

ushort is basically an int but can only be a positive number  
Also needed a USB 3

Problem no: 1

unable to use Xbox 360 Kinect v1.0 because drivers are old and not compatible with Windows 10 so I've had to buy the Xbox One Kinect V.2.0 so I can use it on Windows 10. Also learnt cool thing ~~but~~ to do with Kinect audio recording and mouse steering to make a 2D game.

RE  
texture 2D / 3D

ushort is unsigned

Short can be any value from -32768 to 32767

ushort can be from 0 to 65535

waiting on new Kinect to come in  
but I've already started on code for  
its learning and understand the basic  
of Kinect.

next is to understand unity and  
get basic character.

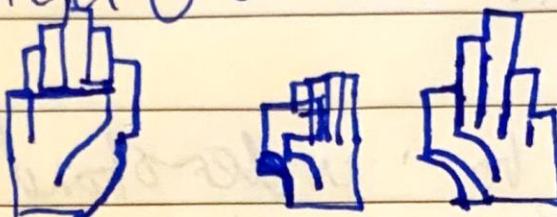
there is 7 streams of data coming  
out of from the Kinect:

- Body Frame
- Body Index
- Calibration Data
- Depth
- IR
- Title Audio
- Uncompressed color

gesture interaction design

## Download

- kinect SDK browser using C# and .NET
- kinect studio
- kinect Gesture .NET framework



open      closed      lasso  
Hand      Hand      Hand

two types of gestures that the Kinect offers  
continuous gesture  
or discrete gesture

continuous gestures - pulls up Full Hand motion

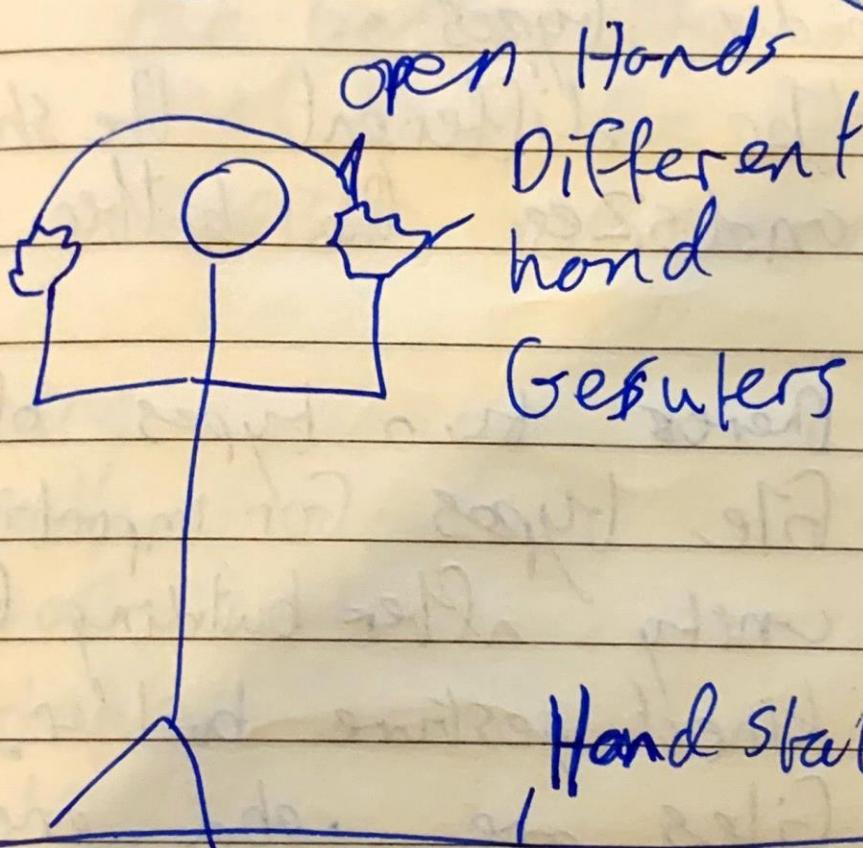
discrete gesture - easier to manipulate  
- boolean ivalue

