

Hi there!

My name is **Ferran**.

I love to have fun
making people have **fun**.

**This is the stuff me and James have
done for our Community Project.**



Train Crossing

Problem: When the train comes,
the barriers force
Everyone to wait

↓
Creating a
negative experience

↓
Let's make it
great and memorable!

Timetable ☆

File Edit View Insert Format Data Tools Help All changes saved in Drive

Comments Share

James Miller

	A	B	C	D	E	F	G	H	I	J	K
1		07/10/2013	14/10/2013	21/10/2013	28/10/2013	04/11/2013	11/11/2013	18/11/2013	25/11/2013	02/12/2013	09/12/2013
2	Concept	X	X	X	X	X					
3	Primary research	Ferran	Ferran	Ferran							
4	Contextual research	James	James	James							
5	Define idea				Ferran & James	Ferran & James					
6	Design										
7	Graphic design							Ferran&James			
8	Interaction design						Ferran&James				
9	Structural design						James	James			
10	Development										
11	Research twitter API						Ferran				
12	Research google API								Ferran		
13	Research kinect						Ferran				
14	Code basic							Ferran			
15	Code advanced								Ferran	Ferran	
16	Build structure								James		
17	Production					X					
18	Presentation					Ferran & James	Ferran & James				
19	Permission							James			
20	Get power source							James			
21	Get screen/projector								James		
22	Define quote							James			
23	Find day (check weather!!!)								James		
24	Apply it									James	Ferran & James

Timetable for the team:

For the rest of this pdf all work done by **FERRAN** & **JAMES** shall be seperated by colour code at the bottom.

URBAN ECHO - PUBLIC ART INSTALLATION



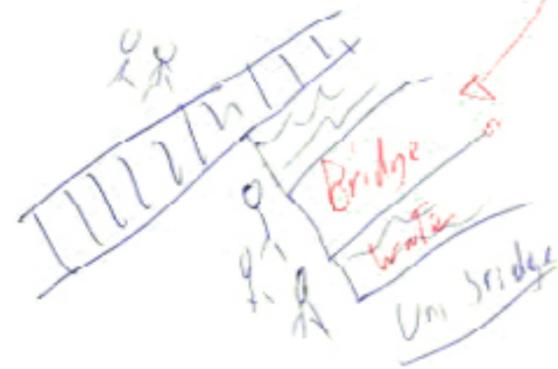
"Urban Echo" is an installation of public art made by the multidisciplinary study of LUST lab. Urban echo emphasizes the return to a communication centered on real places. This installation brings together public places and then the city people and cultures. The use of billboards as screens with webcams allow you to see new realities inserted one inside the other. Placed in public areas screens have a variety of modes of operation. Sometimes you create a loop that allows the interaction between people in different cities and sometimes are just a window on another one.

BRUUMRUUM! - INTERACTIVE INSTALLATION



"Bruumruum!" is a public interactive art installation created by David Torrents in collaboration with arte3 and LEDsCONTROL. Simple and effective, an audio installation reacting + LED presented in the public space in front of the Museum of Design (DHUB) of Barcelona.

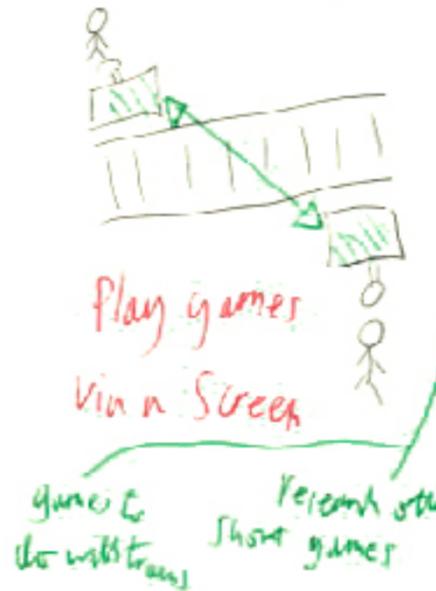
Sounds from the train
lights up installation on



Public interactive installations
Research



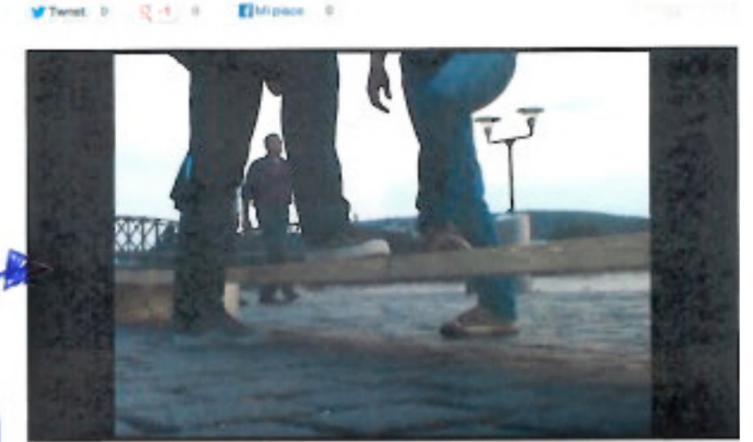
Street Pong



StreetPong is a concept about playful urban interactions. The starting point was the problem of waiting for a long time at pedestrian traffic lights. StreetPong can be played during the red phase at traffic light on a touchscreen display. The sponsored can be anyone on the other side of the street who is also waiting to cross the street. The game itself is based on the classic arcade game 'Pong' published in 1972. Highly interactive game is very easy to be understood and played in a short period of time. Looking at each other across the street and engaging in a game creates contact. Thus StreetPong provides a platform for communication and interaction among people of all ages and cultural backgrounds.

The StreetPong was started with the visualization of a project idea which was intended as a course achievement for a class (Eduardo Regal and Diego Pichel) were taking at the HWK Hochschule für Technik und Wirtschaft (urban interactions with Prof. Veitler). After the video had gained rapidly in popularity on the Internet and traditional media the game is now being installed at a pedestrian traffic light in Hildesheim. For the technical realization Anette Karslar and Thorsten Tün were taken on board. In cooperation with S&S&T, the city of Hildesheim and the HWK Hildesheim a prototype is currently developed.

