



THE COVENT GARDEN WITH TALKING

USER SCENARIOS

PERSONA
USER STORIES
STORYBOARD
COMPONENTS

TOUCH POINTS AND MODES OF INTERACTION

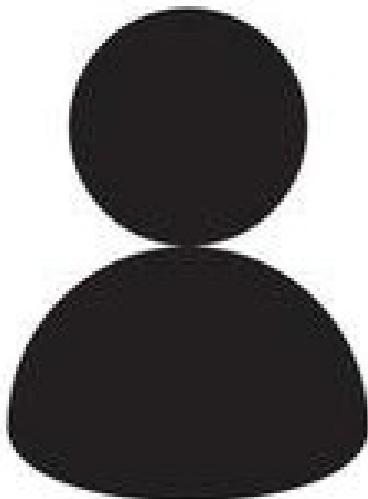
SYSTEM

SYSTEM DIAGRAM AND PROTOCOLS
SCENARIOS
BILL OF MATERIALS

COMPONENTS

C4 MODEL
LIBRARIES AND LANGUAGES
COMPONENT: HUMAN DETECTION
COMPONENT: MUSIC RECOGNITION

Personas



GENERAL INFO:

- Francis
- 27 years old
- Postgraduate student
- Studying in Osaka, come to London for a holiday

GOALS:

- Travel the world and experience different cultures
- Become a landscape designer

PERSONALITY:

- Loves quiet environment
- Idealistic and empathetic
- Likes to post personal story on Instagram

FRUSTRATIONS:

- Social phobia

MOTIVATIONS:

- Acquiring travel information
- Enjoying good humanistic atmosphere
- Sharing travel picture on social media

BIO:

Francis is currently studying landscape in Osaka. He recently planned to come to London as part of his personal global travel plans. He enjoys documenting the local culture of different cities. Most of the time, he enjoys spending time alone. But he is active on social media, sharing his life to his followers.

BRAND:

IOS, Instagram, BiliBili, Nintendo, WeChat, Lumion.

User Stories

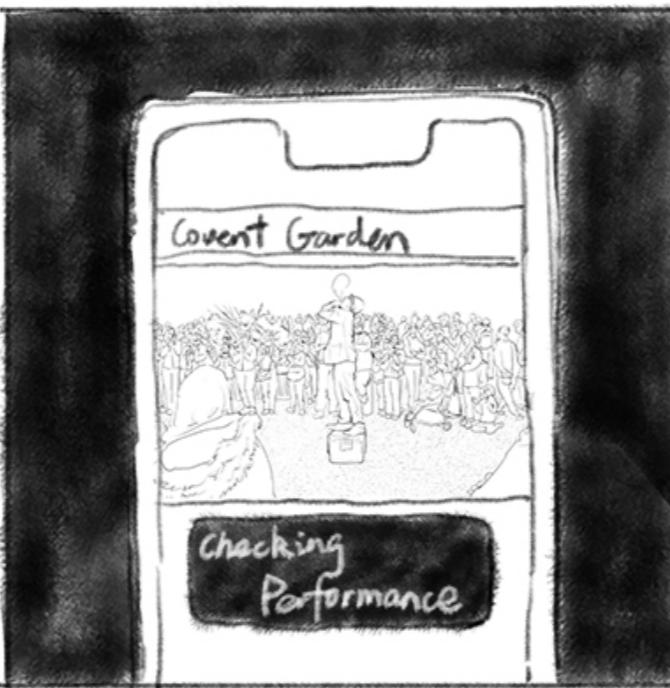
As a visitor of the Covent Garden

I would like to know basic information about the street performances in the piazza, such as the content of the performances, the schedule, and the density of the audience in the venue.

