

Project Descriptions

Some of the projects are unavailable in my github due to sensitive information included in the project.

(Personal Projects)

1. Cashier Application (2019, Windows Desktop) – C#, MySQL, Visual Studio Community

Cashier application made for a family shop that is able to register items to the database, show the price when an item is scanned, create and print invoice (User Interface is in Indonesian Language for family usage).

- Special feature: connect different unit of measures of an item along with their prices (1 item with different units, e.g. 1 pack and 1 box)

Screenshots (see [Appendix](#)):

2. Rhythm Game – Le Dawn (2015, Windows Desktop, Programmer) – C#, Visual Studio Community

A rhythm game made for a University of Surabaya competition for 1st semester IT students, in a team of 2.

- Features: tap keyboard based on the rhythm, song selection, play song, pause game, result screen, customize key, music player, and make your own rhythm on any song.
- Made using Windows Form template in Visual Studio.

Screenshots (see [Appendix](#)):

3. Discord Bot (2019, Discord) – NodeJS, JSON

Simple made-for-fun Discord Bot utilizing discord.io library, for discord application.

- Features: google image search, multi-server, favorite user, greet user, reply user when detecting certain words (e.g. word: “hi”, reply: “hello”), customize setting (greet chance, reply chance), and embedded reply message.

Screenshots (see [Appendix](#)):

4. (In-Progress) 3D Game Application (2018-now, Windows Desktop) – C#, Unity Engine

A made-for-fun RPG game application using Unity Engine.

- Features: Character movement and animation, 3D camera system, quest system, dialogue system.
- Heavily using Object Oriented Programming techniques.

Screenshots (see [Appendix](#)):

(Degree Projects)

5. Safer Trip (2018, Web) – NodeJS, Javascript, CSS, HTML, AWS (Amazon Web Service), Docker (QUT)

A web application that shows possible delays (event, roadwork) on the road in the provided location.

- This project includes deploying with Docker and hosted using AWS.
- Written in NodeJS for the server-side, and Javascript for the client-side. The layout is customized using bootstrap.

Screenshots (see [Appendix](#)):

6. Feeling Tweet (2018, Web) – NodeJS, Javascript, CSS, HTML, Microsoft Azure, Docker, SQL (QUT)

A web application that shows a semantic analysis of a twitter stream (in real-time), based on the input keyword.

- This project includes deploying with Docker, hosted using Microsoft Azure, and instances scaling based on the CPU workload.
- Written in NodeJS for the server-side, and javascript for the client-side. The layout is customized using bootstrap.

Screenshots (see [Appendix](#)):

7. Bird Conservation Project in Bhutan (2018, Raspberry Pi) – Python, MySQL, Raspberry Pi (QUT)

A device that focuses on teaching the community about endangered birds in Bhutan through a fun and interactive application.

- Features: Bird info, bird piano, bird quiz, bird sound player
- Made for Raspberry Pi utilizing Tkinter in python.

Screenshots (see [Appendix](#)):

8. Creating AI in 3D video game with Imitation Learning in Unity (2019, Windows) – C#, Unity, Visual Studio, Blender (QUT) (Application video: <https://youtu.be/G9E32ZS2xJg>)

A simple platform game application with an AI that is able to complete the game after being trained by a human player, using Imitation Learning.

- Features: AI created with Imitation Learning, simple UI such as main menu/pause/loading screen, a simple level for AI to complete.
- Made for Windows, the game is created using Unity, and character model is created and animated using Blender.

Screenshots (see [Appendix](#)):

Appendix 1: (Personal Project)

1. Cashier Application

(Go back)

Cashier main interface, creating invoice for customer

Features: Different tabs for different customer, adding item by item name or number; change unit of measurement of the same item (gram to kilogram, etc.), automatic discount; remove item from invoice

1

Nama Barang :

Jasjus Anggur rtg

Tambah

Nama Pembeli:

No Barang :

Tambah

Tambah Langsung:

Tambah

No.	No B	Barang	Satuan	Jumlah	Harga Satuan	Potongan	Harga Total	Hapus
1	89923	Dji Sam Soe 16 bks	bks	1	2.500	0	2.500	<div></div>
2	89999	Dji Sam Soe 16 slp	bks	1	17.000	0	17.000	<div></div>
3	88860	DjiSamSoe 12 krt	dos	1	119.000	0	119.000	<div></div>

Dji Super 16 1/2 krt

Djarum Black slp

Dji Sam Soe 16 bal

Dji Sam Soe 16 bks

Dji Sam Soe 16 krt

Dji Sam Soe 16 slp

DjiSamSoe 12 krt

DjiSamSoe 12 slp

DjiSamSoe 12 bal

DjiSamSoe 12 bks

DjiSamSoe Prm bal

DjiSamSoe Prm bks

DjiSamSoe Prm krt

DjiSamSoe Prm slp

Energen Kacang ljo krt

Energen Kacang ljo rtg

Extrajos pak

Extrajos dos

Extrajos krt

Gery Keju bks

Gery Keju krt

GG Mild Hijau bal

GG Mild Hijau bks

GG Mild Hijau slp

Jasjus Anggur rtg

Jasjus Anggur pak

Jasjus Anggur krt

Jasjus Jeruk pak

Jasjus Jeruk krt

Jasjus Jeruk rtg

Jasjus Mangga krt

Jasjus Mangga rtg

Jasjus Mangga pak

Jipang pak

Kartu Joker dos

Kartu Joker bks

Kopi Jahe krt

Kopi Jahe rtg

LA Hijau slp

LA Hijau bal

Total Harga: Rp 138.500

Keluar

Bayar

Payment Interface

Features: insert cash amount, print invoice on big printer or small printer)

1

2345

Nama Barang :

Tambah

Nama Pembeli: John

No Barang :

Tambah

Tambah Langsung:

Tambah

No.	No Barang	Nama Barang	Satuan	Jumlah	Harga Satuan	Potongan	Harga Total	Hapus
1	8997033730030	Miki BayarForm					11.000	<div></div>
2	8996001355008	Ben					29.000	<div></div>
3	8999909000650	San					22.000	<div></div>

Harga Total: Rp 62.000

Pembayaran: Rp

62000

Harga pas

Rp 62.000

Nama Pembeli: John

Batal

Bayar

Pembayaran selesai

Harga Total : Rp 62.000

Pembayaran : Rp 62.000

Kembalian : Rp 0

Print Struk Kecil

Print Struk Besar

Tutup

Total Harga: Rp 62.000

Keluar

Hapus Semua

Bayar

Database interface, tables of item and their information

Features: list of items, search item by name or premade collection of items)

Tabel Koleksi

Tabel Barang

Cari Koleksi

Cari

Tambah Koleksi

Tampilkan Semua

Nama Koleksi	0 Beli	TipeSatuan	0 Jual	Jumlah Barang	Pilih	Hapus
76 Gold	2	Default	0 2		<div>+</div>	<div></div>
76 Kretek	3	Default	0 3		<div>+</div>	<div></div>
ABC Moka	1	Default	0 2		<div>+</div>	<div></div>
Ajinomoto 100gr	3	Default	0 3		<div>+</div>	<div></div>
Ajinomoto 250gr	3	Default	0 3		<div>+</div>	<div></div>
Ajinomoto 50gr	3	Default	0 3		<div>+</div>	<div></div>
Ajinomoto Rp1000	3	Default	3 3		<div>+</div>	<div></div>
Ajinomoto Rp500 (10gr)	3	Default	2 3		<div>+</div>	<div></div>
Alkaline AA	2	Default	0 2		<div>+</div>	<div></div>
Alkaline AAA	2	Default	1 2		<div>+</div>	<div></div>
Alpenliebe	0	Default	0 0		<div>+</div>	<div></div>
Alteco	2	Default	0 2		<div>+</div>	<div></div>
Amplop Besar	0	Default	0 0		<div>+</div>	<div></div>
Amplop Kecil	0	Default	0 0		<div>+</div>	<div></div>
Anggur Kupu	2	Default	0 2		<div>+</div>	<div></div>
Apache 16	2	Default	0 3		<div>+</div>	<div></div>
Aqua 1500ml	2	Default	0 2		<div>+</div>	<div></div>
Aqua 330ml	2	Default	0 2		<div>+</div>	<div></div>
Aqua 600ml	2	Default	0 2		<div>+</div>	<div></div>
Aqua Gelas	2	Default	0 2		<div>+</div>	<div></div>
Arinda	1	Default	0 1		<div>+</div>	<div></div>
Autan saset	3	Default	0 3		<div>+</div>	<div></div>
Avolution Mentol	3	Default	0 4		<div>+</div>	<div></div>