LOVEKA - INTERACTIVE SOUND INSTALLATION

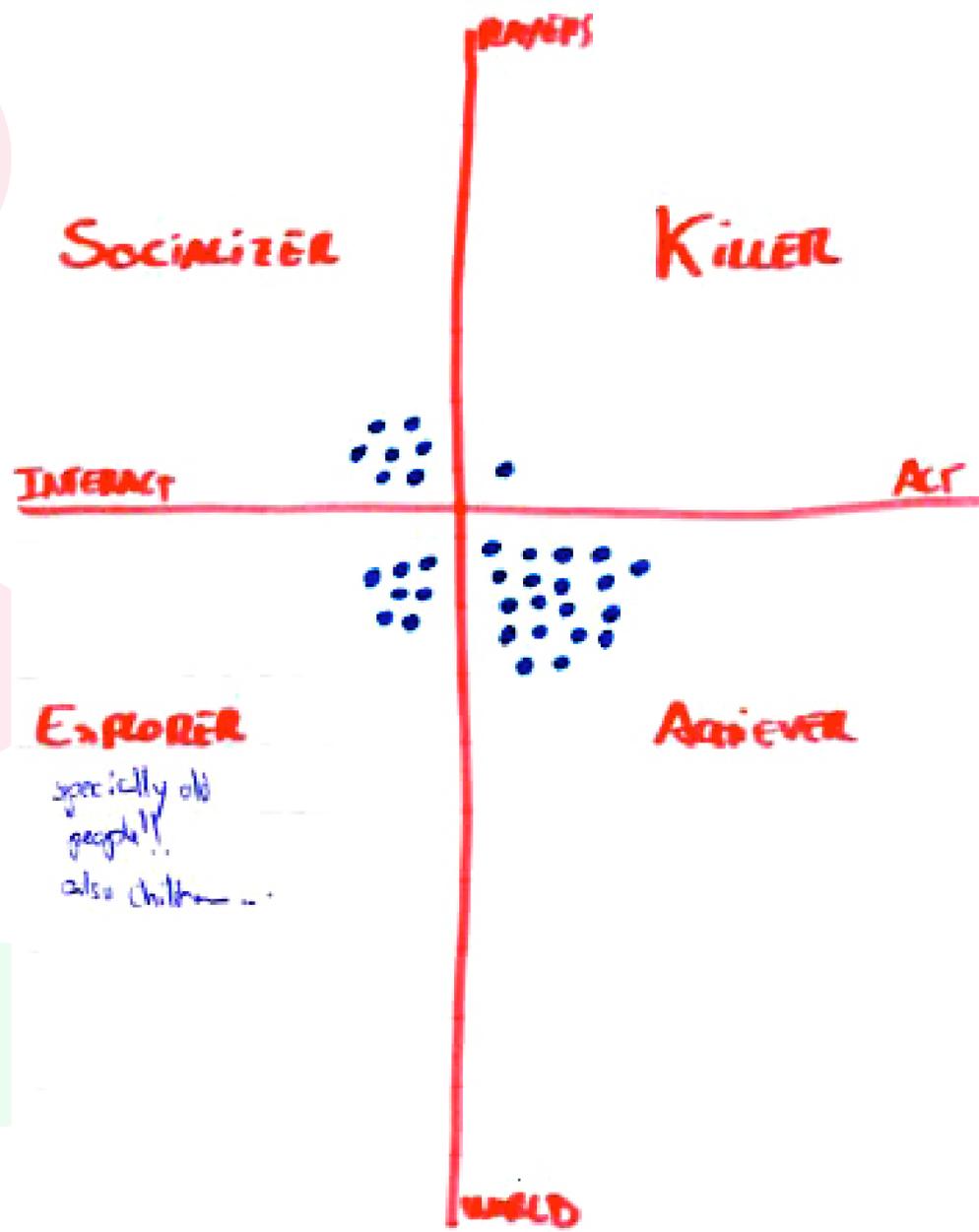


LOVEKA è un'installazione sonora interattiva di Jiri Suchanek (audiovisual artist). Loveka è stata presentata in uno spazio pubblico della (A)void gallery a Praga nell'ottobre 2009.

Planks of wood from train?



As the train goes over tracks -> Lights/Sounds



BEHAVIORS

- Impatient **M+ACH**
- Stress vs boredom → **WE SHOULD ANALYZE IT!**
- Upset vs resignation (moment of depression)
- Don't interact btw. them!! **R+SOC/A**
- Sit ~~over~~ the barrier on the side
- Look at the environment **A+EYP**
- Go in front of the queue **M+ACH**
- Stand up looking at the barrier/lights etc.
- Check mobile phone **R+SOC**
- Change the side **M+ACH**
- Lot of people in the wrong side = block when barriers **ACH**
- When barriers go up ⇒ **ACHIEVERS** ^{SP P} **M+ACH**
- People who is talking with enthusiasm - group end by stopping the talk. Maybe the topic is over...

AGE RANGE

0 - 12 |||

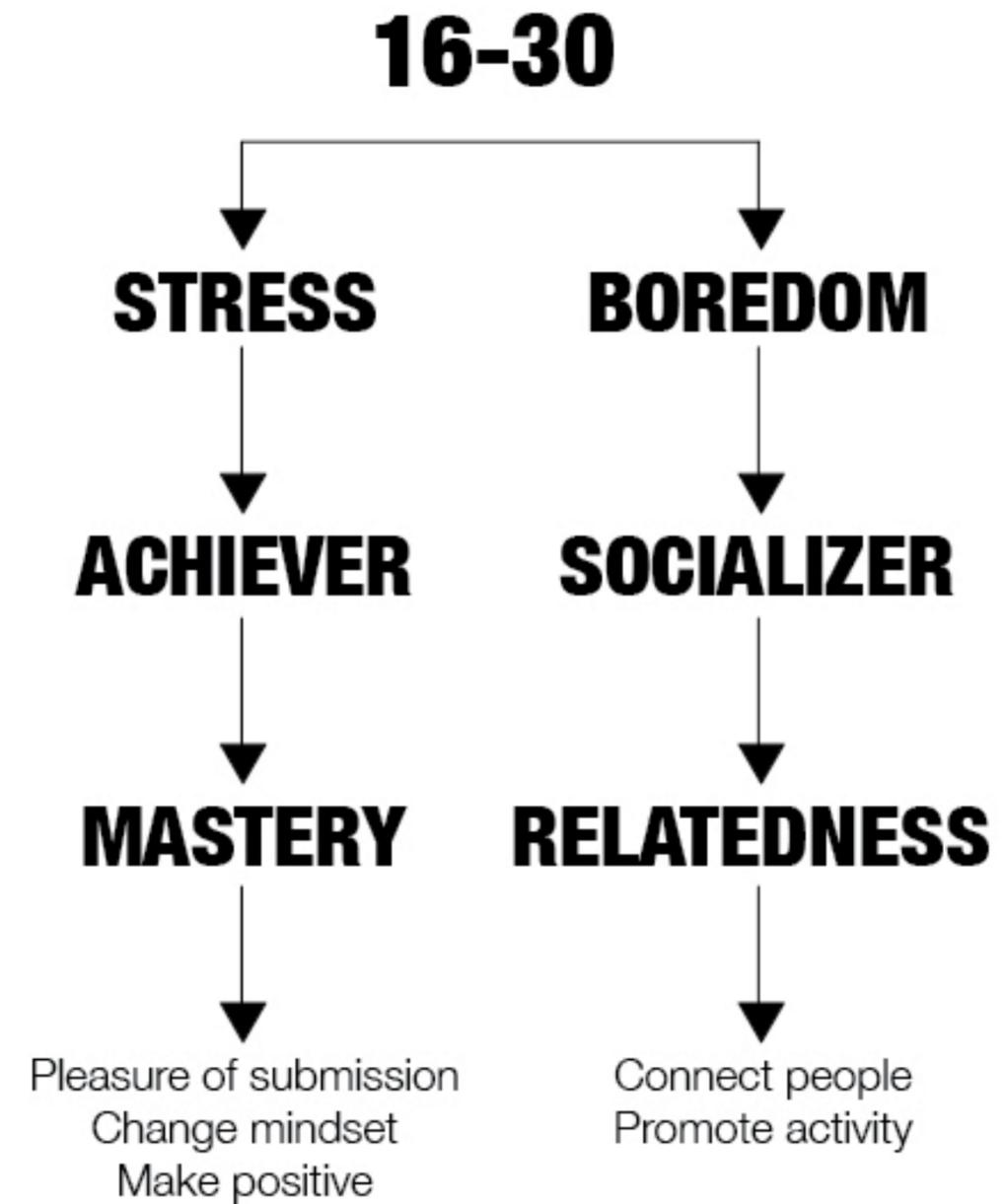
12 - 16 |||

17 - 25 |||||

25 - 35 ||

35 - 50 ||

> 50 |





Exchanging ideas in a coffee shop

Idea *explorers achieve* — changes their story by putting them in a particular place
extends their exploration

Where else would you rather be?



Teaches user where the train is going → We can then decide where they would rather be

Turning the negative of being stuck at crossing, into a positive by allowing users to imagine where they could be.

Spreading the word about the bridge getting built



The city building the bridge before the council.

All tweets are recorded on website, as a live partition

Partition + more work on the site

Seasonal Xmas
 Bridge of LED's that light up as people tweet to get the bridge built.

LED's controlled by Arduino + WiFi shield or raspberry

Posters all over city telling people live video or website

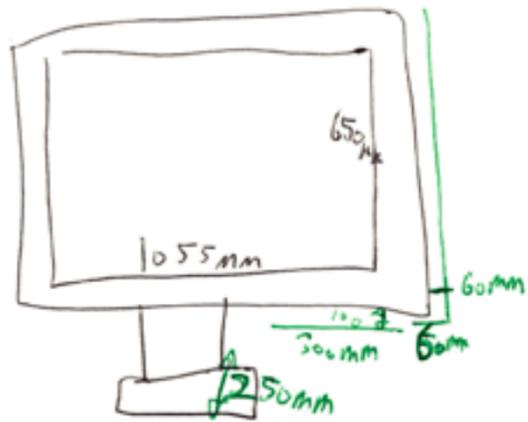
possibly involve kindecho

We need help with the How

We collated all our research and ideas into just two final concepts: 'Where else would you rather be?' and 'Spreading the word about the bridge getting built'.