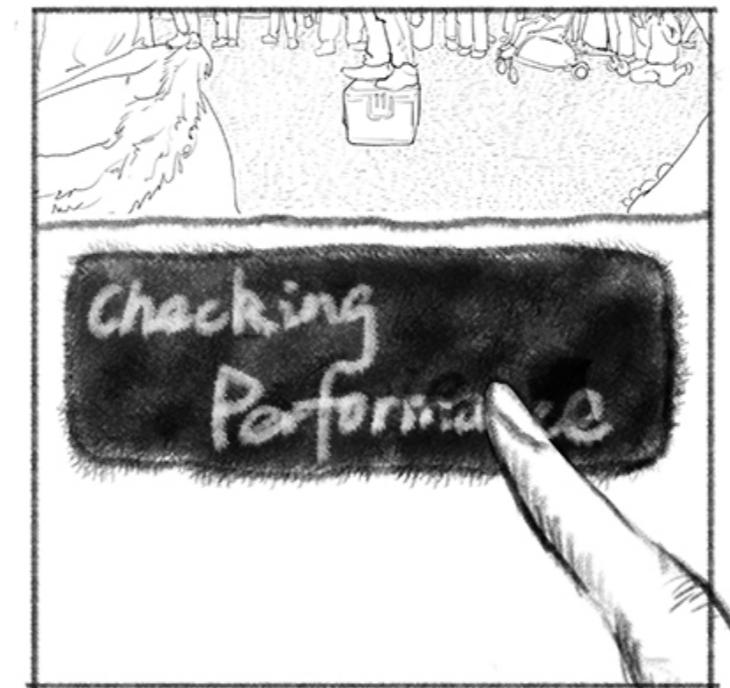
So that I can plan to see the shows I interested in and avoid the peak crowds.