File  
• a used to feed different recording  
then the gesture builder will  
run multiple recording and see which

action if can use and see compare for best values  
never 100% - unless something is wrong  
next problem is Putting Selection

one problem will be if to close  
to the Kinect it won't work

understand how Kinect moves



green circle means of  
Open Hands =

Closed Hand = red circle

2 finger gesture is known  
as the tasso gesture

with gesture one down ~~side~~  
Side to me using it alone  
it only works for my  
body type so I wanted more  
people to be able to play it  
I would need to record different  
body types

The different the shapes  
and sizes the better

There's two types of  
file types for importing into  
unity after building from ~~the~~  
kinect gesture builder. The two  
files are .gbd and gba

gbd = gesture builder database

gba =

Then you use the data from  
the build

Step one - Verify that Kinect is working with no warnings  
usb working to be ignored

Step two - get leaning Gesture  
using Kinect gestures  
the more people use  
the better the gesture  
and how be kinect  
register movement

for leaning gesture

nui body frame

Bui body Index

nui depth

nui IR

nui sensor telemetery

nui tilt index

nui compressed color

## Rigid body

- mass - the mass of the object
- drag - air resistance that affects object
- angular drag / / / that affects object from
- use gravity - is it affected by gravity
- is kinematic leave off use for body man
- Interpolate - only use if seeing jerkiness
- collision detection
  - constraints - freeze position
  - a
  - freeze rotation

→ used to prevent fast moving object from passing through objects without detecting collisions

SDK browers

import gesture builder is used to populate  
bounce an onzing area and festing area  
where you input your clips from  
Kinect Studio

so you record everything from  
Kinect Studio and then you fine tune  
what the Kinect is going to be  
triggering in your game ie what  
movement you want it to recognize

Rigidbodies is attached with unity  
that enables your game object  
to act under the control of  
Physics

The Rigidbody can receive forces  
and torque to make your object  
move in a realistic way

is trigger  
material  
center  
size

- enabled for  
triggering events

- x·y·z directions

## MONOCHROME SENSORS

Monochrome sensors capture all incoming light at each pixel regardless of colour. Each pixel therefore receives up to 3x more light since red, green and blue are all absorbed color photons.

Infrared projector including a light source which radiates an infrared ray and an emitter which emits visible light when exposed to infrared light

colliders are another kind of components  
that must be added along side  
the rigidbody in order to allow  
collisions to occur.

If two ~~bodies~~ bodies run into each  
other the Physics engine will not  
calculate a collision unless both  
objects ~~they~~ also have a collider  
attached

using a box collider

vector3 (float x, y, z).  
or

(float x, y,

using - The using statement defines  
a boundary for the object  
outside of which, the object  
is automatically ~~destroyed~~  
destroyed.

basically means you can use

class or methods variable

Lambda expression  $\Rightarrow$

" $\Rightarrow$ " is a Lambda expression  $\Rightarrow$

the  $\boxed{\Rightarrow}$  Operator is called the "Lambda operator".

multiplyByFive =

~~example~~ num  $\Rightarrow$  num  $\times$  5

Input Parameter

so if multiplyByFive is called

multiplyByFive(7);

$7 \times 5$  or 35;

Input Parameter

GestureDetector

GestureDetector Method - created  
in another Package.

~~what if~~ it does & looks for something  
needs a sensor to link it

event Handler <TEventArgs>

Represents the method that  
will handle an event when the event  
provides data

Parameters

sender object

The source of event -

e

An object that contains the event data  
Inheritance object → Delegable → event Handler

I Disposable is an interface that contains a single method Dispose(); for releasing unmanaged resources like files, streams, database connections and so on.