We were both leaning toward doing the second idea, but the first was more realistic for us to achieve within the time constraints of the brief in terms of resources and funding of materials.

Measuring Equipment for garage make-up

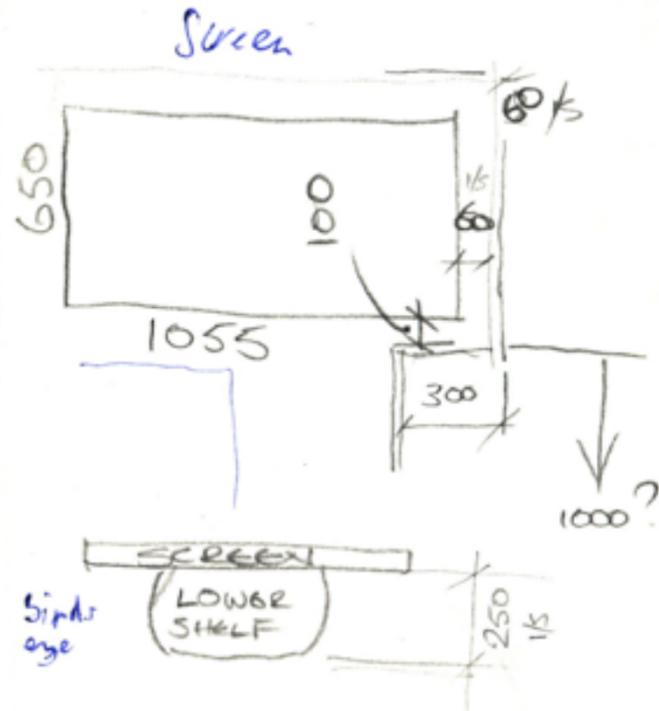


Trat plastics
01427 611611 611688 £28.97

700 x 1200 - 3m plastic
2 @ 1220 x 2440 x 18mm thick MDF

Friday
Approx 11.30
on 12.00

15 + 20 = 35 Each
↓
Ferran owes me £35
↓
Remember!!



B&Q
B&Q Lincoln LCN453
01522 510009
Manager : Rick Taylor
45 Days Returns Policy
See Overleaf

MDF	F	£20.48
MDF	F	£20.48

B&Q
B&Q Lincoln LCN453
01522 510009
Manager : Rick Taylor
45 Days Returns Policy
See Overleaf

Flat 50, Park Court
LN1 1UR

RETURN ITEM	ROLLER SET	-£3.98
RETURN ITEM	ROLLER SET	-£3.98
Total 2	Items	-£7.96
Card Refund	*****2920	£7.96

Card : VISADEBIT
Number : *****2920
PAN Seq : 00

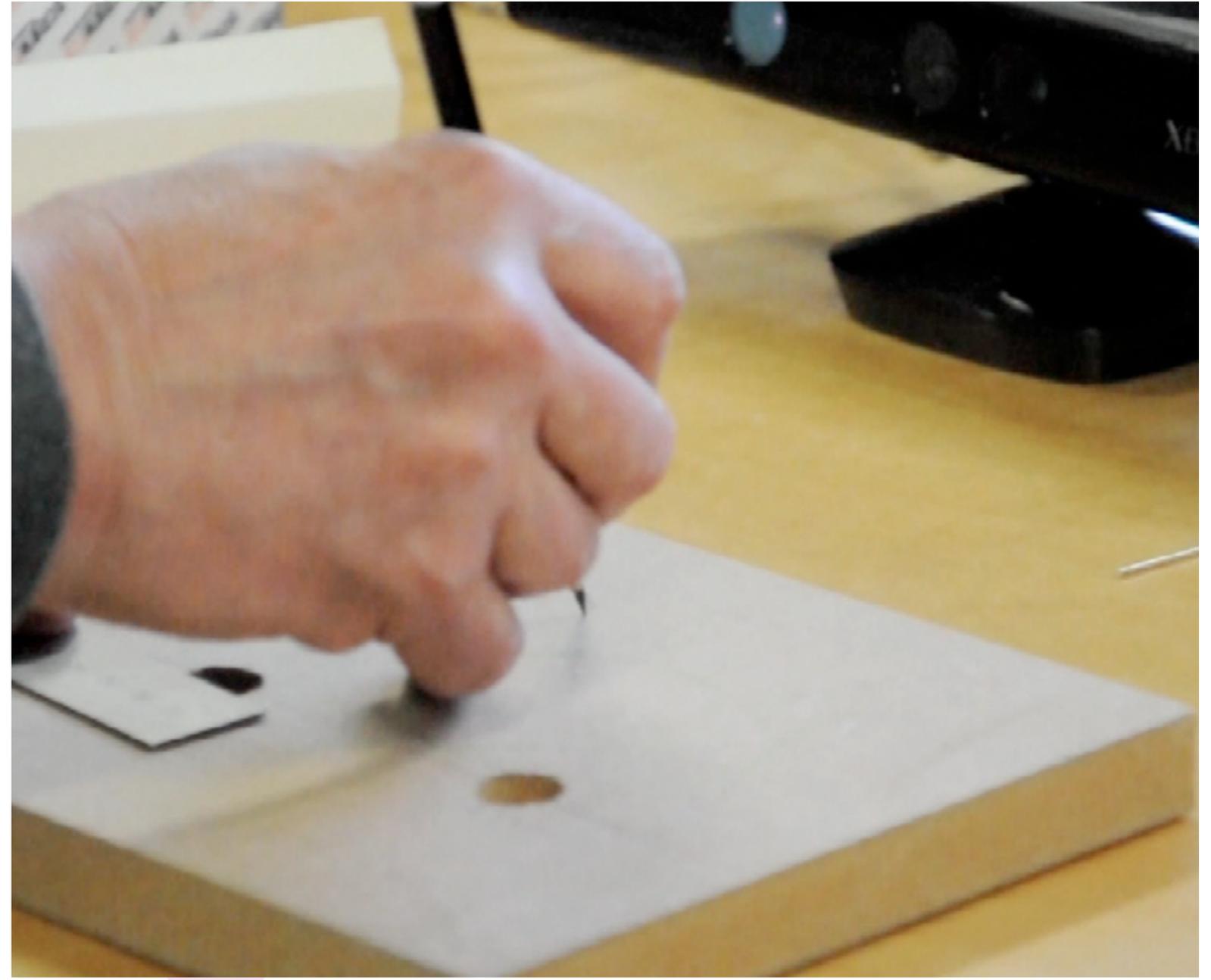
Card : VISADEBIT
Number : *****2920
PAN Seq : 00
AID : A0000000031010
App Date : 01/09/11
Cryptogram : 40/B2E9D02D43685E33
Auth Code : 605367
Merchant ID : 3984903
Terminal ID : 22054856