Retrieval of the Performance



Knowing the Covent Garden



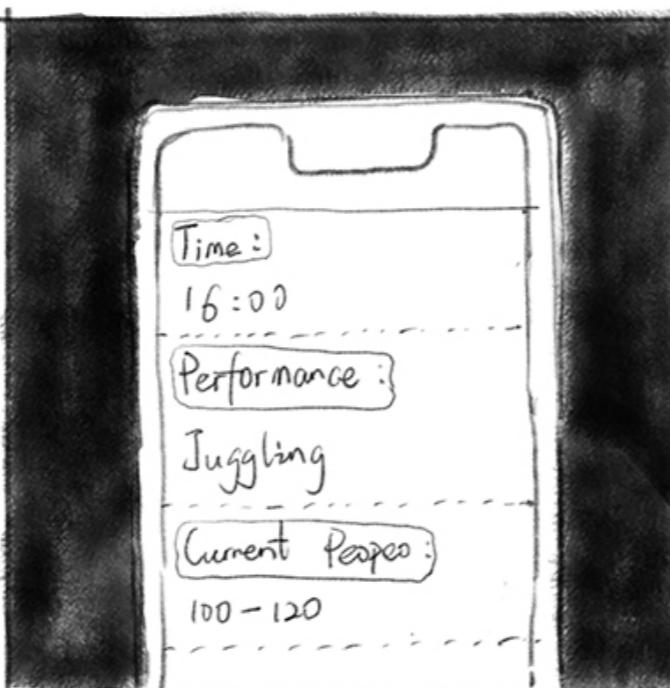
Accessing the Interface



Browsing performances



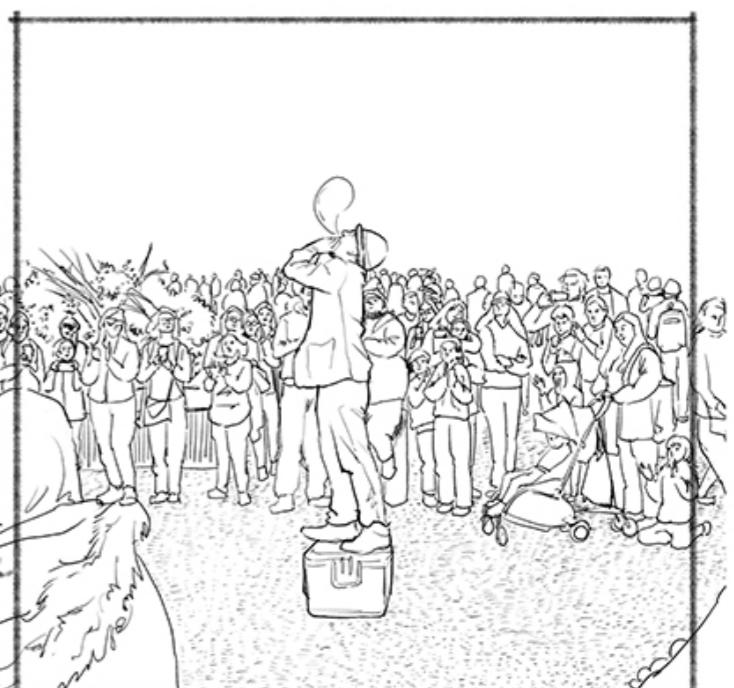
Checking the Schedule



Checking Information of the Performance



