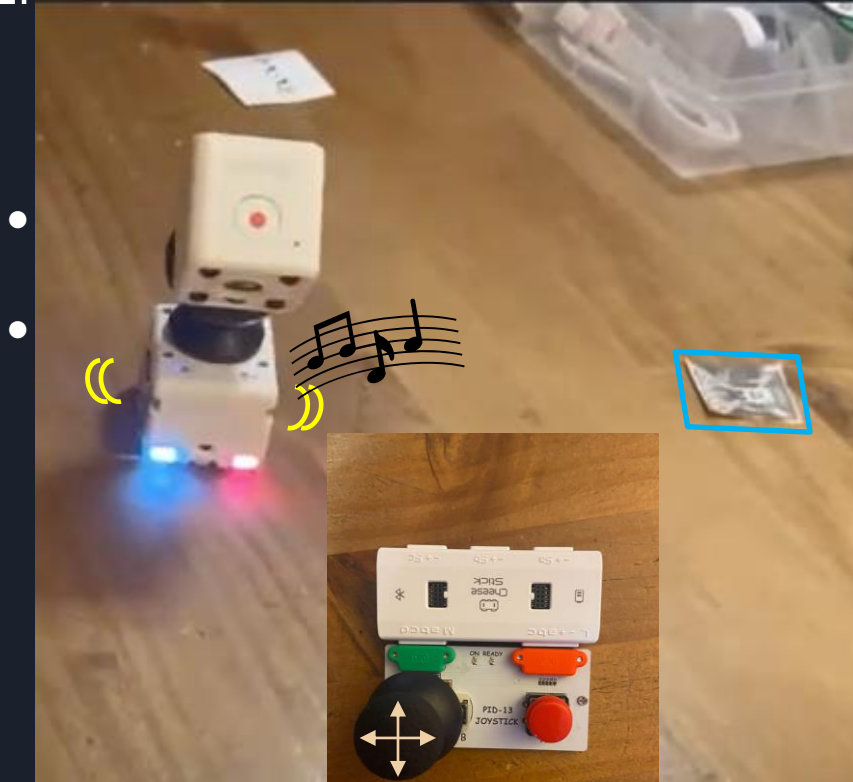


```
else
  if [is result model 1: Arirang ?] then
    start sound Arirang
    [0] : set left led to green
    [0] : stop
    repeat 20
      [0] : turn left 3 seconds in place
      wait 1 seconds
      [0] : turn right 3 seconds in place
      wait 1 seconds
    [0] : stop
  else
    if [is result model 1: Kill This Love ?] then
      start sound Kill This Love
      [0] : set left led to magenta
      [0] : stop
      repeat 4
        [0] : move forward 2 seconds
        [0] : move backward 2 seconds
      [0] : stop
    wait 3 seconds
```

# Project Video



# Limitation of the project



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- 

ally cool with limited hamster

l was not 100 percent accurate



Thank you