Please Debit my Account as shown
Cardholder PIN Verified

000453nnnn

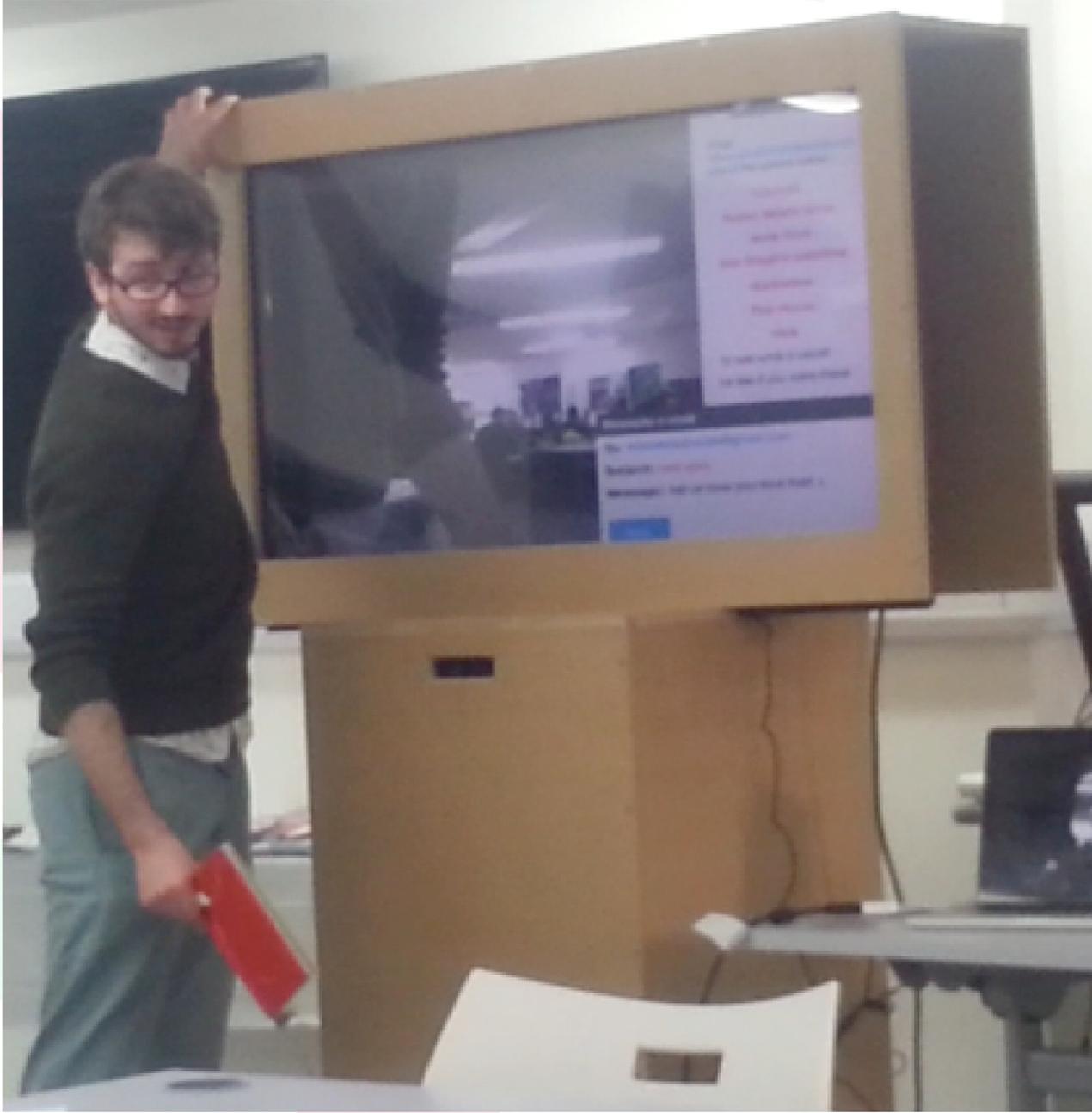
B&Q
B&Q Lincoln LCN453
01522 510009
Manager : Rick Taylor
45 Days Returns Policy
See Overleaf

DULUX PAINT	ROLLER SET	£36.98
ROLLER SET		£3.98
ROLLER SET		£3.98
Total 3	Items	£44.94
Card Sale	*****2920	-£44.94



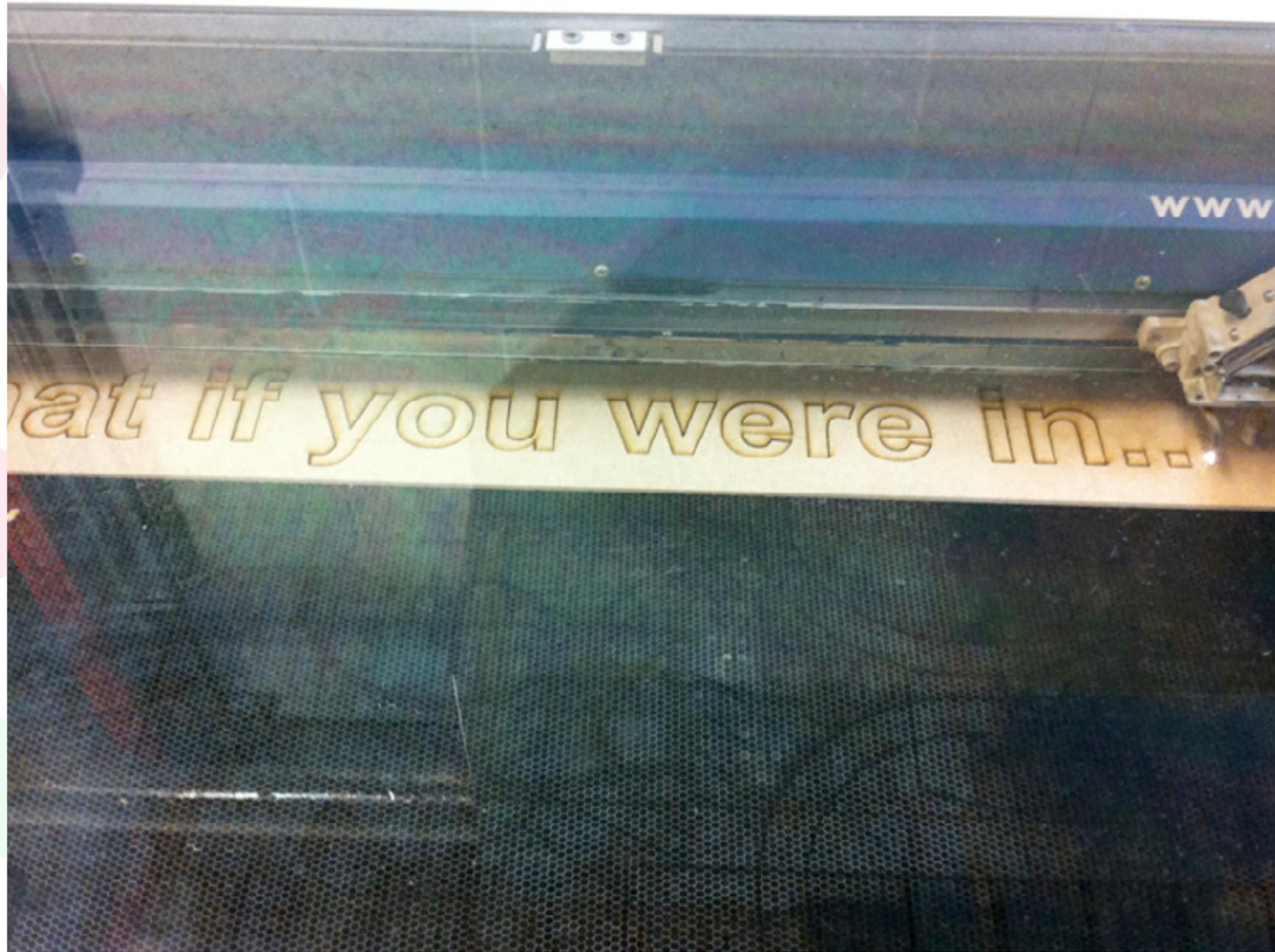
Building the structure - watch the video to this on: <http://youtu.be/DUiEszarpfs>