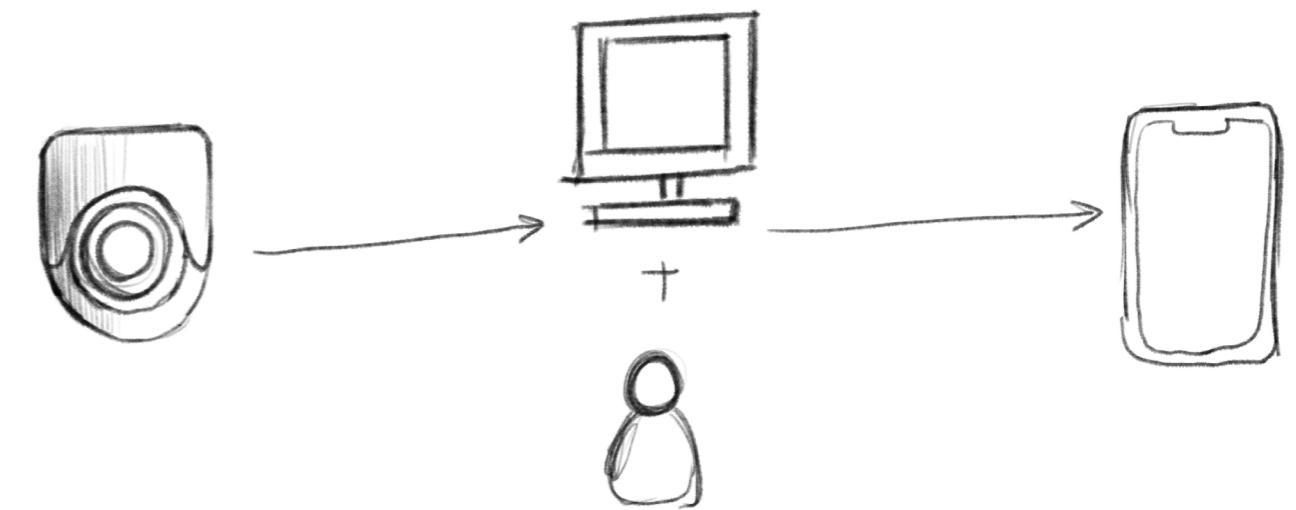
Positioning



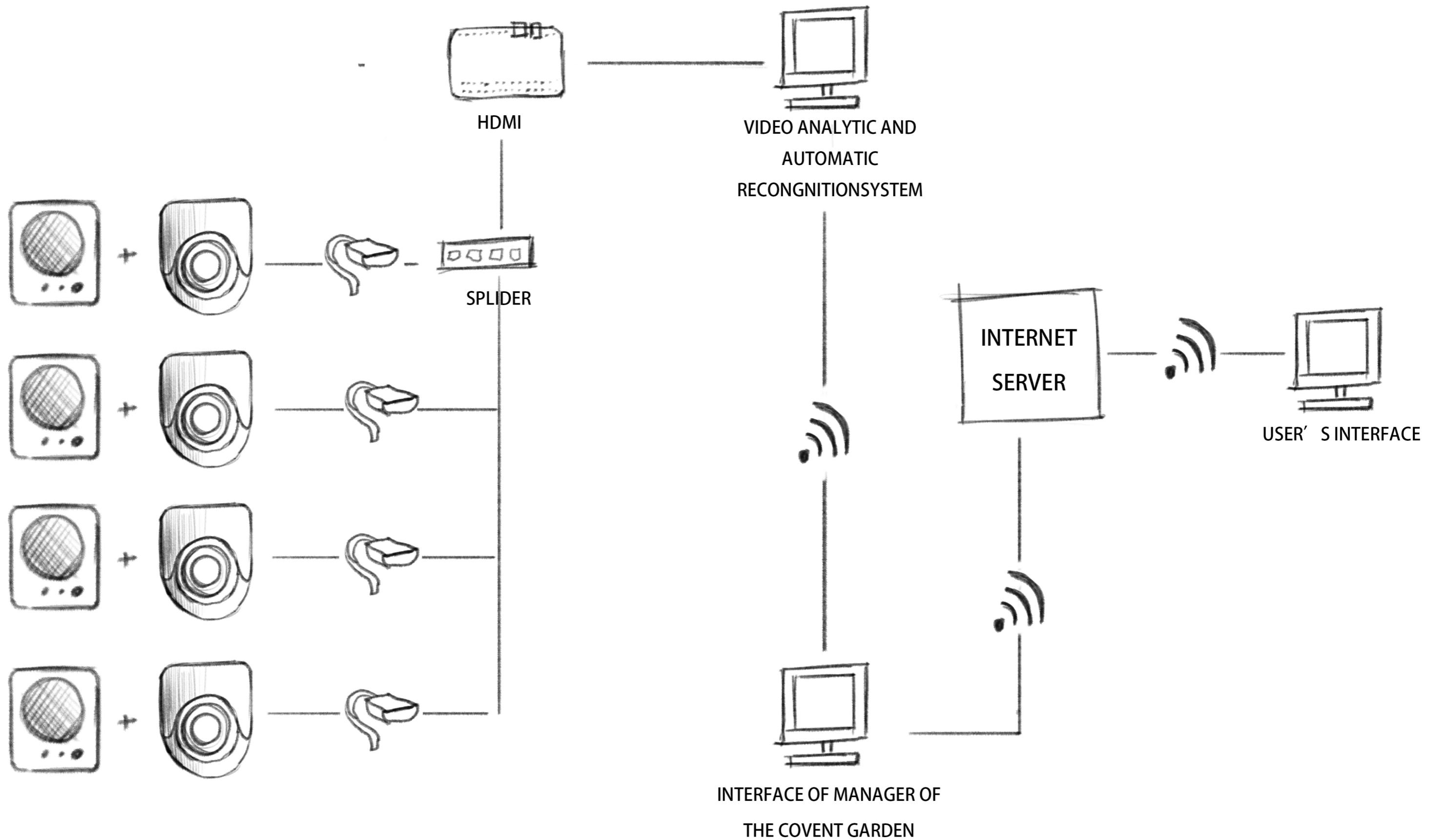
Visiting

Components

- power
- Pc or mobile phone
- Wifi
- Camera
- HDMI cable
- Raspberry Pi
- Internet server
- Memory Card



