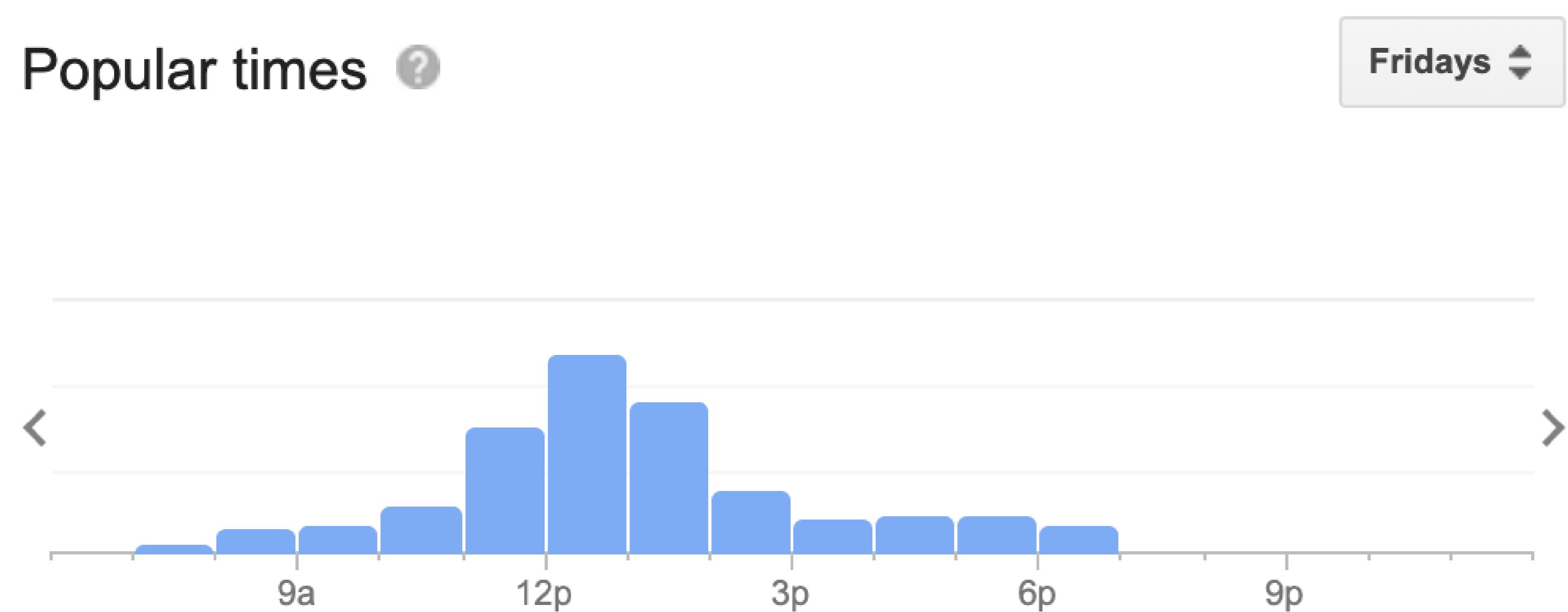


# DIGITAL WORLD 1D FINAL PROJECT

# CROWD CONTROL

## PROBLEM

Popular times

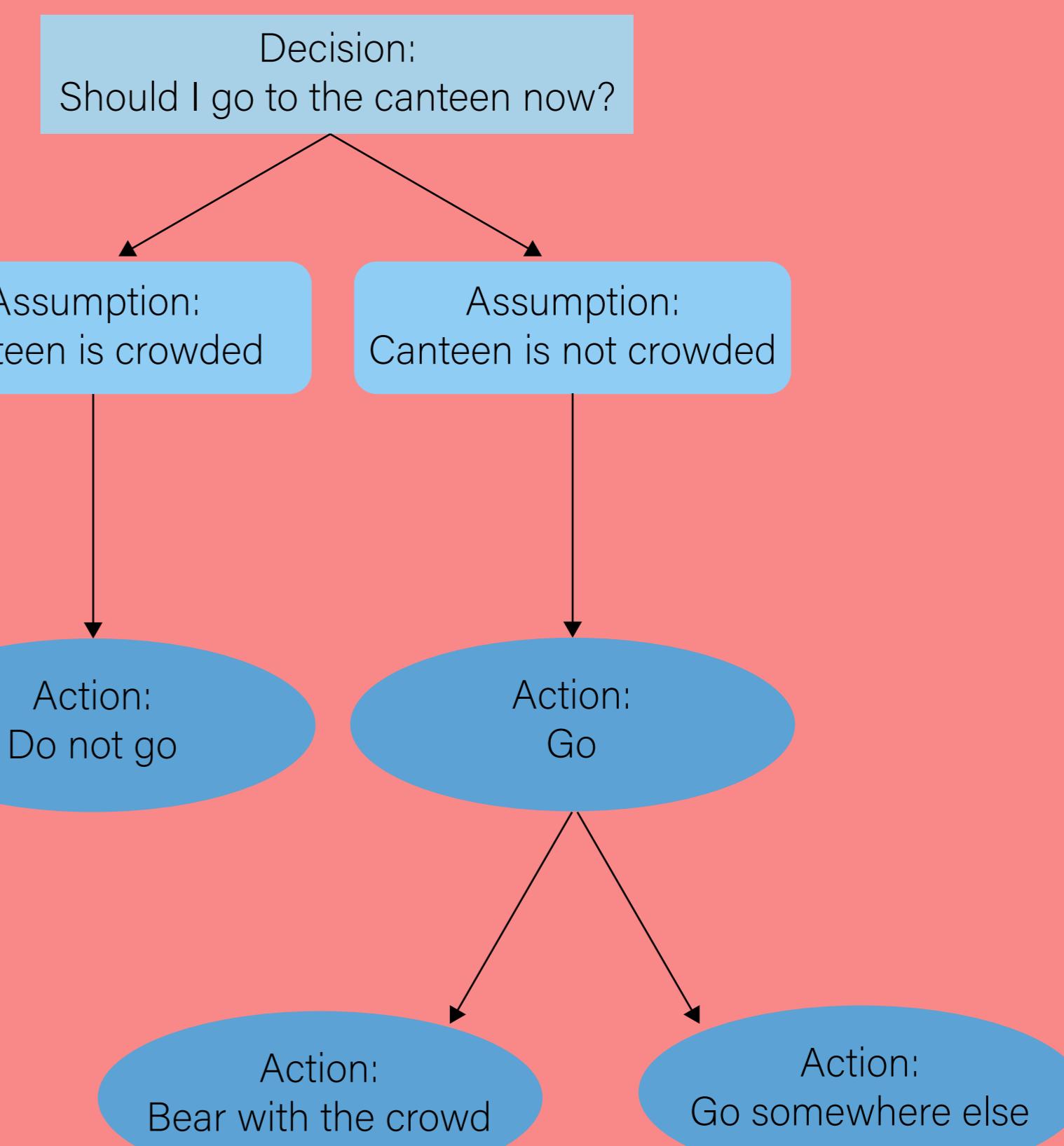


Plan your visit

People typically spend **25 min to 1 hr** here

- People do not know whether the canteen is crowded without being physically there
- Peak periods can be predicted but there is no real time data