Kembali

Edit collection interface

Features: add premade collection *each collection consists of an item with different unit of measurement and their own price*, add/remove/edit item in collection, automatic discount *buy 10 item, discount 10%*)

The screenshot shows the 'Formis Koleksi' application. The main window has a title bar 'FormisKoleksi'. Below the title bar, there's a text field 'Nama Koleksi : 76 Kretek' and a button 'Ganti Nama Koleksi'. To the right is a button 'Tambah Barang'. Below this is a table with columns: No Barang, Nama Barang, Harga Beli, Harga Jual, Tipe Satuan, Satuan, Ubah, and Hapus. The table contains three rows of data. Below the table is a large empty area. At the bottom left is a button 'Kembali'. To the right of the main window is a smaller window titled 'Tabel Barang' with columns: Satuan, 0 Jual, Jumlah Barang, Pilih, and Hapus. It contains three rows of data. In the foreground, a 'FormBarang' dialog box is open, titled 'Tambah Barang'. It has fields for 'No Barang' (12345), 'Nama Barang' (Candy), 'Tipe Satuan' (Default), 'Satuan' (kg (kg)), 'Harga Beli' (5000), and 'Harga Jual' (2000). There is a button 'Atur Harga Jual' with a '+' icon. Below these fields is a table with columns: Jumlah, Harga Jual, Tipe Potongan, and Hapus. At the bottom of the dialog are buttons 'Keluar' and 'Selesai'.

No Barang	Nama Barang	Harga Beli	Harga Jual	Tipe Satuan	Satuan	Ubah	Hapus
8991906101668	76 Kretek	0	13000	Default	bks	+	✖
8991906151663	76 Kretek	0	120000	Default	slp	+	✖
76kretekbak	76 Kretek	0	2375000	Default	bal	+	✖

Satuan	0 Jual	Jumlah Barang	Pilih	Hapus
ult	0	2	+	✖
ult	0	3	+	✖
ult	0	2	+	✖

Jumlah	Harga Jual	Tipe Potongan	Hapus
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Setting Interface

Features: Edit the invoice layout, shop name/number/address, add more unit of measurement)

The screenshot shows two settings windows. The 'Pengaturan Printer' window has fields for 'Nama Toko' (TOKO AGUNG JAYA), 'No Telepon' (08125286171), and 'Alamat Toko' (KM 8 LAMPU MERAH, SORONG). It also has a checkbox for 'Huruf Kapital'. Below these are sections for 'Aturan Printer Besar' and 'Aturan Printer Kecil', each with fields for 'Font Nama Toko', 'Font No Telp dan Alamat', 'Font Barang', 'Margin Atas', and 'Margin Kiri'. At the bottom are buttons 'Coba Printer Kecil', 'Lihat Hasil Printer Besar', 'Kembalikan', and 'Simpan'. The 'Pengaturan Satuan' window has a section 'Daftar Tipe Satuan' with a dropdown for 'Tipe Satuan Terpilih' (Default) and a text field for 'Nama Tipe Satuan'. To the right is a section 'Daftar Satuan' with a list of units: 1/2 kanton (1/2 krt), 1/2kg (1/2kg), bal (bal), botol (btl), buah (bh), bungkus (bks), dos (dos), gelas (gl), gen (gen), ikat (ikt), kaleng (kg), kanton (krt), kg (kg), lusin (lsn), pak (pak), papan (ppn), pasang (psg), ram (ram), renteng (rtg), and roll (roll). There are '+' and '-' buttons next to the list.

Pengaturan Printer

Nama Toko: TOKO AGUNG JAYA
No Telepon: 08125286171
Alamat Toko: KM 8 LAMPU MERAH, SORONG
☐ Huruf Kapital

Aturan Printer Besar

Font Nama Toko: 12
Font No Telp dan Alamat: 10
Font Barang: 10
Margin Atas: 30
Margin Kiri: 130

Aturan Printer Kecil

Font Nama Toko: 12
Font No Telp dan Alamat: 8
Font Barang: 8
Margin Atas: 0
Margin Kiri: -50

Coba Printer Kecil Lihat Hasil Printer Besar
Kembalikan Simpan

Pengaturan Satuan

Daftar Tipe Satuan
Tipe Satuan Terpilih: Default
Nama Tipe Satuan:

Daftar Satuan

Lengkap:
Singkat:

Default +
1/2 kanton (1/2 krt)
1/2kg (1/2kg)
bal (bal)
botol (btl)
buah (bh)
bungkus (bks)
dos (dos)
gelas (gl)
gen (gen)
ikat (ikt)
kaleng (kg)
kanton (krt)
kg (kg)
lusin (lsn)
pak (pak)
papan (ppn)
pasang (psg)
ram (ram)
renteng (rtg)
roll (roll)