Screen talking with the Covent
Garden through manager and analytic
system



SCENARIOS

Street performance on the piazza: detecting human density for visitors

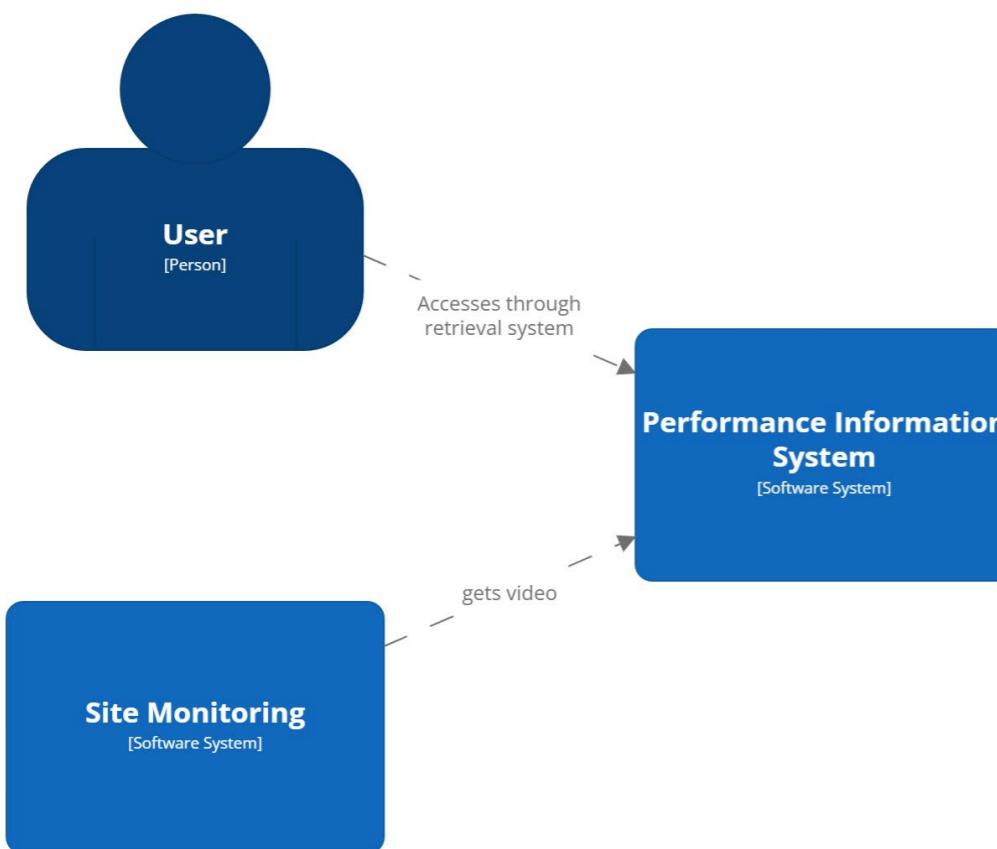


The street performance of music: detecting music type for visitors

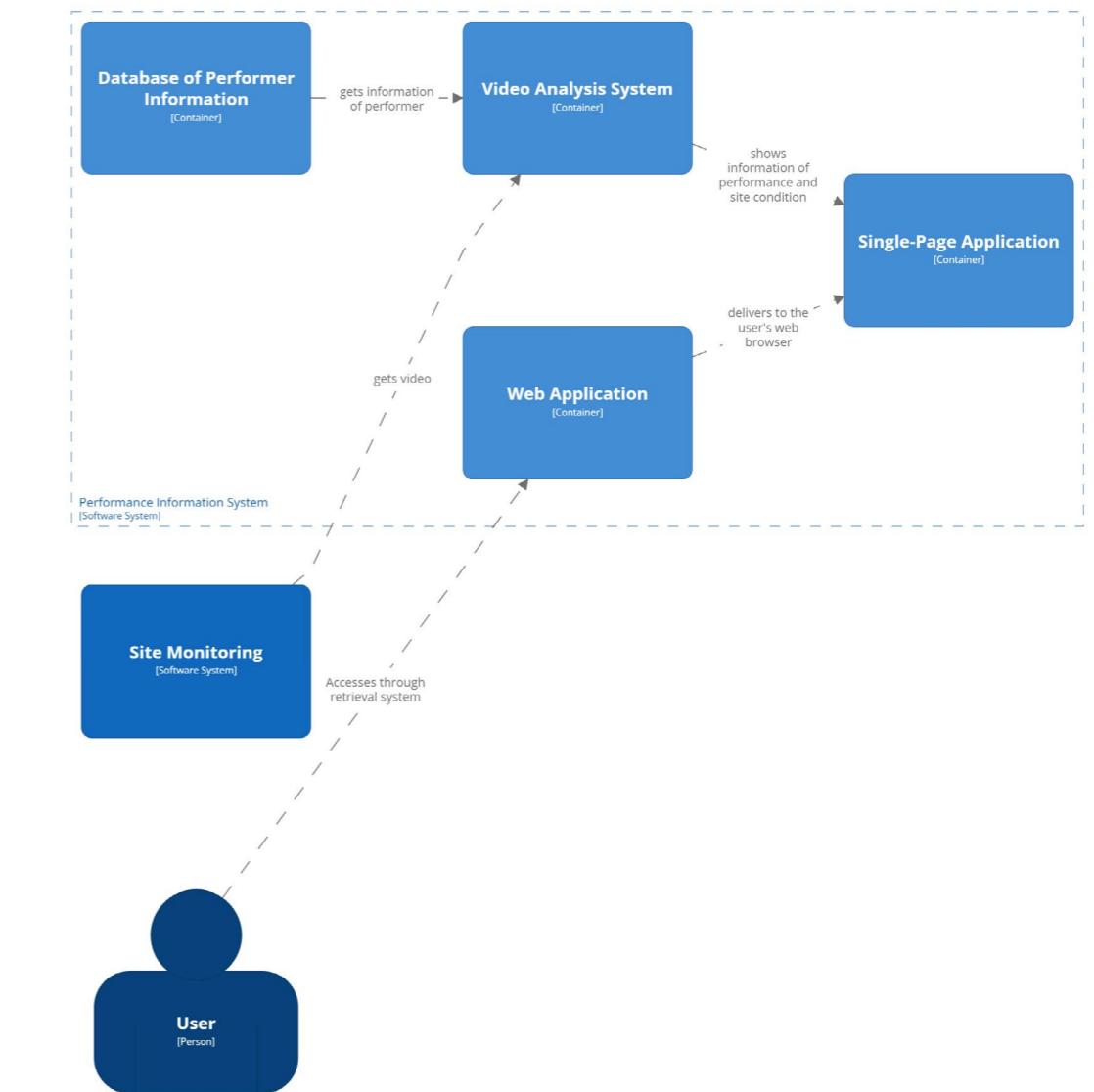


BILL OF MATERIALS

Description	Product Name	Qty	Picture	Supplier	Link	Unit Cost GBP	Total Cost GBP	Total GBP
Camera	Septekon Security Camera	4		Amazon	https://www.amazon.co.uk/Septekon-Security-Surveillance-Waterproof-Detection/dp/B0B5Y7CJMD/ref=sr_1_6?adgrpid=1188572968476127&hvadid=74286010806255&hbmt=be&hvdev=c&hvlocphy=164255&hvnetw=s&hvqmt=e&hvtargid=kwd-74285949494400%3Aloc-188&hydadcr=5055_1860823&keywords=street+cameras&qid=1679557897&s=electronics&sr=1-6	29.99	119.96	
Raspberry Pi	Raspberry Pi 1 Model A+	1		Pihut	https://thepihut.com/products/raspberry-pi-model-a-a-plus?src=raspberrypi	20	20	