Done by **JAMES**

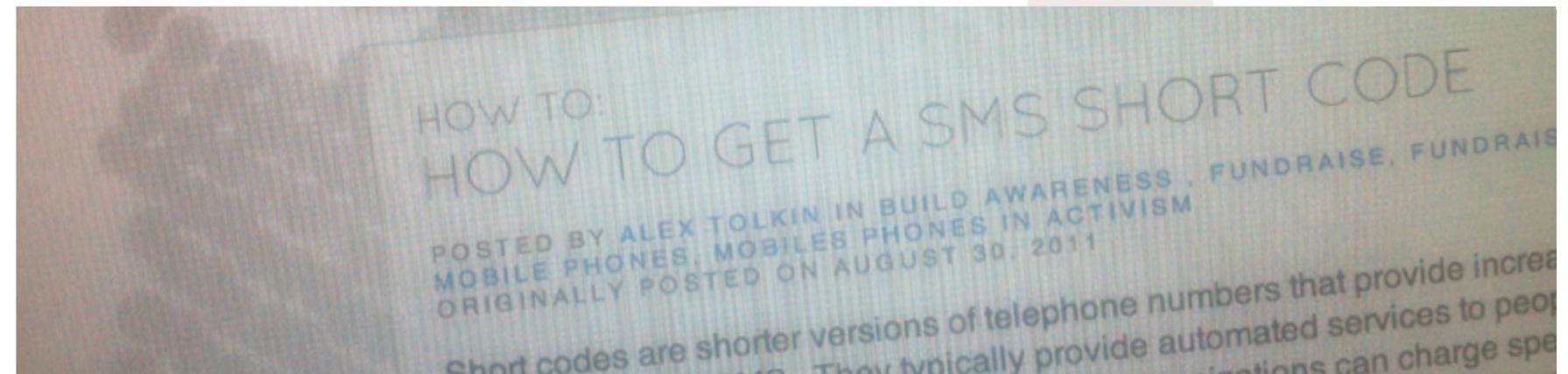
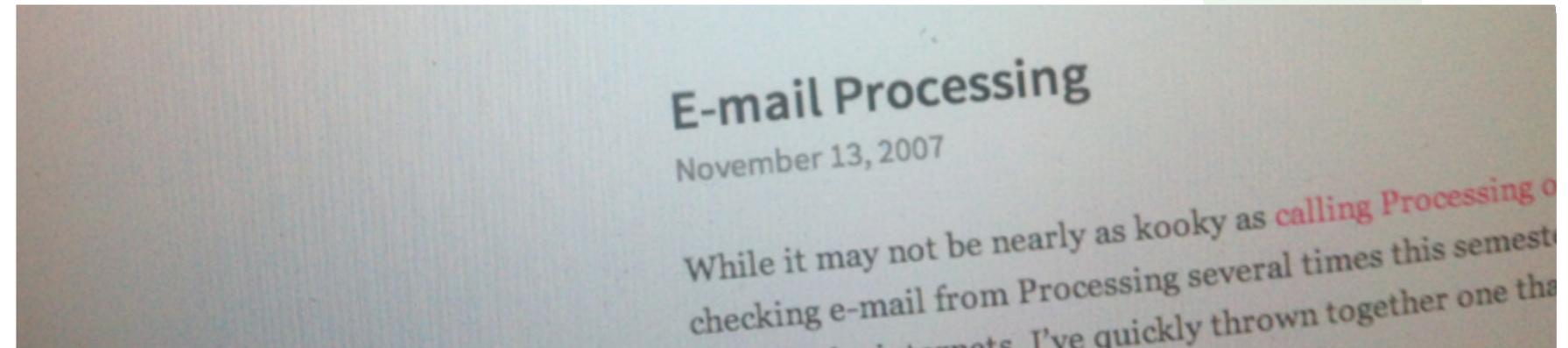
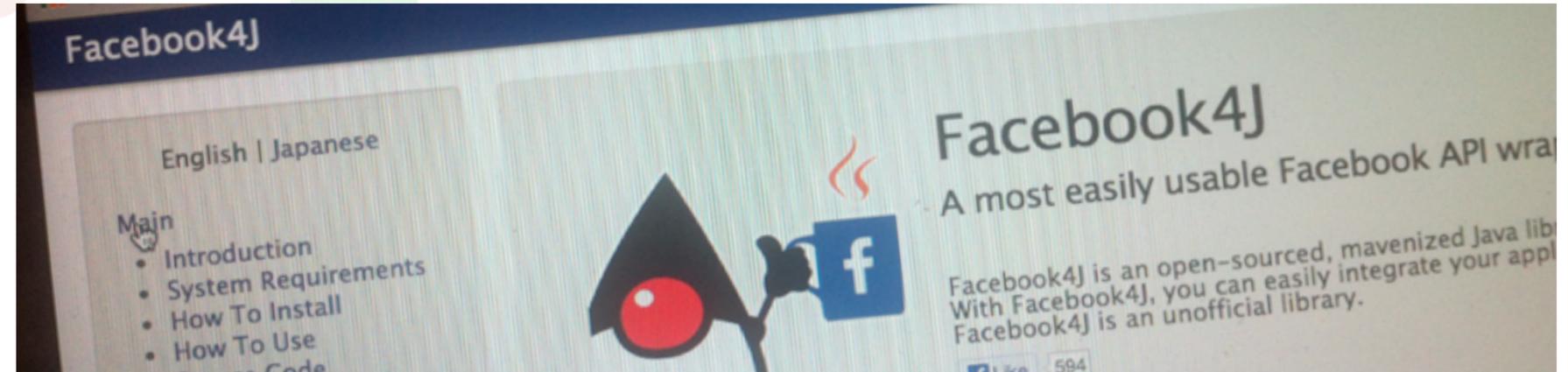


The making process

Done by **JAMES**



Laser cutting the title and the finished product



mailkinect Auth MailStuff

```
import SimpleOpenNI.*;
import fullscreen.*;
import jappleMenuBar.*;

import javax.mail.*;
import javax.mail.internet.*;
import java.util.*;

import processing.video.*;

FullScreen fs;

int state = 0;
int prevState = 0;

PImage bg1;
PImage bg2;
PImage bg3;
PImage bg4;
PImage bg5;
PImage bg6;

SimpleOpenNI kinect;

boolean tracking = false;
int userID;
int[] userMap;

int prevLength=0;
int currentLength=0;

String subject;
String insideMessage;

String defText = "here";
String from;

int counter = 0;
int maxCounter = 300;
```

```
//Interface stuff
PImage infoBox;
PImage popUp;

int popUpX = 353;
int popUpY = 480;
int popUpLimitY = 328;

int popUpCounter = 0;
int popUpTime = 150;
int popUpSpeed = 10;
int popUpState=0;

PFont font;
int textSize = 11;
int kerningX1 = 50;
int kerningX2 = 62;
int kerningY1 = 43;
int kerningY2 = 67;

void setup()
{
    size(640, 480);

    kinect = new SimpleOpenNI(this);
    kinect.setMirror(true);
    kinect.enableDepth();

    // enable color image from the Kinect
    kinect.enableRGB();
    kinect.enableUser(SimpleOpenNI.SKEL_PROFILE_NONE);

    // turn on depth-color alignment
    kinect.alternativeViewPointDepthToImage();
}
```

```
// load the background image
bg1 = loadImage("data/bg1.jpg");
bg2 = loadImage("data/bg2.jpg");
bg3 = loadImage("data/bg3.jpg");
bg4 = loadImage("data/bg4.jpg");
bg5 = loadImage("data/bg5.jpg");
bg6 = loadImage("data/bg6.jpg");

infoBox = loadImage("data/infoBox.png");
popUp = loadImage("data/popUp.png");

font = loadFont("helveticaneue.vlw");
textFont(font, textSize);
fill(0);

fs = new FullScreen(this);
fs.enter();
}

void draw(){
    trackmsg();
    printImg();
    printInterface();
}

void onNewUser(int uID){
    userID = uID;
    tracking = true;
    println("tracking");
}

void mousePressed(){
    if(state<6){
        state++;
    }
    else{
        state=0;
    }
}
```

```
void printImg(){
    kinect.update();

    if(state==0){
        //mbg1.pause();
        image(kinect.rgbImage(), 0, 0, width, height);
    }
    else{
        if(state==1){
            image(bg1, 0, 0, width, height);
        }
        else if(state==2){
            image(bg2, 0, 0, width, height);
        }
        else if(state==3){
            image(bg3, 0, 0, width, height);
        }
        else if(state==4){
            image(bg4, 0, 0, width, height);
        }
        else if(state==5){
            image(bg5, 0, 0, width, height);
        }
        else if(state==6){
            image(bg6, 0, 0, width, height);
        }
    }

    if (tracking) {
        // get the Kinect color image
        PImage rgbImage = kinect.rgbImage();

        // prepare the color pixels
        rgbImage.loadPixels();
        loadPixels();
    }
}
```

```
userMap = kinect.getUsersPixels(SimpleOpenNI.
for (int i =0; i < userMap.length; i++) {
    // if the pixel is part of the user
    if (userMap[i] != 0) {
        // set the sketch pixel to the color pixel
        pixels[i] = rgbImage.pixels[i];
    }
}
updatePixels();
}
}

void trackmsg(){

    if(counter<maxCounter){
        counter++;
        println(counter);
    }
    else if(counter==maxCounter){
        checkMail();
        filtermsg();
        counter=0;
        saveFrame("img/WhatIfYouWereIn-###.jpg");
    }
}

void filtermsg(){
    println(defText);

    if(defText.equals("back to lincoln")){
        state=0;
    }
    else if(defText.equals("super mario bros")){
        state=1;
    }
}
```

```

}
if(defText.equals("barbados")){
  state=4;
}
if(defText.equals("the moon")){
  state=5;
}
if(defText.equals("hell")){
  state=6;
}

if(state != prevState){
  popUpState=1;
}

prevState=state;
}