Keluar

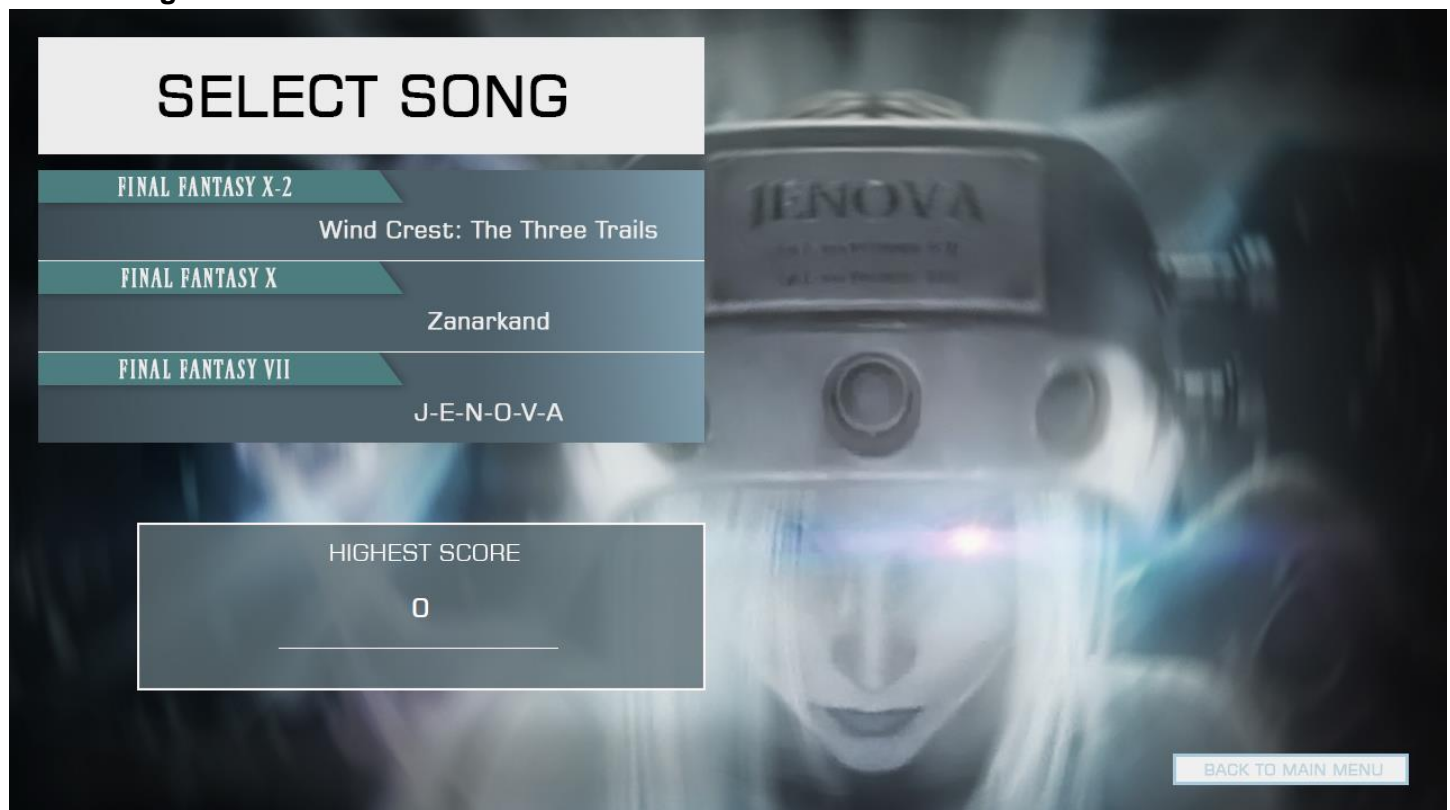
2. Rhythm Game – Le Dawn

[\(Go back\)](#)

Home Interface



Select Song Interface



Gameplay Interface



Result Screen Interface



Keys Configuration

<F>

<G>

<H>

<J>

KEY 1

KEY 2

KEY 3

KEY 4


PAUSE KEY : <F9>

SET TO DEFAULT

EXIT

Music Player Interface

FINAL FANTASY X-2
PIANO COLLECTION



Music and Produced by
Noriko Matsueda
&
Takahito Eguchi

⏮

⏸

⏭

EXIT

Keys Configuration

<F>

<G>

<H>

<J>

KEY 1

KEY 2

KEY 3

KEY 4

PAUSE KEY : <F9>

SET TO DEFAULT

EXIT

Create Your Own Rhythm Song

Menu

F

1: - 5.086 -
2: - 5.333 -
3: - 8.823 -
4: - 13.141 -
5: - 13.533 -
6: - 13.925 -
7: - 14.325 -
8: - 14.909 -
9: - 15.285 -
10: - 15.681 -
11: - 15.853 -
12: - 16.413 -
13: - 16.822 -
14: - 18.358 -
15: - 18.541 -
16: - 18.725 -
17: - 18.901 -
18: - 20.623 -

Row 1 Del
Timing 0 Add

G

1: - 6.125 -
2: - 6.422 -
3: - 9.525 -
4: - 10.069 -
5: - 10.469 -
6: - 10.629 -
7: - 11.229 -
8: - 11.629 -
9: - 12.021 -
10: - 12.973 -
11: - 12.757 -
12: - 17.245 -
13: - 17.469 -
14: - 17.622 -
15: - 19.413 -
16: - 19.773 -
17: - 20.166 -

Row 1 Del
Timing 0 Add

H

1: - 7.093 -
2: - 7.381 -
3: - 9.149 -
4: - 11.461 -
5: - 11.829 -
6: - 12.189 -
7: - 12.549 -
8: - 12.967 -
9: - 13.341 -
10: - 13.733 -
11: - 14.133 -
12: - 19.117 -
13: - 19.293 -
14: - 19.471 -
15: - 19.653 -
16: - 19.846 -
17: - 20.029 -
18: - 20.221 -

Row 1 Del
Timing 0 Add

J

1: - 7.933 -
2: - 8.429 -
3: - 9.861 -
4: - 10.285 -
5: - 10.653 -
6: - 11.037 -
7: - 14.525 -
8: - 14.701 -
9: - 15.069 -
10: - 16.053 -
11: - 16.605 -
12: - 17.022 -
13: - 17.781 -
14: - 17.987 -
15: - 18.165 -
16: - 20.413 -
17: - 20.623 -

Row 1 Del
Timing 0 Add

Marks

1 Del EDIT MARK
0

Comment

00:00:26.4625880 END TIME 60 s SET

▶

■

↺

CLEAR

SEE RESULT

EXIT

WELCOME
In this page you can create your own rhythm game. You can start by opening the Menu button at the left top corner.
While the song is playing, you can input and edit the notes yourself!

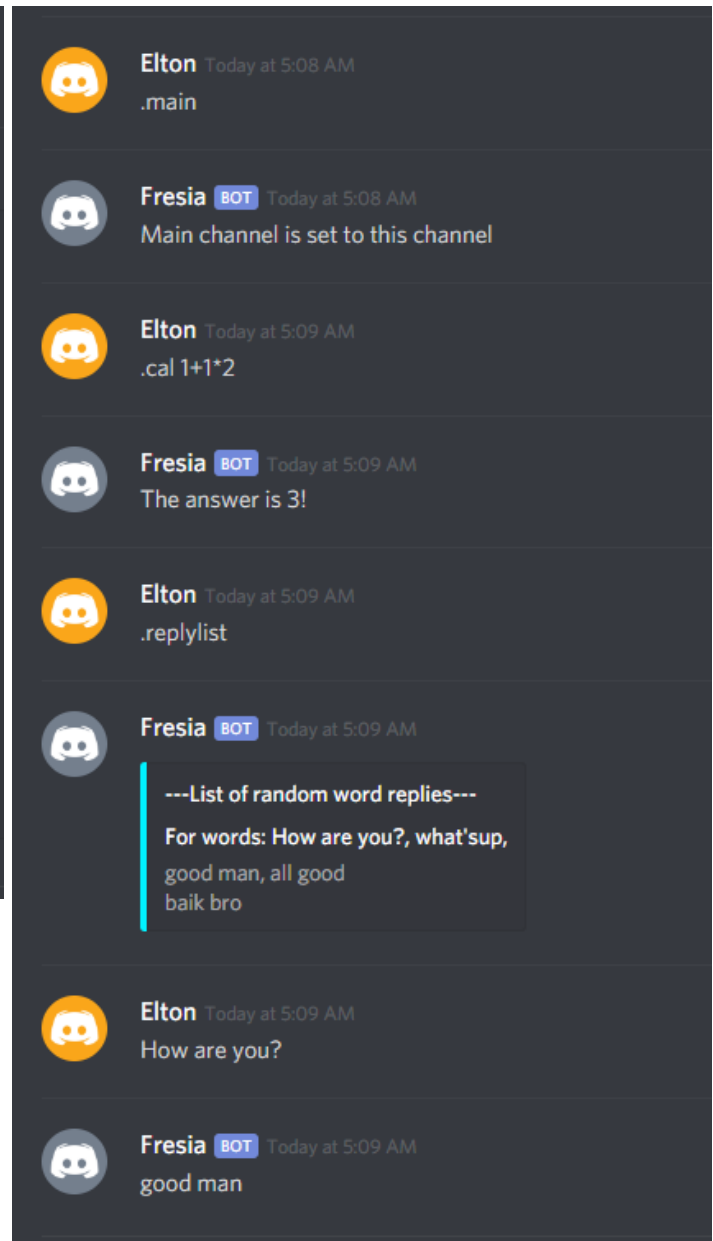
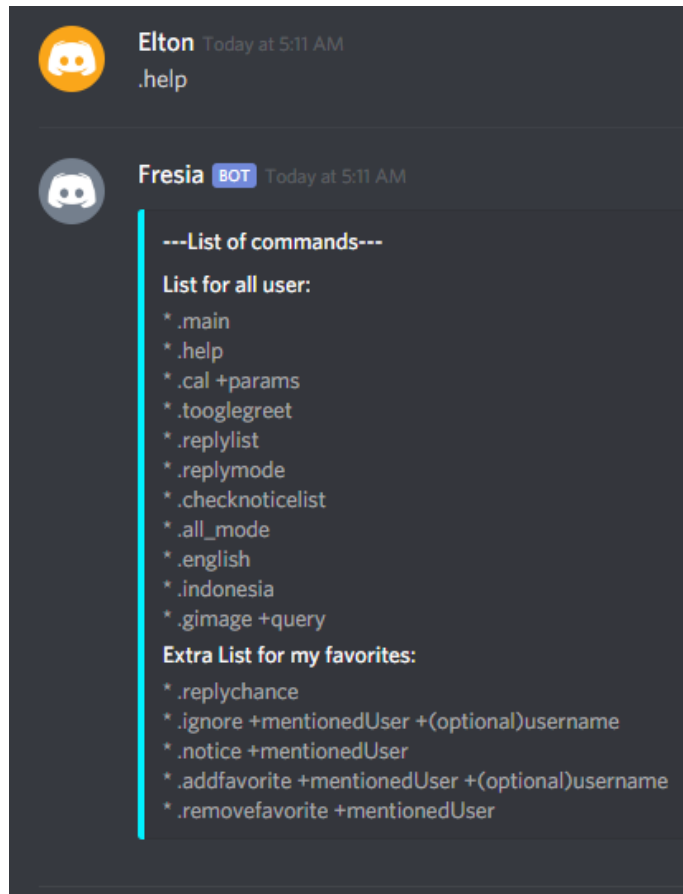
【Akie秋絵】Lemon_Piano_Ver_.mp3