MonoBehaviour is the base class from which every Unity script derives

- Start, Start()
- Update(),
- FixedUpdate(),
- LateUpdate(),
- OnGUI
- OnDisable
- OnEnable(),

Features	Kinect v1	Kinect v2
Color video camera	640 x 480 30fps	1920x1080 30fps
Depth camera	320x240 30fps	512x424 30fps
Max Depth Distance	~16.75 ft	~14.75 ft
Min Depth Distance	18.75 inches	19.68 inches
Horiz on int field of view	57 degrees	70 degrees
Vert field of view	43 degrees	60 degrees
Skeletal tracking	20	26
Golf skeletons tracked	2	70
USB Standard	2.0	3.0
Support led	win7,8	windows 8
Overall	Kinect v2 is better	

transform is used for x,y,z coordinate  
basically moves it frame by frame.

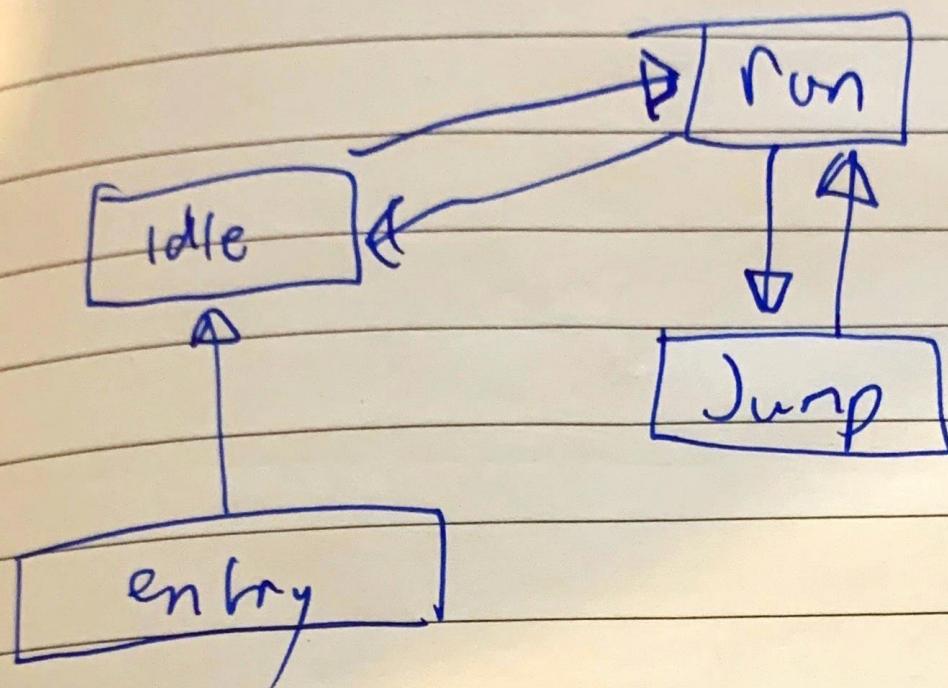
enumeration -

An enumeration is a complete, ordered listing of the elements in a collection.

An enumeration (or enum type) is a value type defined by a set of named abstract constants of the underlying integral numeric type. ~~to define non~~ ~~can~~ ~~be~~

By default, the associated constant values of enum members are type of int; they start with zero and increase by one following the definition text order.

Animator



SuppressFinalize should only be called by a class that has a finalizer if it's informing the garbage collector (GC) that "this" object was cleaned up fully