```

//Interface functions

```

void printInterface(){
  printBox();
  printPopUp();
}

```

```

void movePopUp(){
  if(popUpState == 1){
    popUpY-=popUpSpeed;
    if(popUpY<=popUpLimitY){
      popUpState = 2;
    }
  }
  else if(popUpState == 2){
    popUpCounter++;
    if(popUpCounter>popUpTime){
      popUpState = 3;
      popUpCounter=0;
    }
  }
}

```

```

else if(popUpState == 3){
  popUpY+=popUpSpeed;
  if(popUpY==height){
    popUpState=0;
  }
}
}

void popUpTrigger(){
  if(mousePressed && popUpState==0){
    popUpState=1;
  }
}

```

```

void printPopUp(){
  popUpTrigger();
  movePopUp();
  if(popUpState>0){
    image(popUp,popUpX,popUpY-10);
    text(from,popUpX+kerningX1,popUpY-10+kerningY1);
    text(defText,popUpX+kerningX2,popUpY-10+kerningY2);
  }
}

```

```

void printBox(){
  image(infoBox,0,-10);
}

```

mailkinect

Auth

MailStuff

```

// Daniel Shiffman
// http://www.shiffman.net

```

```

// Simple Authenticator
// Careful, this is terribly unsecure!!

```

```

import javax.mail.Authenticator;
import javax.mail.PasswordAuthentication;

```

```

public class Auth extends Authenticator {

```

```

  public Auth() {
    super();
  }

```

```

  public PasswordAuthentication getPasswordAuthentication() {
    String username, password;
    username = "wiywin@gmail.com";
    password = "D9stajfg";
    //System.out.println("authenticating. . ");
    return new PasswordAuthentication(username, password);
  }
}

```

```

mailknect Auth MailStuff
// A function to check a mail account
void checkMail() {
    try {
        Properties props = System.getProperties();
        props.put("mail.pop3.host", "pop.gmail.com");

        // These are security settings required for gmail
        // May need different code depending on the account
        props.put("mail.pop3.port", "995");
        props.put("mail.pop3.starttls.enable", "true");
        props.setProperty("mail.pop3.socketFactory.fallback", "false");
        props.setProperty("mail.pop3.socketFactory.class", "javax.net.ssl.SSLSocketFactory");

        // Create authentication object
        Auth auth = new Auth();

        // Make a session
        Session session = Session.getDefaultInstance(props, auth);
        Store store = session.getStore("pop3");
        store.connect();

        // Get inbox
        Folder folder = store.getFolder("INBOX");
        folder.open(Folder.READ_ONLY);
        //System.out.println(folder.getMessageCount() + " total messages.");

        // Get array of messages and display them
        Message message[] = folder.getMessages();

        /*for (int i=0; i < message.length; i++) {
            System.out.println("-----");
            System.out.println("Message # " + (i+1));
            System.out.println("From: " + message[i].getFrom()[0]);
            System.out.println("Subject: " + message[i].getSubject());
            System.out.println("Message:");
            String content = message[i].getContent().toString();
            System.out.println(content);
        }*/
    }
}

```

```

currentLength = message.length;

if(currentLength>prevLength){
    //we are looking at the last e-mail here
    subject = message[(currentLength-1)].getSubject();
    insideMessage = message[(currentLength-1)].getContent().toString();

    defText = subject.toLowerCase();
    from = ""+message[(currentLength-1)].getFrom()[0];

    /*System.out.println("-----");
    System.out.println("Message # " + (currentLength-1));
    System.out.println("From: " + message[(currentLength-1)].getFrom()[0]);
    System.out.println("Subject: " + message[(currentLength-1)].getSubject());
    System.out.println("Message:");
    String content = message[(currentLength-1)].getContent().toString();
    System.out.println(content);*/
}
else{
    //System.out.println("No new message");
}

prevLength=currentLength;

// Close the session
folder.close(false);
store.close();
}
// This error handling isn't very good
catch (Exception e) {
    e.printStackTrace();
}
}

// A function to send mail
void sendMail() {
    // Create a session
    String host="smtp.gmail.com";
    Properties props=new Properties();