HDMI Cable	Twozoh Slim HDMI Cable	1		Amazon	https://www.amazon.co.uk/Twozoh-Cable-Extreme-Flexible-Support/dp/B0B5Q5LS5K/ref=sr_1_22?adgrpid=1180876387080872&hvadid=73804977744864&hbmt=be&hvdev=c&hvlocphy=164255&hvnetw=s&hvqmt=e&hvtargid=kwd-73804911808586%3Aloc-188&hydadcr=5051_2260914&keywords=hDMI-cable&qid=1679559236&sr=8-22&th=1	6.99	6.99	186.94
Memory Card	Kayboo Micro SD Card 512GB Memory Card	1		Amazon	https://www.amazon.co.uk/Kayboo-Memory-Capacity-Performance-Smartphone/dp/B0BTVN7QB6/ref=sr_1_3?adgrpid=1176478340467716&hvadid=73530099506821&hbmt=be&hvdev=c&hvlocphy=164255&hvnetw=s&hvqmt=e&hvtargid=kwd-73530032698686%3Aloc-188&hydadcr=5058_2260900&keywords=large+memory+card&qid=1679559644&sr=8-3	39.99	39.99	



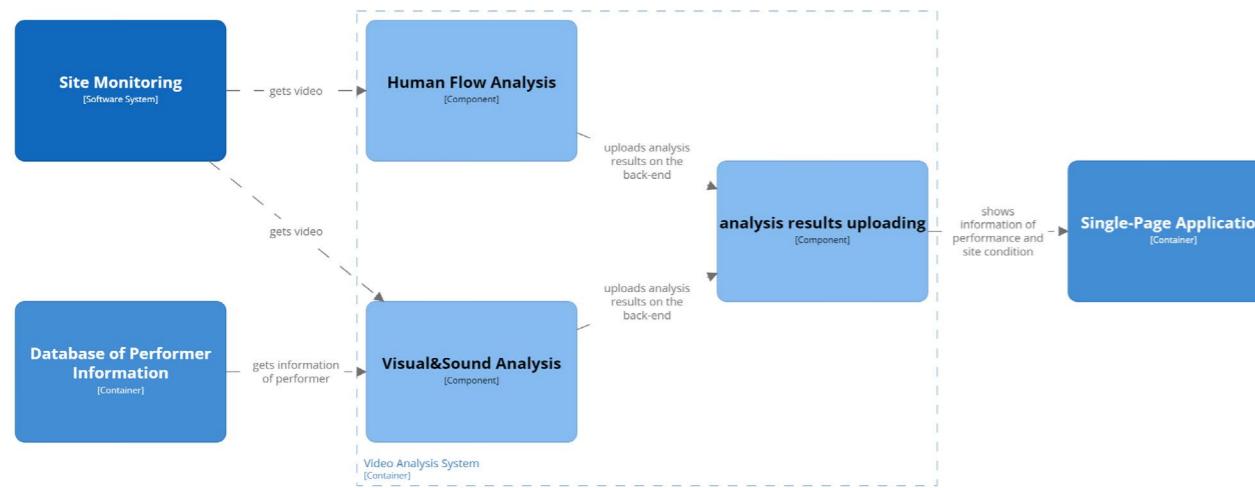
[System Context] Performance Information System
Monday, February 27, 2023 at 12:35 AM Greenwich Mean Time



