Automated Registering System through Facial Recognition

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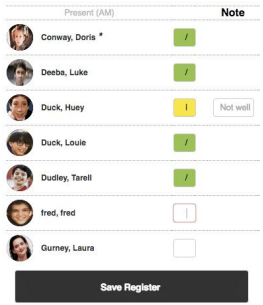
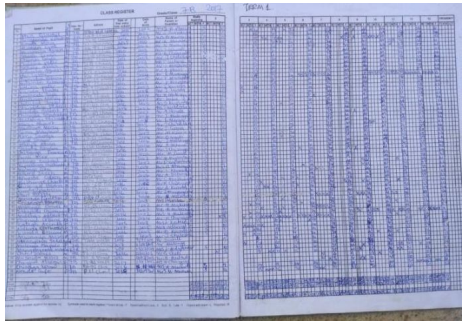
Introduction

Registers often take a long time to complete…





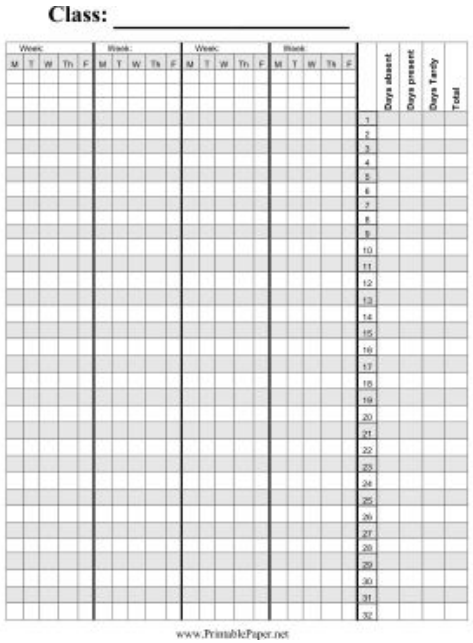
Wouldn’t it be great if there was an automated way of doing it?

Objective/Background/Motivation

Classrooms + Traditional Attendance Methods

Time consuming & sometimes teachers forget to do them (leading to absences for students)

This is the case for most schools (especially those that have paper attendance)



	A	B	C	D	E	F	G	H
1	Attendence							
2	Names	Total	Wed 2/1/17	Thu 2/2/17	Fri 2/3/17	Mon 2/6/17	Tue 2/7/17	Wed 2/8/17
3	Student1	3	1	1	1			
4	Student2	3	1	1	1			
5	Student3	3	1	1	1			
6	Student4	3	1	1	1			
7	Student5	2	1	1				
8	Student6	2	1	1				
9	Student7	3	1	1	1			
10	Student8	2		1	1			
11	Student9	2		1	1			
12	Student10	3	1	1	1			
13	Student11	2	1	1				
14	Student12	2	1	1				

Target Market

Normally, in secondary schools, we have classes of size 30+.

Assuming that manually registering one student takes 2-3 seconds, completing the register for a single class can take 1-2 minutes. This means that around ~3% of class time is wasted on doing the register in classes.

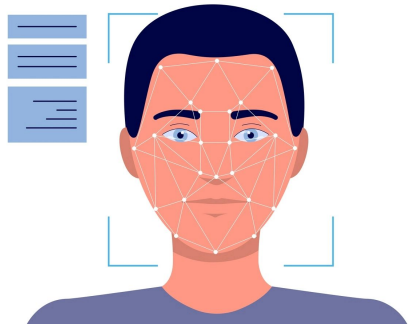
During exams, this problem gets worse as additional time may be wasted trying to locate missing students.

There are more than 400 secondary schools in Hong Kong. That is our target market.

Existing Solutions

There is no existing solution which uses facial recognition.

A study in South Africa attempted to use radio frequency signals emitted from the students' phones. It is 'full-proof', however, requires access to the students' phones.