```

```

// SMTP Session
props.put("mail.transport.protocol", "smtp");
props.put("mail.smtp.host", host);
props.put("mail.smtp.port", "25");
props.put("mail.smtp.auth", "true");
// We need TLS, which gmail requires
props.put("mail.smtp.starttls.enable", "true");

// Create a session
Session session = Session.getDefaultInstance(props, new Auth());

try
{
    // Make a new message
    MimeMessage message = new MimeMessage(session);

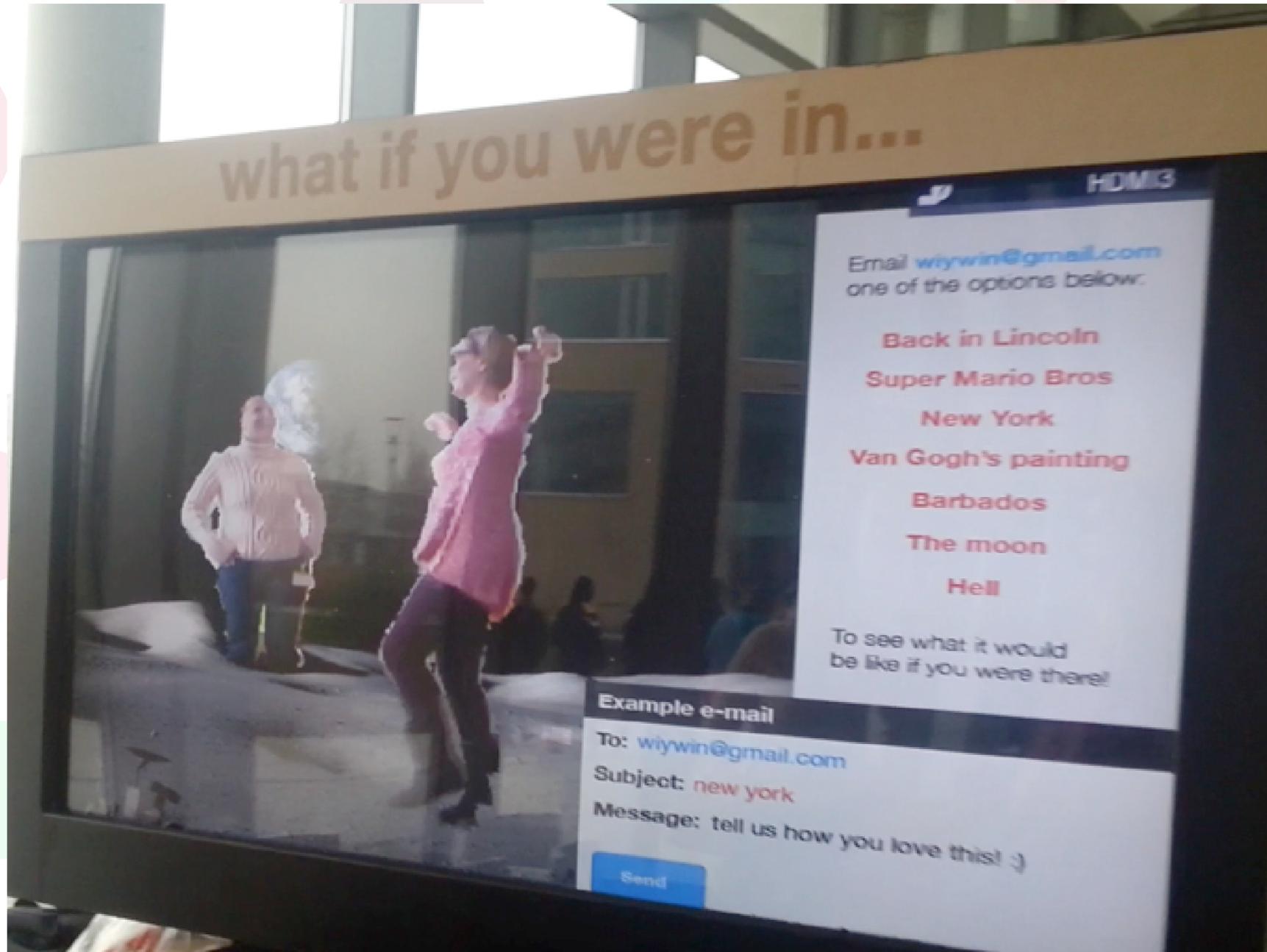
    // Who is this message from
    message.setFrom(new InternetAddress("name@gmail.com", "Name"));

    // Who is this message to (we could do fancier things like make a list or add CC's)
    message.setRecipients(Message.RecipientType.TO, InternetAddress.parse("address@email.com", false));

    // Subject and body
    message.setSubject("Hello World!");
    message.setText("It's great to be here. . .");

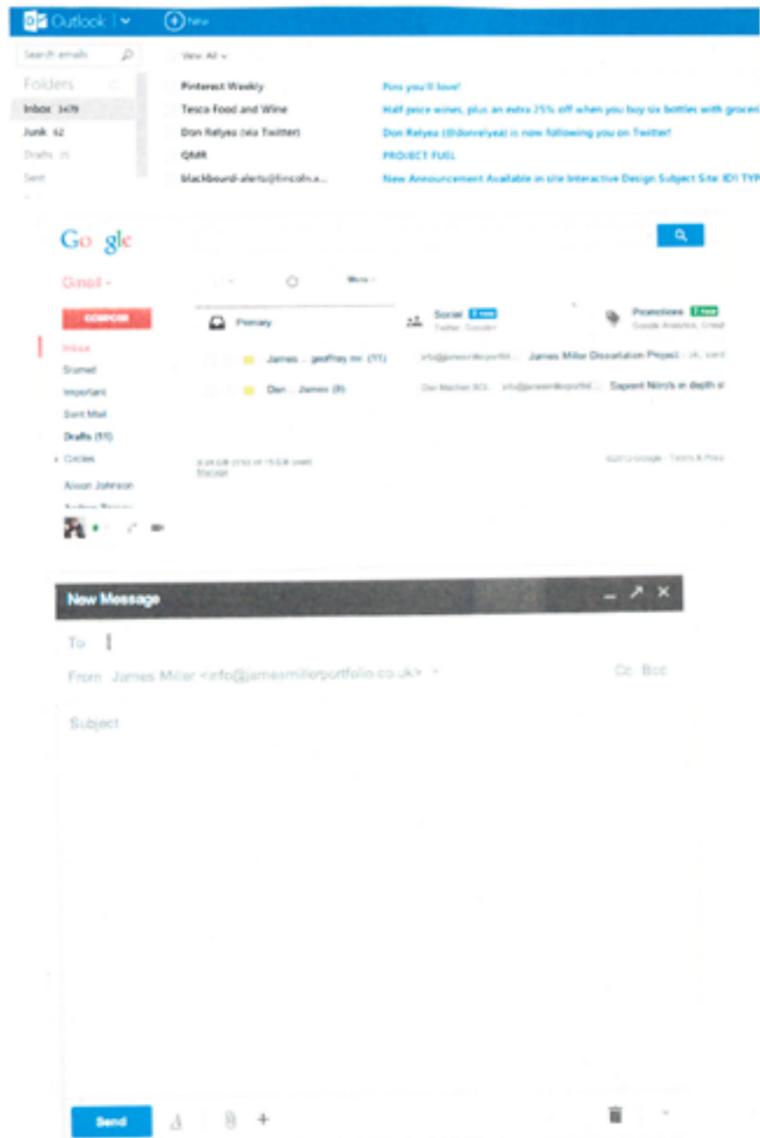
    // We can do more here, set the date, the headers, etc.
    Transport.send(message);
    println("Mail sent!");
}
catch(Exception e)
{
    e.printStackTrace();
}
}

```



Testing 'what if you were in...' with live audience & the petrol generator - watch the video to this on: <http://youtu.be/MpoPrXwRH-Y>

Relating interface to email

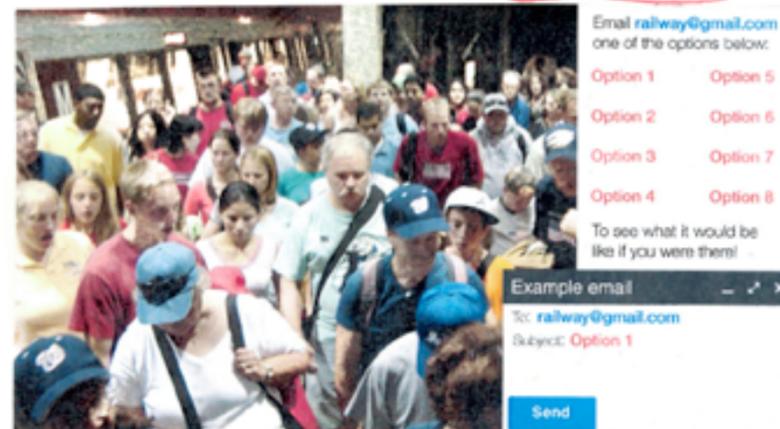


Refining Design



Initial Design

We need ways to be able to understand the interface and relate it to their mobile phones
Developed Idea emailing app!





Email railway@gmail.com
one of the options below:

- Option 1
- Option 2
- Option 3
- Option 4
- Option 5
- Option 6
- Option 7
- Option 8

To see what it would be like if you were there!

Example email

To: railway@gmail.com

Subject: **Option 1**

Send

Due to the installation being operated via email, we made the interface similar to that of gmail/hotmail - so that it would be more intuitive to users to understand how to use 'what if you were in...'

Train is Coming → Railway crossing barriers come down → Crowd is frustrated and bored about waiting

USER FLOW

Users see installation, reads the on-screen instructions
↓
Users play with the installation

Users have a new memory of a great experience at the rail crossing! ← Railway crossing barriers go up ← Crowd feels positive



A Skype meeting during reading week to catch up before exhibition on the 10/1/14



Exhibiting at location, watch video here: <http://youtu.be/Swuka5XJRcw>

Wish yourself away from Lincoln train barriers with interactive screen

By HGilbey_LE | Posted: January 10, 2014



Interactive design students James Miller and Ferran Altarriba

When Lincoln's train barriers go down on a rainy day, people often find themselves wanting to wish themselves away to somewhere hot and sunny.

Now, thanks to two University of Lincoln students, people caught by the barriers can do just that.

Interactive design students James Miller and Ferran Altarriba have designed a screen that takes your image and transports you to a destination of your choice.

People will be able to move around within the image using a 3G real-time connection.

All it takes is an email to the system telling it where you want to go, and an imaginative mind.

Its creators say the interactive screen can even place you in video games such as Super Mario Bros.

The pair came up with the idea after being given a brief to help the local community - and decided people waiting at Brayford Wharf East level crossing were most in need.

It will stay at the crossing for most of this afternoon.



UNIVERSITY OF LINCOLN

News and stories from the School of Art and Design | College of Arts | University of Lincoln



LSA&D In Session



You might like this...



Wish Yourself Away
Two students from BA (Hons) Interactive Design have caught the imagination of usually frustrated

Wish Yourself Away

Two students from **BA (Hons) Interactive Design** have caught the imagination of usually frustrated pedestrians by asking them where they'd rather be other than waiting at the Brayford Wharf East train barriers.