SUBMIT EDITED

3. Simple Made-for-fun Discord BOT

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Features:



.replychance 50



Fresia BOT Today at 5:12 AM
Reply chance updated to 50% !



Elton Today at 5:12 AM
How are you?



Fresia BOT Today at 5:12 AM
good man



Elton Today at 5:12 AM
How are you?
(50% chance of reply)
.addfavorite @Elton



Fresia BOT Today at 5:12 AM
@Elton is already my favorite!



Elton Today at 5:12 AM
.removefavorite @Elton



Fresia BOT Today at 5:12 AM
Fresia will not recognize @Elton as my favorite anymore!



Elton Today at 5:13 AM
.gimage world map



Fresia BOT Today at 5:13 AM

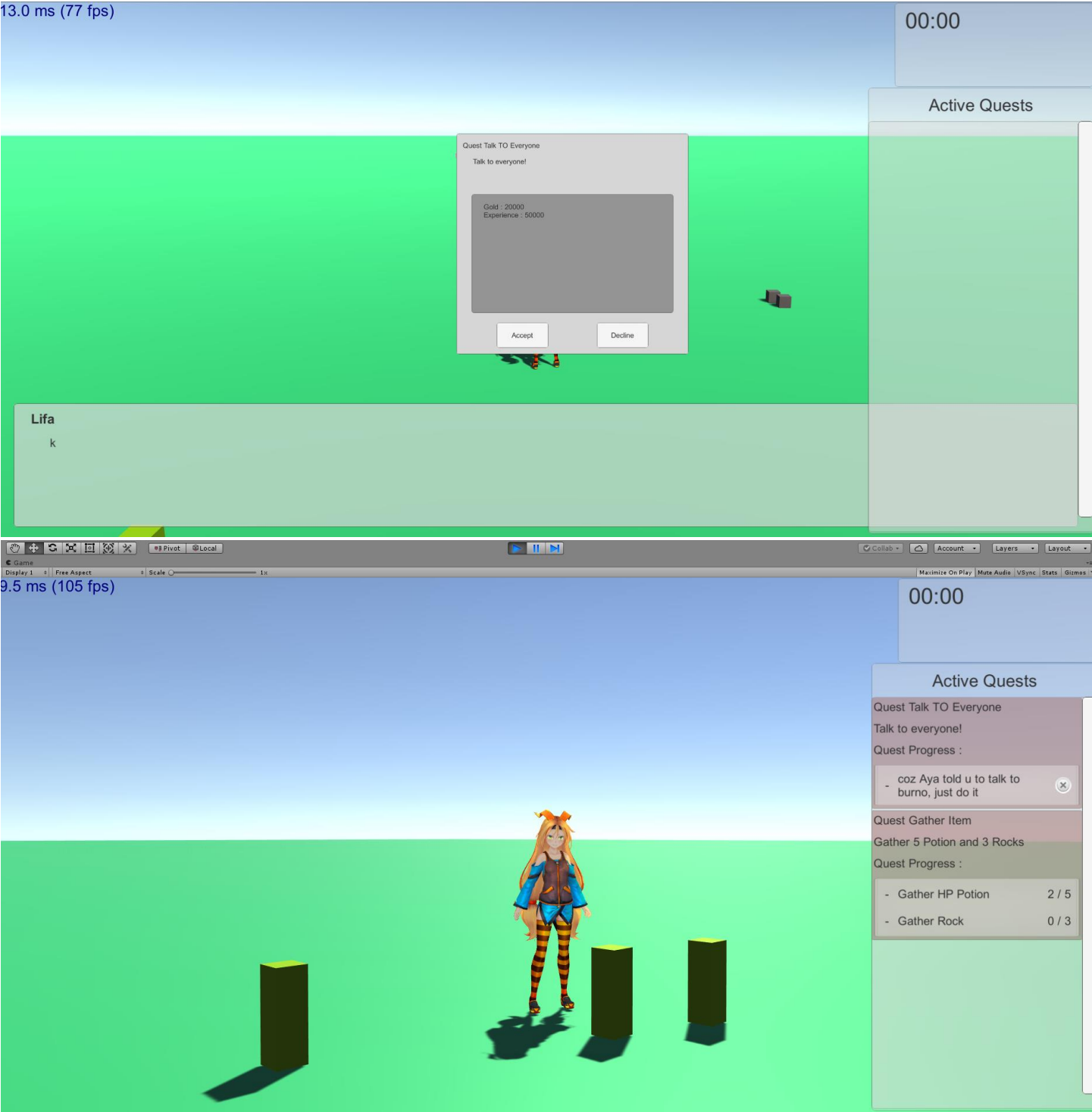
Fresia hopes this is what you want!