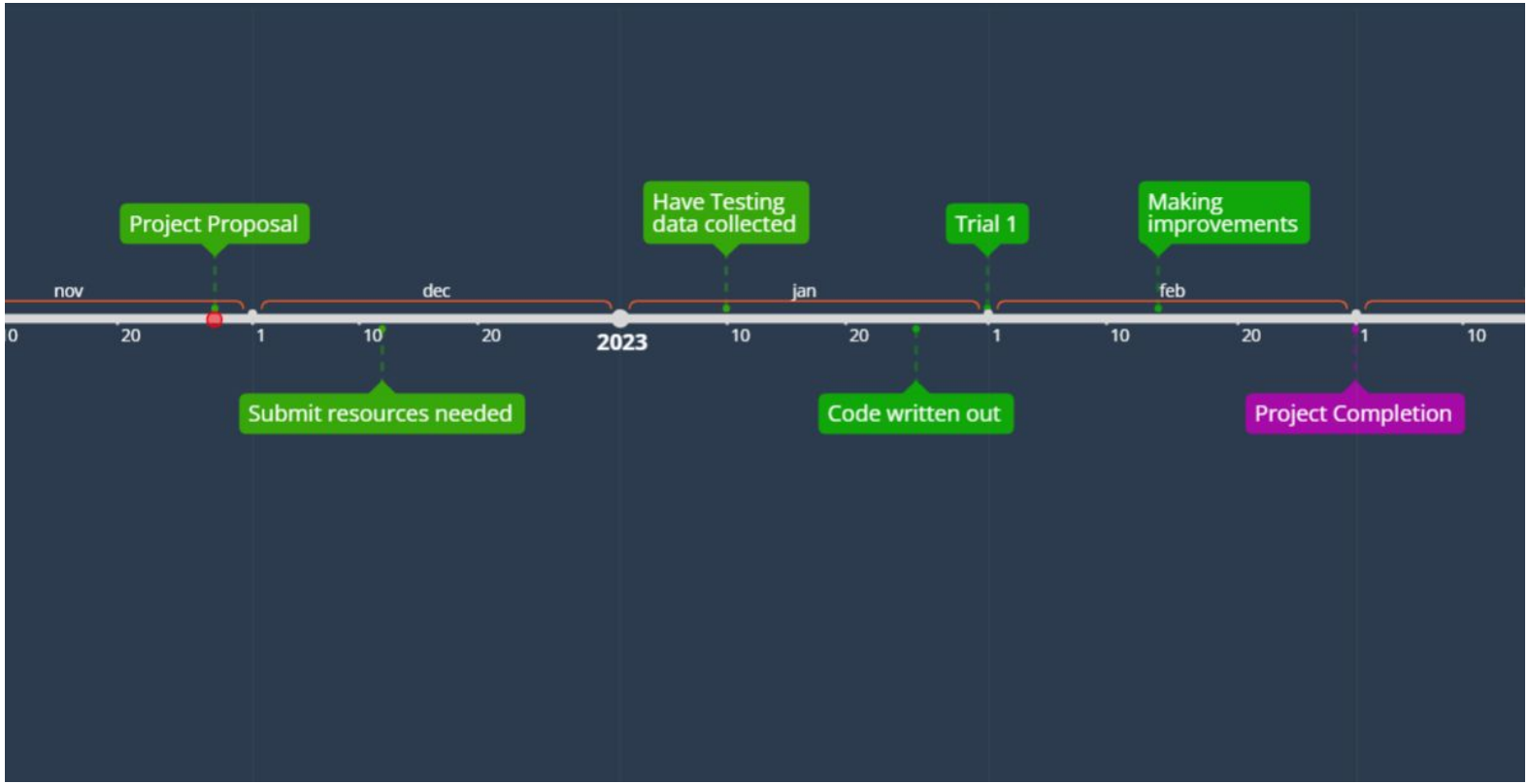
Our Solution

- We can use facial recognition, facing the door of every classroom, to automatically recognise and register students
- The cameras will be activated 5 minutes before and after the start of lessons enabling all students to be recorded efficiently.

(1) Facial recognition to identify students

based on facial features

Timeline


Project Proposal
Have Testing data collected
Trial 1
Making improvements
nov
dec
jan
feb
0
20
1
10
20
2023
10
20
1
10
20
1
10
Submit resources needed
Code written out
Project Completion

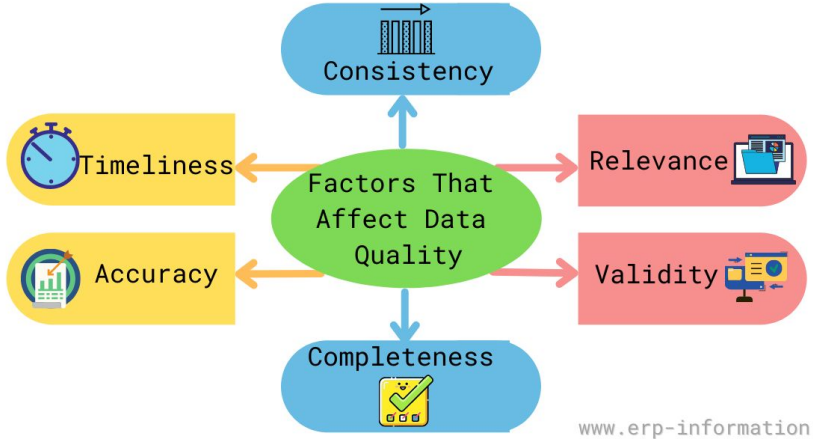
Resources needed

- Cameras that can send live feed to a device
- Facial recognition software
  - We can code this by using what we have learnt during the course
- Possibly need a database of each students facial features from multiple angles to improve accuracy of algorithm.

Possible Issues

- Privacy issues
  - Camera will be recording for 10 minutes
  - Where will the database of student faces be stored (must be encrypted)

- Accuracy
  - since students will be moving and may not look directly at the camera
  - Multiple cameras?



Sources

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