James Miller and Ferran Altariba inserted a screen that could take your image and place it in a destination of your choice while you were waiting for the barriers to lift; something that sounds like a lot more fun than simply counting the carriages and

James Miller and Ferran Altariba inserted a screen that could take your image and place it in a destination of your choice while you were waiting for the barriers to lift; something that sounds like a lot more fun than simply counting the carriages and wondering if they'll ever end.

James and Ferran explain all here:



The pair said they came up with the idea after being given a brief to help the local community. It proved such a hit that it even made its way into the **Lincolnshire Echo**.

It's great to see student work going out and having an impact. Next step: the human evolution of wings so we won't have to wait anymore. (Although the soon to be built bridge will probably be less complicated.)

After exhibiting 'What if you were in...' during a few hours in the railway crossing in front of the University of Lincoln, some conclusions can be done. The first of them, and maybe the most important one, is that after several weeks of working hard, in a serious, constant and meticulous way, things will always be alright.

Me and James have had the pleasure and the luck to meet each other and have the chance to work together in this project. In my opinion, we have become a great team and the process has been the easiest it could be, a total pleasure. We have done our best to achieve the most in all the aspects related to our project, trying not to leave anything without a meaning.

During the exhibition, some technical problems occurred. Basically, it turned out that the Kinect Sensor doesn't work well outdoors when there's intense sun light (which shouldn't be like this as it's supposed to be an infrared-based device). Besides this, which has given us the chance to know this device's limitations, the experience has been a total success in my opinion. People got interested by our proposal both for the interactive content and the structure, and lots of them had a memorable experience when they were stuck at the railway crossing by looking at and interacting with the installation. Furthermore, me and James had the pleasure to be interviewed by The Lincolnshire Echo, a proof that our project has successfully grown up and become a reality.

Because of all this, I'm confident and proud about what me and James have achieved with our 'What if you were in...' project. The final result, the amount of things we've learnt and specially the fun we've had during the process are worth the great amount of hours we have invested (the word 'spent' wouldn't be the correct here) working on it.

Today was hectic from the minute we started setting up all of the components for the 'what if you were in...' installation at the rail crossing. We had more problems than anticipated setting up the equipment (most if it concerning the start up of the diesel generator - in which we had to get a technician sent out to us to fix the problem), which led to us starting up later than we had originally planned.

But once we got the installation running, it worked well - with lots of people taking an interest. Even the Lincolnshire Echo, the local news paper came out of the building to find out what we were doing and interviewed us, which I believe just goes to show how the community responded to us so positively! I think the best part of it all was seeing people respond to our creation right in front of us. At one point a child sat on his fathers shoulders started playing with the installation by waving his arms in the air, which was great!

Ferran and I are so happy we committed to exhibiting this and stuck it out, at some points we were worried if it was going to work or not, due to the kinect having issues operating correctly in the sun light. As a sensor, it is clear that the kinect has great limitations when being used outside. If we were to work on this again, we would have to research other possible cameras/sensors to make this installation work more efficiently. In any event, as the day went on and the technology worked better and it turned out to be a great success!



Option A: Total Freedom

This ideal improvement would, first of all, delete the set of default options in order to provide a total freedom of choice. Users would see images live through a webcam or through available videos (in the case of fiction like a movie).

The installation wouldn't be limited to emailing. Other technologies would be used, such as facebook, twitter, whatsapp, sms, google+ and even a voice recognition system.

In addition, the whole structure of the installation wouldn't be restricted to a classic 16:9 TV screen. (here we add the image of the ideal structure)

Why would this option be great?

It would provide users a great level of freedom in two aspects: freedom of choice and freedom in terms of the way to interact. Therefore, the experience would always be more personalized. Moreover, the graphics on the screen related to the 'list of choices' would become useless, so they would disappear, making the screen cleaner.

Why its development is too complex?

Giving a freedom of choice implies having to care about possible 'bad attitudes' from users (such as consciently asking for rude images). Therefore, a really stable and robust security system should be designed and developed. It will be intelligent enough to find correct images on the net, not just images with 'tags' or 'keywords' related to users queries, to avoid showing images that don't fit their choices.

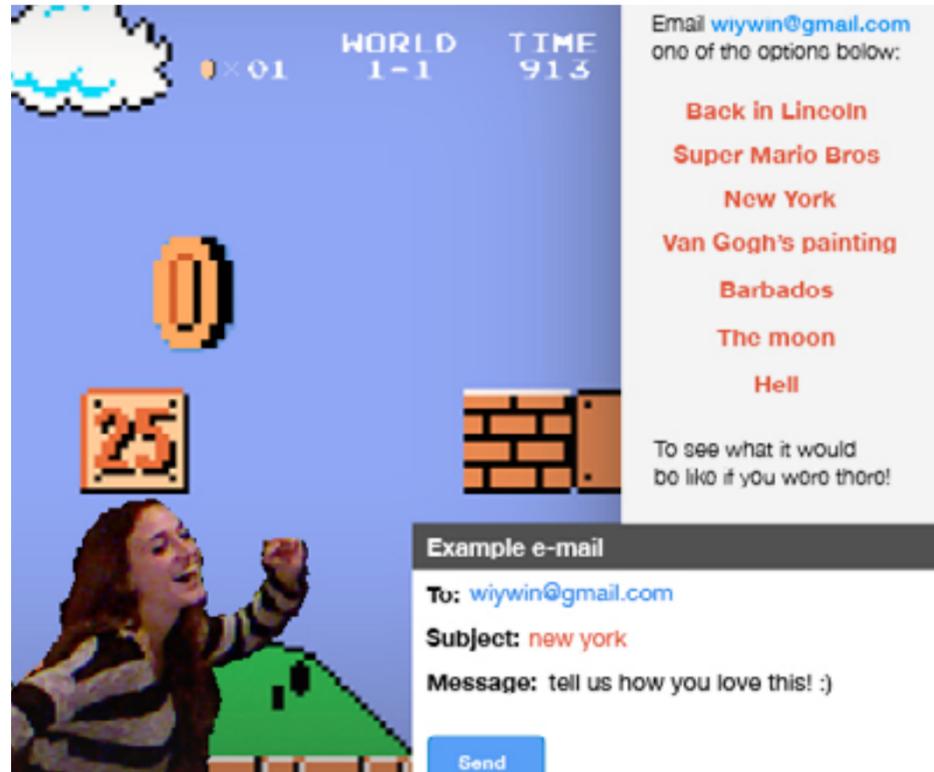
Option B: Playful interactivity

This ideal improvement would make scenarios interactive in a playful way. In this case, users wouldn't only be able to decide where they would like to be but also would be able to interact with that place. Given the set of options used in the real exhibition, some interactions could be:

-High level of interactivity

-Game-like and interactivity, playful arenas

-Limited set of options



Super Mario Bros: play the game being the main character or, worst case scenario, interact with the scene as if user was Super Mario.



Van Gogh's painting: modify the painting itself by applying own drawings or, alternatively, interact with the scenario as if users were part of the painting.



Hell: fight with the devil.

WHAT IT COULD HAVE BEEN - ALTERNATIVE IDEA

- GREAT idea
- Too complex development: more resources and technical help needed
- Not chosen due to the need to be realistic within the brief context

At a first stage of this projects, two great ideas were defined above all the others: 'What if you were in...' (the one that finally was developed) and a second one. This second idea, although it was at least as attractive and powerful as the developed one, was discarded due to the complex development it required.

Before explaining this idea, therefore, it needs to be clear that the one and only reason why it wasn't developed was because the development was too complex and expensive in relation to the context of this brief. It is, then, an idea to definitely keep in mind. This alternative idea was based on the making of a 'bridge' made of LEDs that crossed the railway. The LEDs were turned off, but as users tweeted using a certain hashtag, they would start turning on. (add the drawing in the sketchbook here!)

A couple of facts made this idea very powerful:

- It was related to a real cause: it was meaningful in terms of reality. It would help people to protest in order to get the bridge built as soon as possible. An implicit message would be behind the installation: 'People in Lincoln can build a bridge in few hours while the council needs years to do it'.
- As it would be exhibited during the Christmas period, the fact that it had to be made of LEDs would make it smooth enough to merge with the whole decoration in the city.