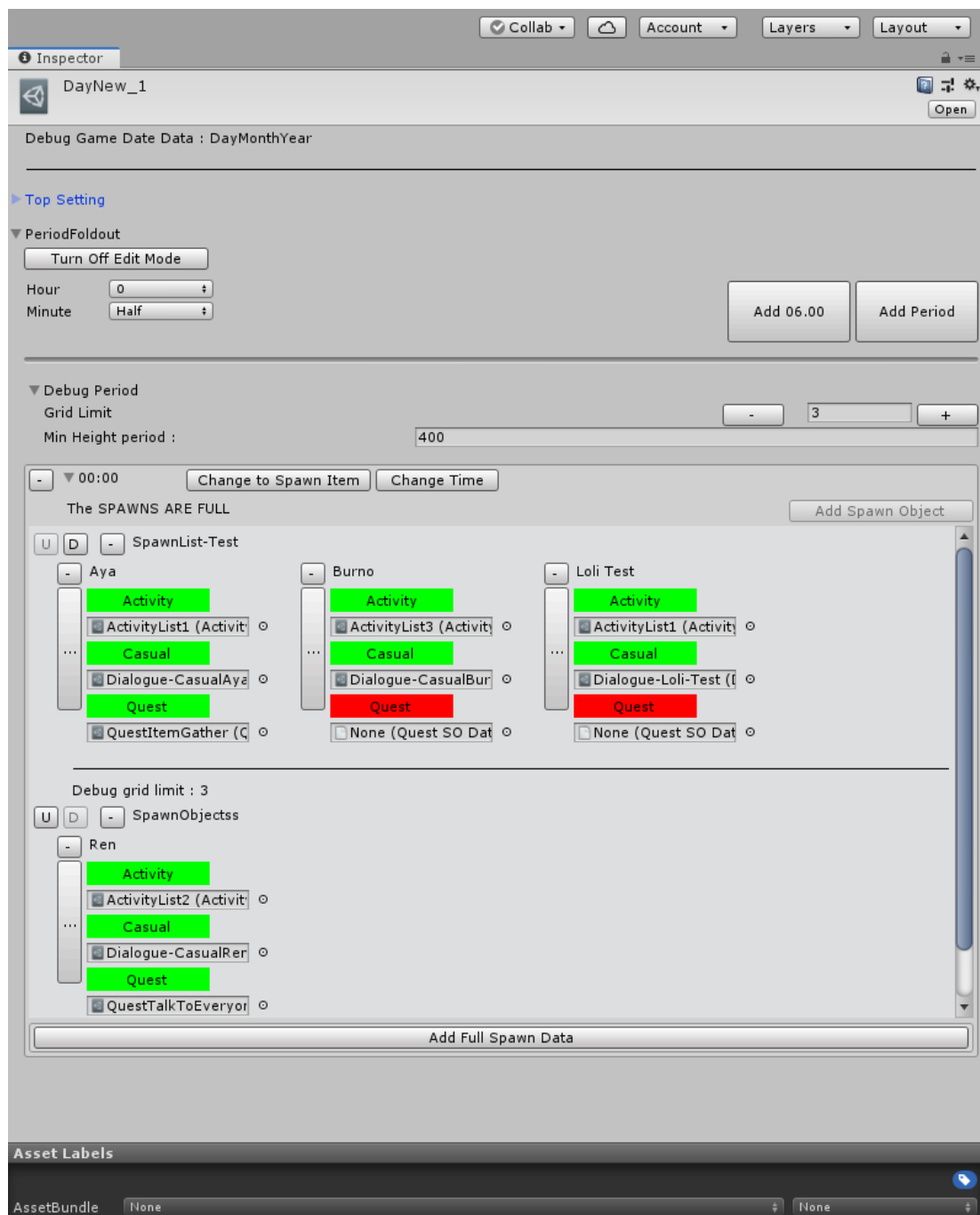
4. 3D Game Application (Unity Engine)

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Game Screen (quest acceptance and quest update)



Custom Inspector for designing npc activities and dialogue (activities and dialogues are made using scriptable objects)



Inspector

Dialogue-TalkToBurno

Open

ID

A1

Name

ObjectX

Description

I am an object

▼ First Part

▼ Characters

Character 1

BurnoData (CharacterSOData)

U D -

Character 2

RielData (CharacterSOData)

U D -

Character 3

LifaData (CharacterSOData)

U D -

Add Character

Add Anonymous Character

Add Empty Character

▼ Background Music Setting

Add Background Music

▼ Object Setting

Add Object

▼ Dialogue Routes

-- Casual Dialogue --

Turn Off Edit Mode

:

Change To Quest Dialogue

Default

Current Route Name

Default

-

Burno

Left

hey

None

Audio Voice

+

0

Image

None

-

hey

Right

Riel

None

Audio Voice

+

1

Image

None

-

Burno

Left

now go back and talk to aya

None

Audio Voice

+

2

Image

None

-

k

Right

Lifa

None

Audio Voice

+

3

Image

None

Add Dialog Line

Add Route

Delete Current Route

Asset Labels

AssetBundle

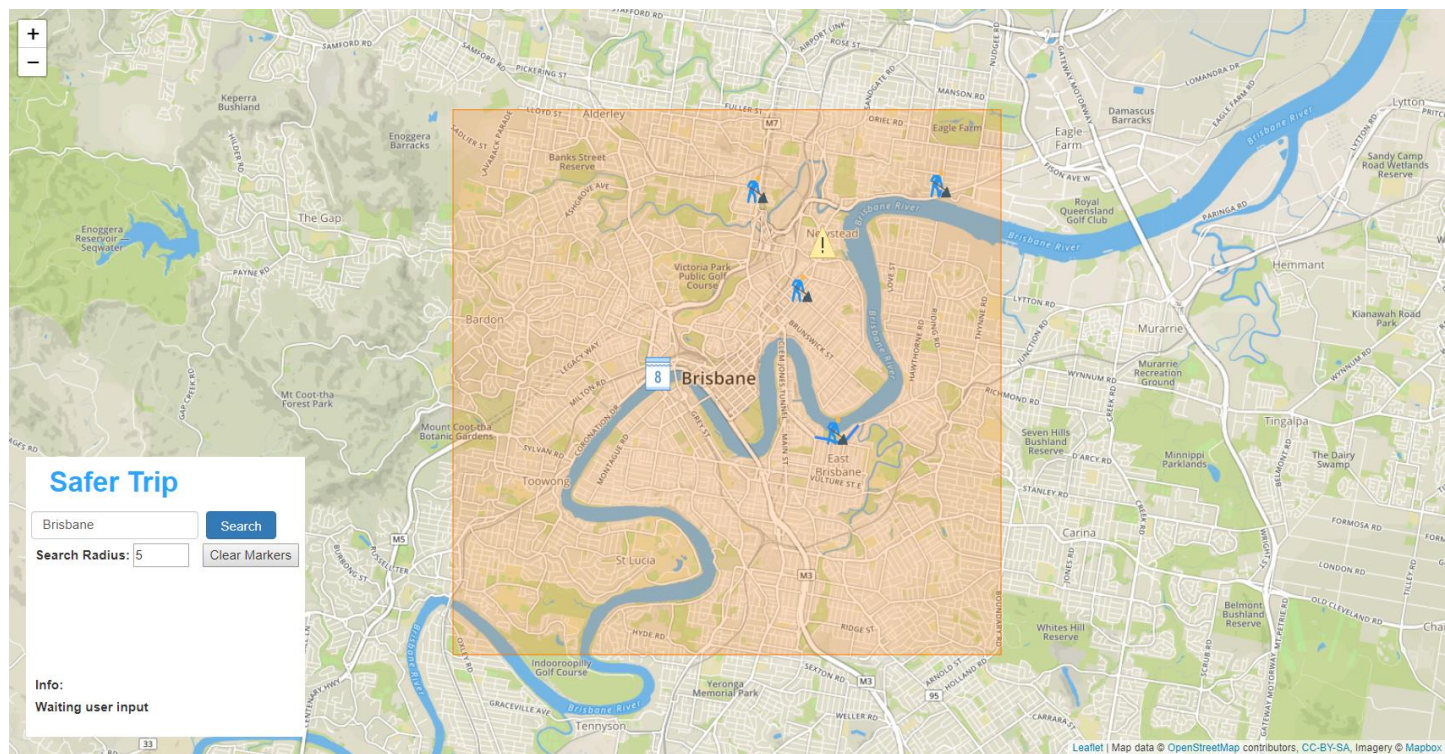
None

None

5. Safer Trip

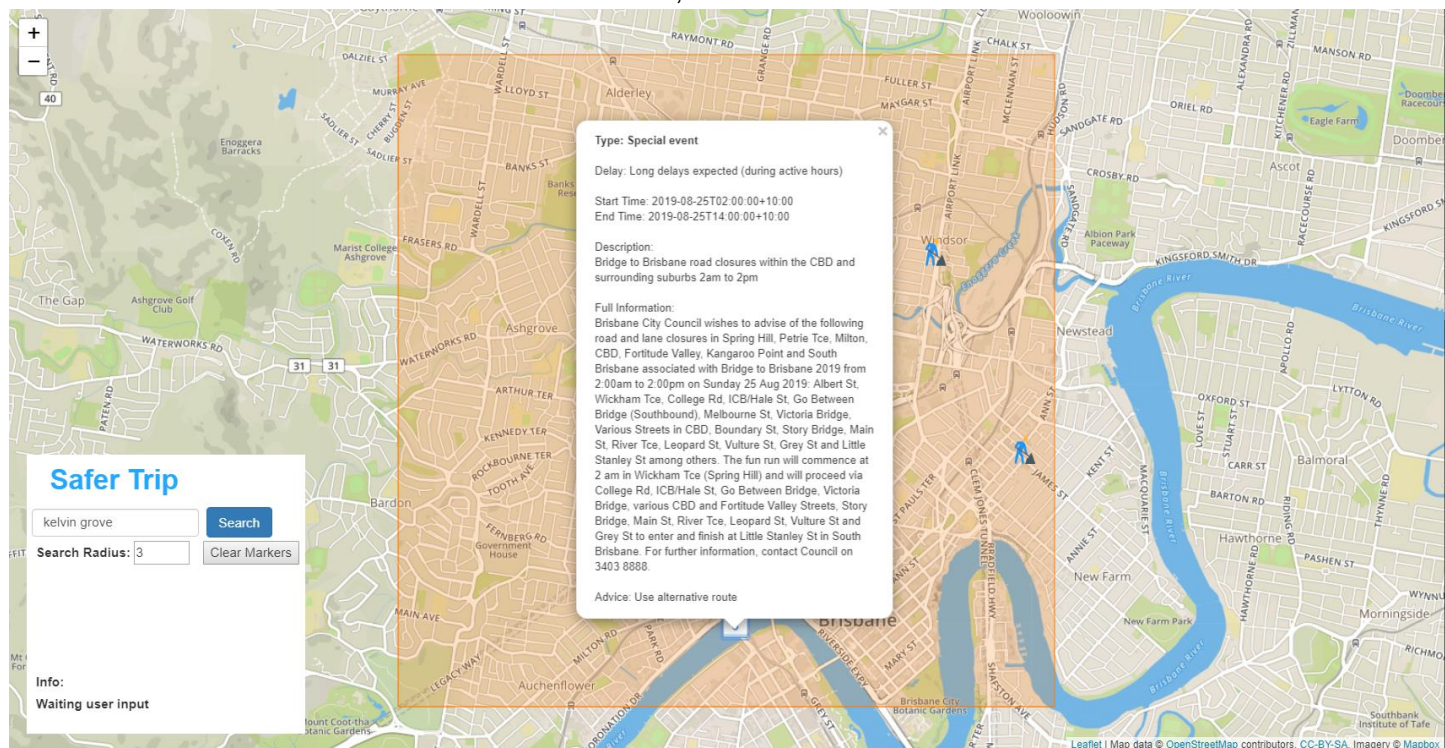
[\(Go Back\)](#)

Home Interface



Search Kelvin Grove Interface + Click on icon

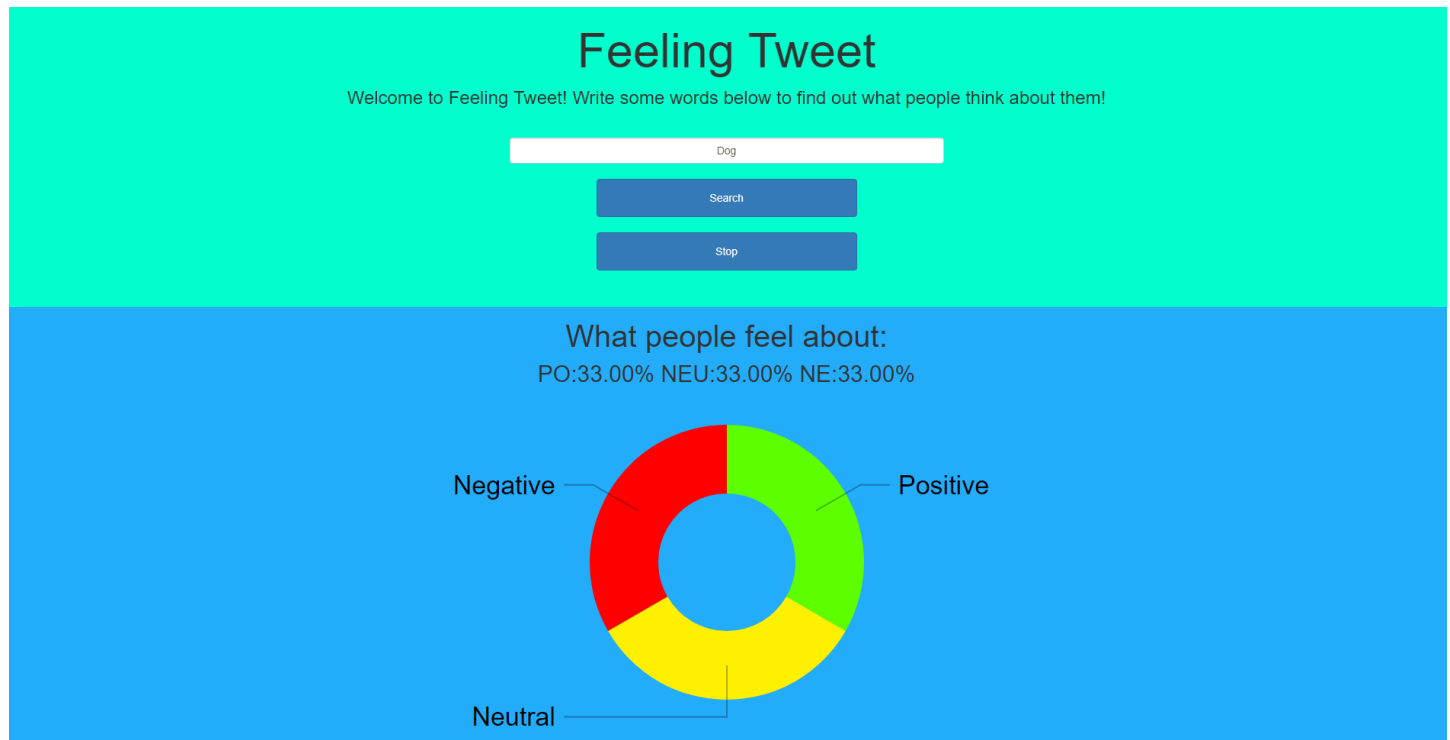
Features: Show information of the selected location, show information of selected icon