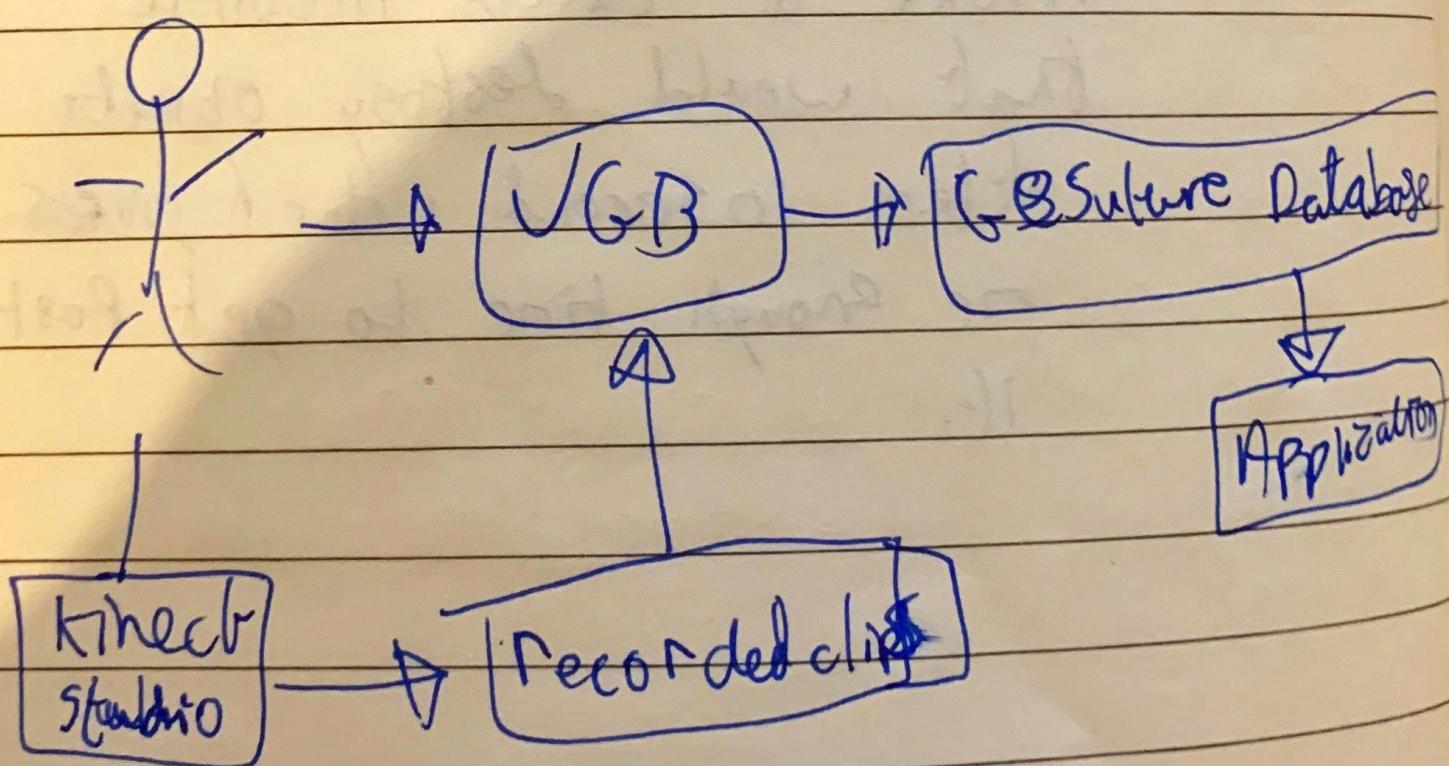
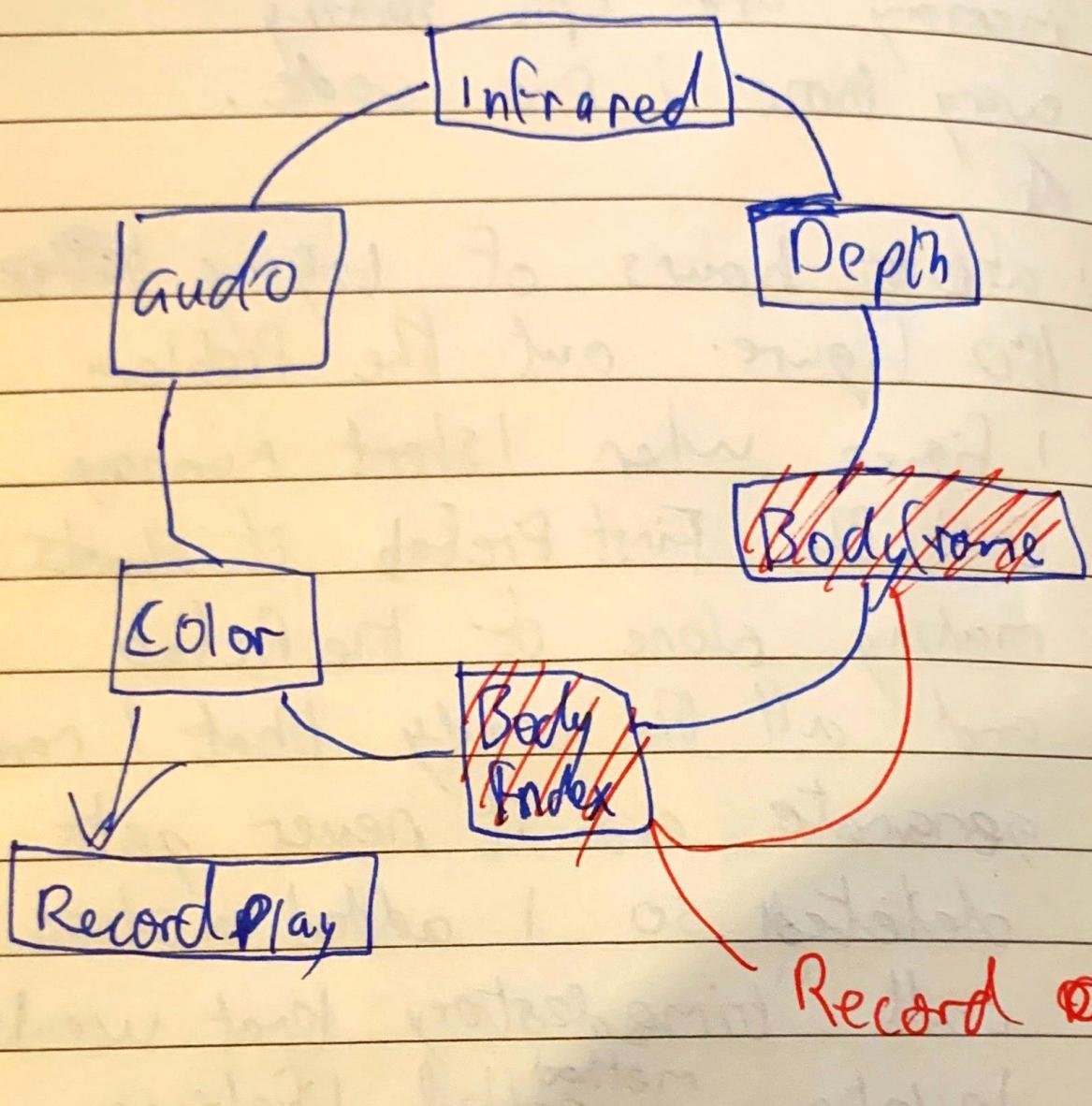
Instantiate - clones the object original and returns the clone

**Problem:** memory and cpu spiting  
every time i run code.

**Solutron**, after hours of trying ~~to~~  
to figure out the Problem

I figured when I start running  
past the first Prefab it starts  
making clone of the Prefab  
and all the candy that I random  
generate and it never gets  
deleted so I added a class  
call "timedestory" that would  
invoke a <sup>method</sup> called lifetime  
that would destroy objects  
after 10 second which gives  
me enough time to get past  
it.

## Recordable Data Sources



# Skeletal tracking

• the Poses & Human Skeleton is recognized with the help of machine learning algorithm called Decision Tree

• It can analyze up to 6 players but only Process 2 active Players simultaneously