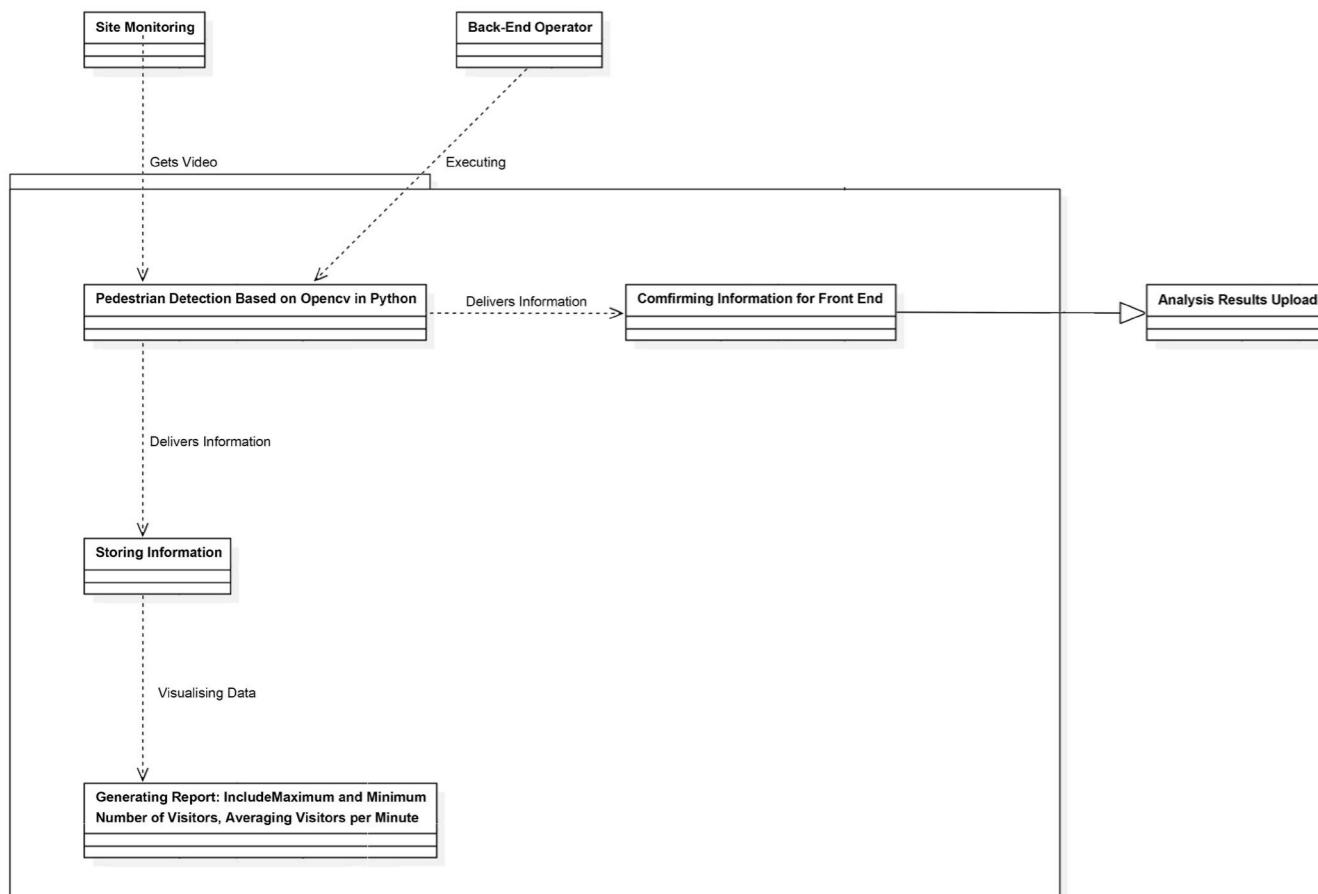
[Container] Performance Information System
Monday, February 27, 2023 at 12:35 AM Greenwich Mean Time