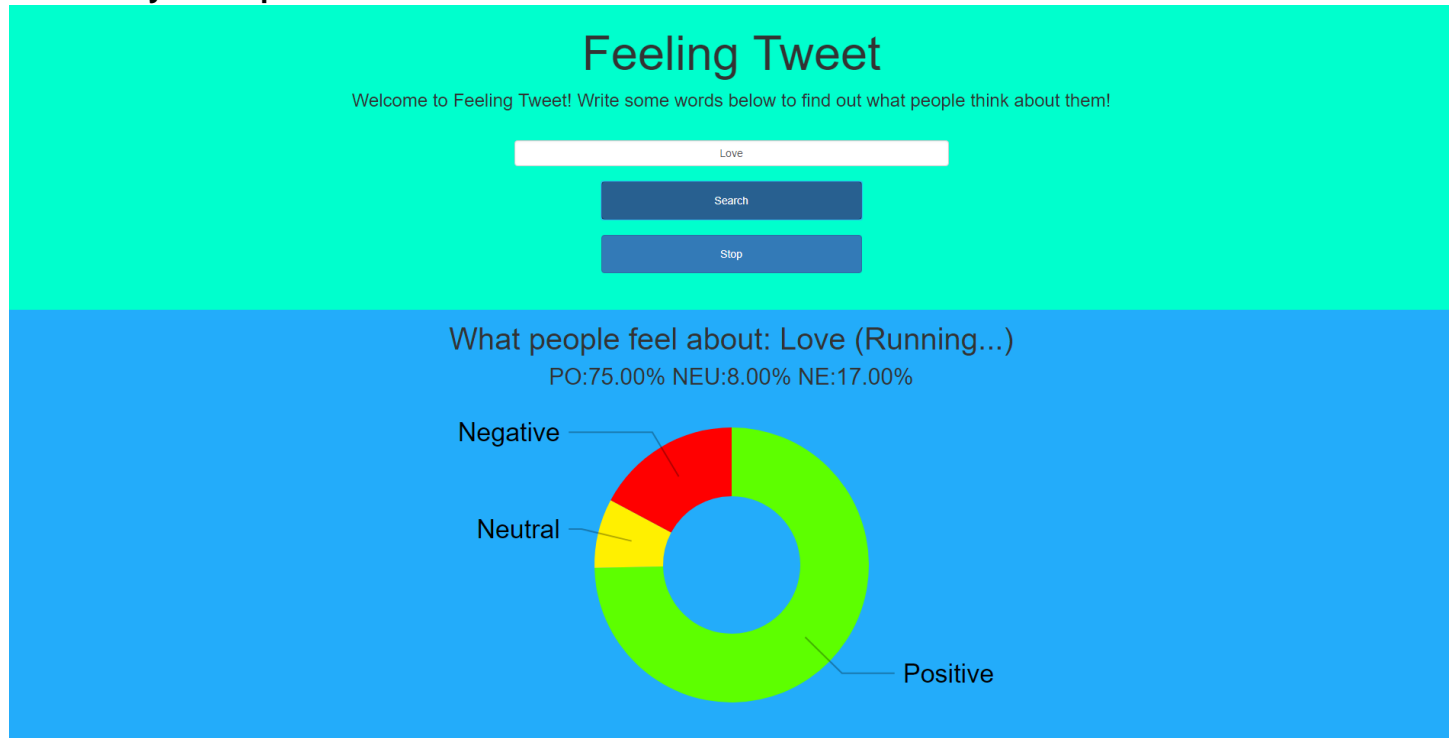
6. Feeling Tweet

[\(Go Back\)](#)