## CURRENT SOLUTIONS

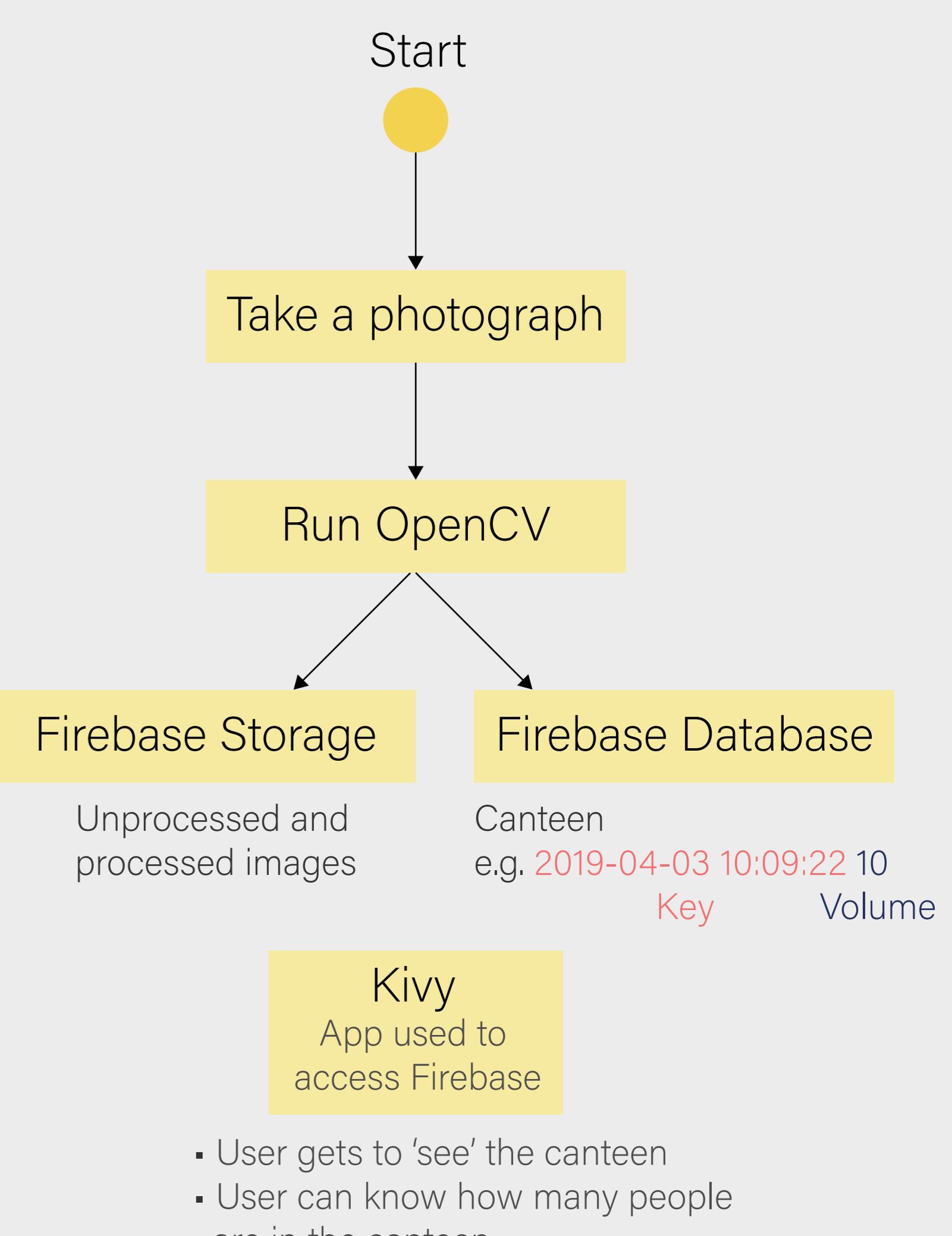


- Bear with the crowd
- Text friends who are in the canteen to check its status
- Avoid the canteen during peak period (even though it may not actually be crowded)

## SYSTEM DIAGRAM

1. Crontab is used to execute code every 3 minutes

- a. Take a photograph and save it to the desktop as canteenpic.jpeg
- b. Run the program named crowdcontrol.py



2. Main program (crowdcontrol.py)

- a. Set-up Firebase
  - i. Establish connections with Firebase database = firebase.database()
  - storage = firebase.storage()
- b. OpenCV
  - i. Get image from desktop (canteenpic.jpeg)
  - ii. Process image with HOG
  - iii. Send a processed image to the desktop (processed\_canteenpic.jpeg)

c. Upload to Firebase

- i. Upload both the processed and unprocessed photographs to the Firebase storage (canteenpic.jpeg and processed\_canteenpic.jpeg)
- ii. Upload total count to the Firebase database

3. Kivy

- a. User can access images and data from Kivy

## APP



Picture Taken : 2019-04-22 08:27:55

No. of people : 11

## BENEFITS

- allows people to check the status of the canteen without physically going there
- make quicker decisions regarding their meals
- uses smart technology to save time and effort