CONTEXT

CONTAINER



COMPONENT



CODE

Libraries

ml5: Human Recognition
web API: Music Recognition
Tensorflow: Machine Learning

Languages

Web Development: HTML, CSS, JavaScript
Site Real-Time Analysis: Tensorflow based on JavaScript

COMPONENT: HUMAN DETECTION

```

1 let video;
2 let detector;
3
4 function preload(){
5   detector = ml5.objectDetector('cocossd');
6 }
7
8 function gotDetections(error, results){
9   if(error){
10     console.error(error);
11   }
12   console.log(results);
13   for(let i = 0; i<detected.length; i++){
14     let object = detected[i];
15     stroke(200, 50, 50);
16     strokeWeight(4);
17     noFill();
18     rect(object.x, object.y, object.width, object.height);

```

```

19   noStroke();
20   fill(255);
21   textSize(24);
22   text(object.label, object.x+8, object.y+12);
23 }
24 odetector.detect(video, gotDetections);
25 }
26
27 function setup() {
28   createCanvas(1080, 720);
29   video = createCapture(VIDEO)
30   video.size(1080,720)
31   detector.detect(img, gotDetections);
32 }
33
34 function draw(){
35   image(video, 0, 0)
36 }

```



COMPONENT: MUSIC RECOGNITION

application programming interface: Web Api

```
{
  "status": "success",
  "result": {
    "artist": "Klaus Badelt",
    "title": "He's a Pirate (From Disney's 'Pirates of the Caribbean: The Curse of the Black Pearl')",
    "album": "NOW That's What I Call Disney",
    "release_date": "2017-11-03",
    "label": "Now! Music",
    "timecode": "00:53",
    "song_link": "https://lis.tn/VARK0",
    "apple_music": {
      "previews": [
        {
          "url": "https://audio-ssl.itunes.apple.com/itunes-assets/AudioPreview125/v4/56/b2/96/56b29652-c654-e9e3-ee2d-1a363c94f500/mzaf_4080875012776156430.plus.aac.p.m4a"
        }
      ],
      "artwork": {
        "width": 3000,
        "height": 3000,
        "url": "https://is4-ssl.mzstatic.com/image/thumb/Music118/v4/53/0d/17/530d1763-33c4-a88d-d22f-364dab1b0ee6/00050087397852.rgb.jpg?w{x}h{y}bb.jpg",
        "bgColor": "#72d0f4",
        "textColor1": "#000000",
        "textColor2": "#3d1d09",
        "textColor3": "#162930",
        "textColor4": "#484138"
      },
      "artistName": "Klaus Badelt",
      "url": "https://music.apple.com/us/album/he-s-a-pirate-from-pirates-of-the-caribbean/1423241035?app=music&at=1000l33QU&i=1423242457&mt=1",
      "discNumber": 1,
      "genreNames": [
        "Soundtrack",
        "Music"
      ],
      "durationInMillis": 90533,
      "releaseDate": "2003-01-01",
      "name": "He's a Pirate (From \"Pirates of the Caribbean: The Curse Of the Black Pearl\")",
      "isrc": "USWD10321341",
      "albumName": "Disney Magical Musical Passport",
      "playParams": {
        "id": "1423242457",
        "kind": "song"
      },
      "trackNumber": 21,
      "composerName": "Klaus Badelt, Hans Zimmer & Geoff Zanelli"
    },
    "formats": [
      "ZM",
      "CD",
      "CG",
      "IQ",
      "LY",
      "VE",
      "ET",
      "XK"
    ],
    "disc_number": 1,
    "duration_ms": 90426,
    "explicit": false,
    "external_urls": {
      "spotify": "https://open.spotify.com/track/08QaHlMPWu05PUxjl61bXn"
    },
    "href": "https://api.spotify.com/v1/tracks/08QaHlMPWu05PUxjl61bXn",
    "id": "08QaHlMPWu05PUxjl61bXn",
    "name": "He's a Pirate",
    "preview_url": "https://p.scdn.co/mp3-preview/d12d9714a53b450eba3d0b6ed1de17aab1f82d75?cid=e44e7b8278114c7db211c00ea273ac69",
    "track_number": 15,
    "uri": "spotify:track:08QaHlMPWu05PUxjl61bXn"
  }
}
```