Home Interface



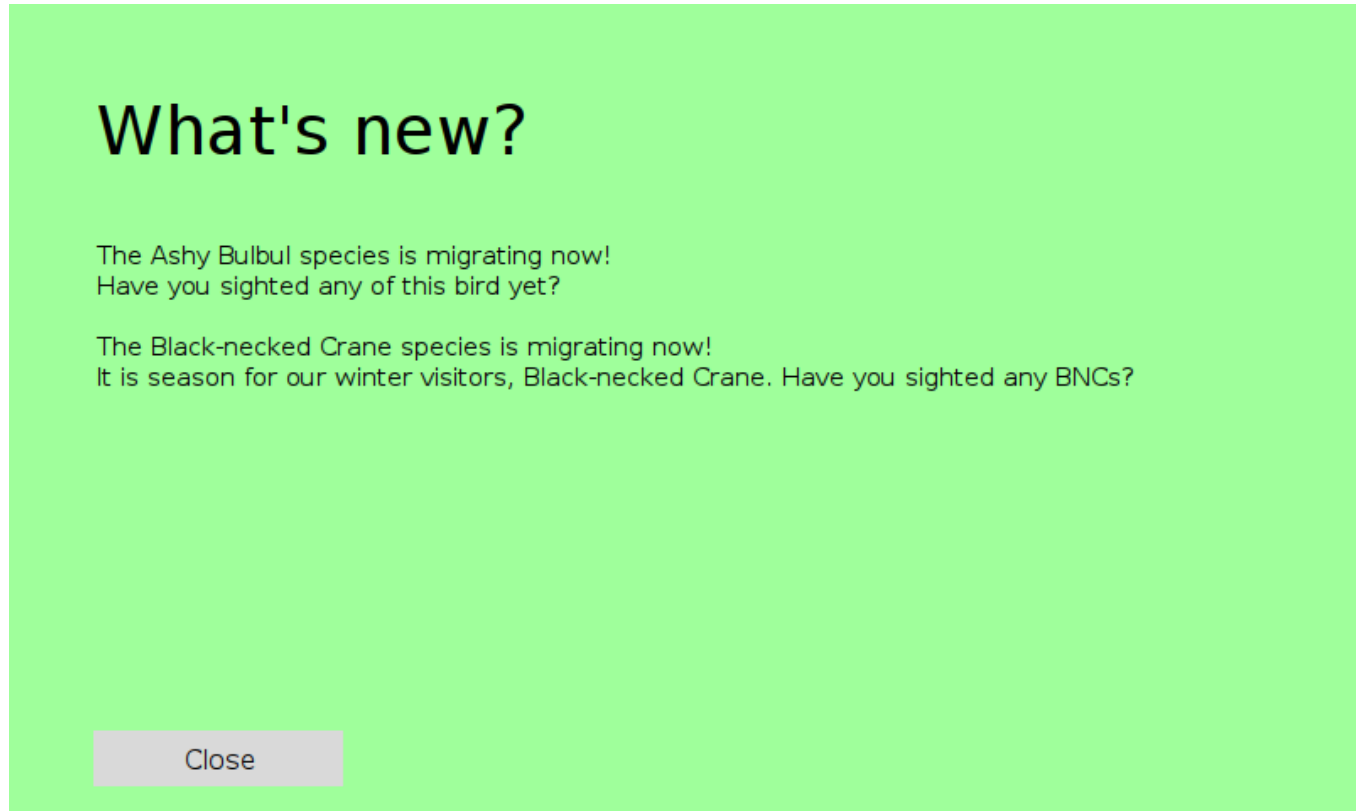
Search keyword update



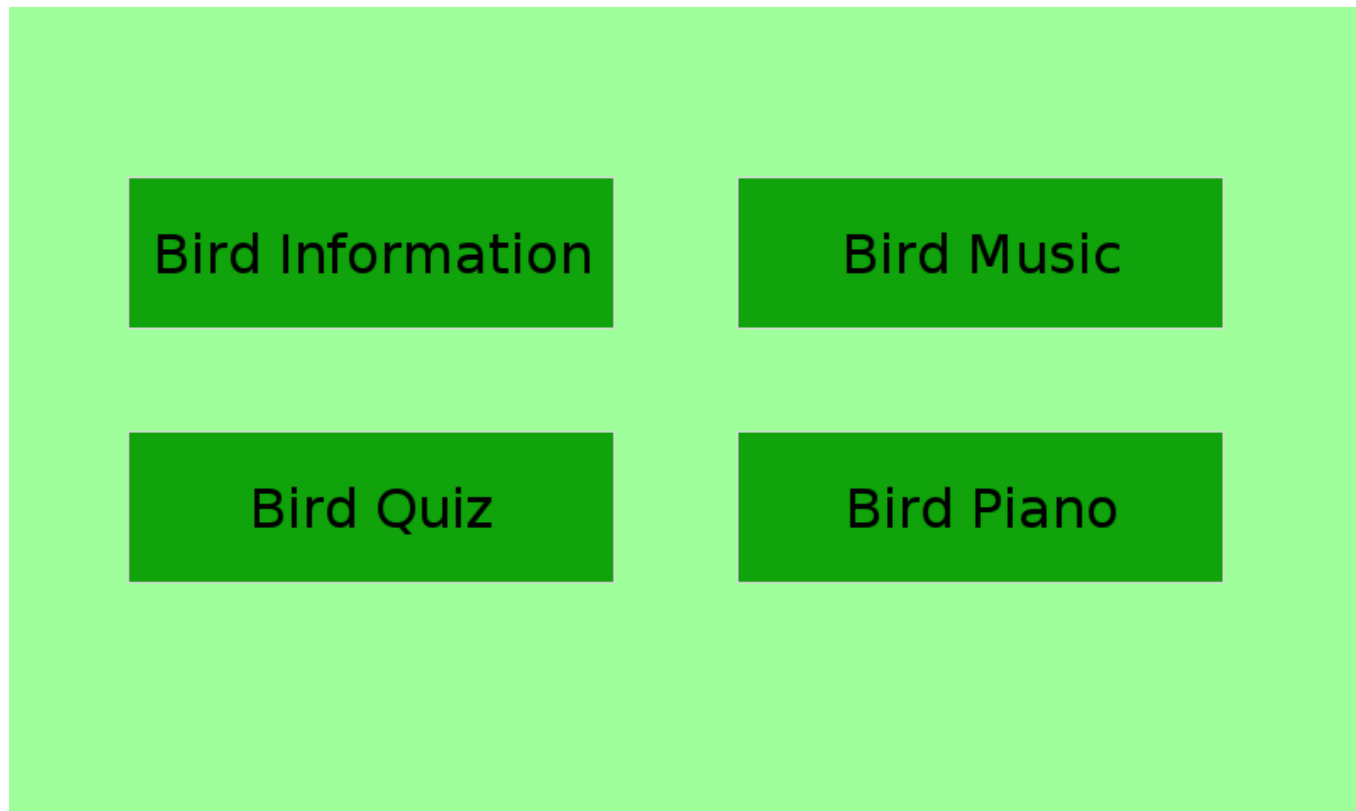
7. Bird Convervation Project

([Go Back](#)) *All pictures are taken from raspberry pi device, interact with touchscreen*

Home Interface



Main Menu Interface



Bird Info Interface

[Back](#)

Bird Information



Migration: around September to October
Migration Area: Bumdelling
Breed Start: January
Breed End: February
Bird Status: NE (NOT EVALUATED)



2 : Black-necked Crane

Description: Reach maturity at two to three years, and known to live up to 30 yers in the wild
Popularion: 8800 - 11000
Migration: around October to February
Migration Area: Bumthang, Phobjikha, Bumdelling
Breed Start: October
Breed End: February
Bird Status: VU (VULNERABLE)



3 : Blyth's Tragopan


Description: Brown in color, less aggressive and eat fruits
Popularion: 30000 - 40000
Migration: around May to June
Migration Area: Phobjikha
Breed Start: September

Bird Music Player Interface

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Eurasian_Cuckoo

2 people [Like](#) this sound!



10

11

Previous

Pause

Stop

Next

Bird Quiz Interface

Back

2. Which bird is this?

Eurasian Cuckoo

Black-necked Crane

Ashy Bulbul

Blyth's Tragopan



Next Question

Bird Piano Interface

Back

Bird Piano



8. Creating AI in game application with Imitation Learning

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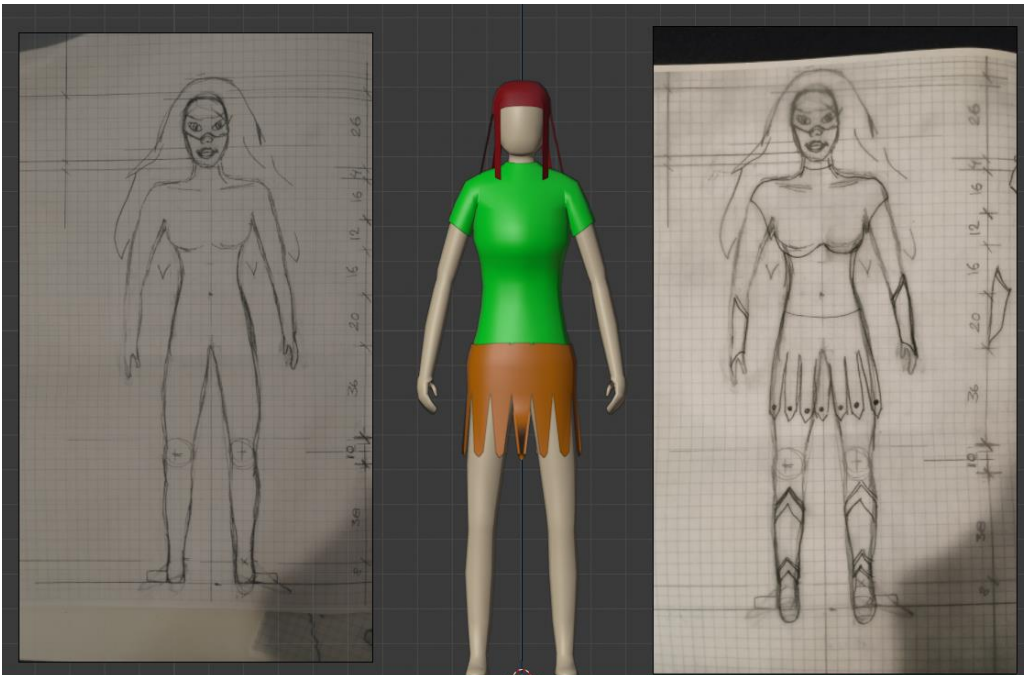
Training video: <https://youtu.be/dWosoKp6ll4>

Result video: <https://youtu.be/G9E32ZS2xJg>

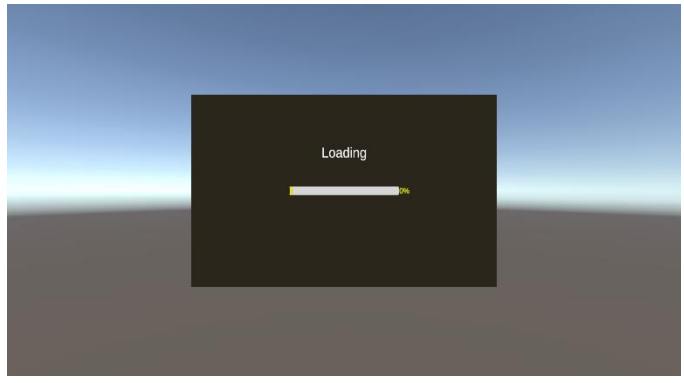
AI trained by human player using Imitation Training (AI above, human bottom)



3D model custom-made for the game character



Simple User Interface



Simple game level including a small river that the AI needs to jump over



Applying post-processing effects to the camera to increase visual quality

Before (original, without any effect):



After:

