

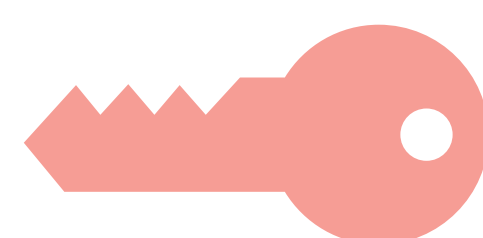


PROJECT BRIGHT SPACE



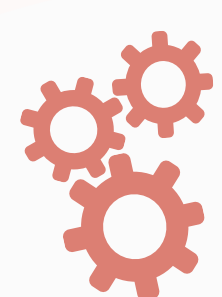
Problem

Finding conducive places to study is often a headache for students, especially during the exam period. Our project seeks to make known the availability of common, good study spaces (ie. SUTD Library) through the use of lights and an application.



Solution

To solve this problem, we decided to make use of sensors to detect the presence of people in study spaces. This will change the **colour** of a light near the study space, indicating that the study space is occupied. Through this, students can see and know whether a study space they plan to go to is occupied from a distance, saving themselves the effort and the time spent in walking over.

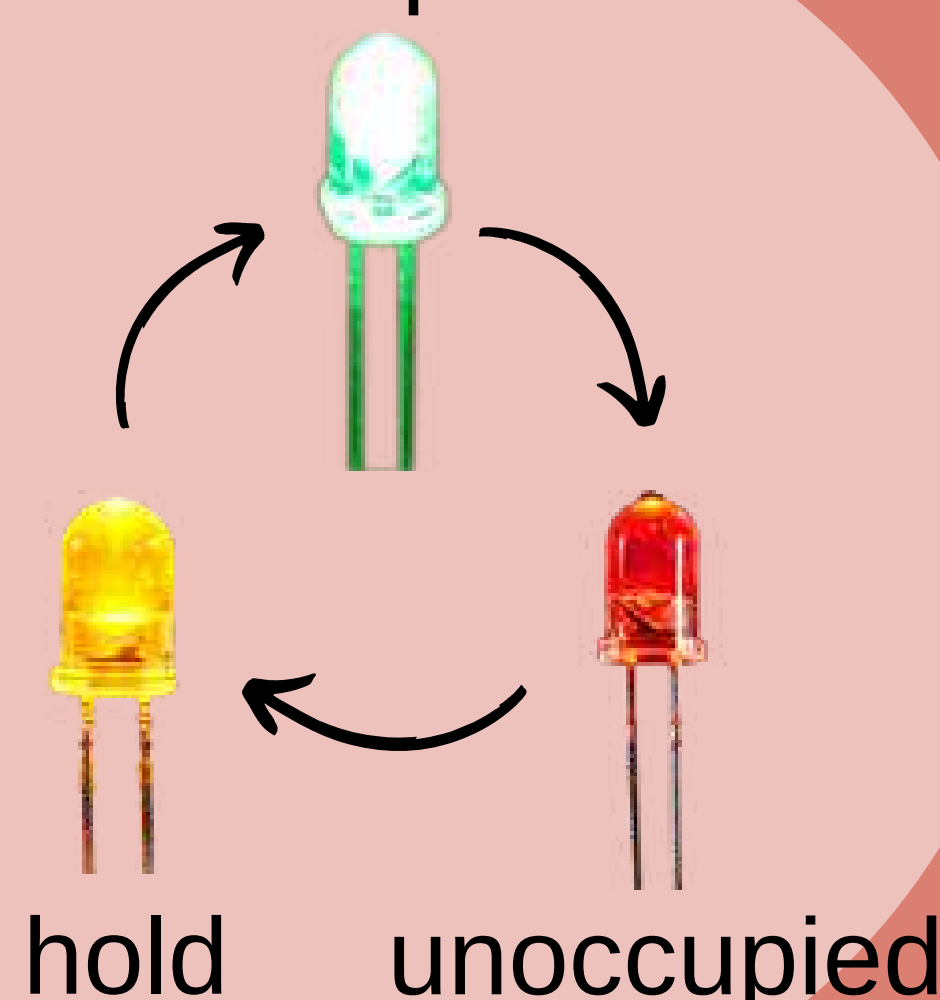


Mechanisms

The Ultrasound sensor (HC-SR04) is connected to the Raspberry Pi. When it registers a person, the data is uploaded to Firebase. The mobile application, when opened, accesses the information on Firebase to fill up the contents of its screen. The user can refresh the screen to check whether a seat on a particular floor is available or not.

In its default state, the green LED light is lit. When a person occupies the seat, the red LED is turned on, and the green LED off. When a button is pressed, the other 2 LEDs are disabled, and a yellow LED light is turned on

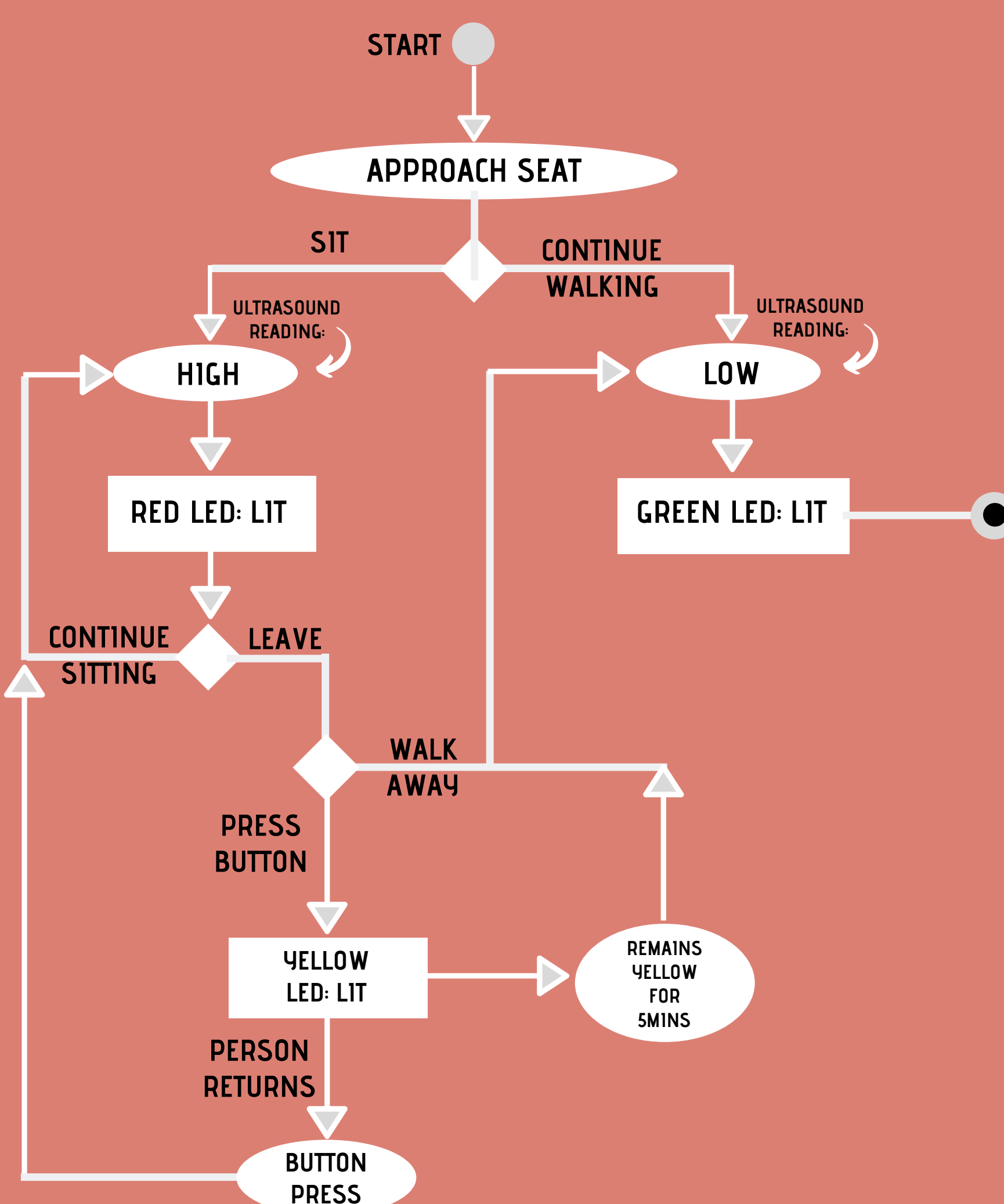
occupied



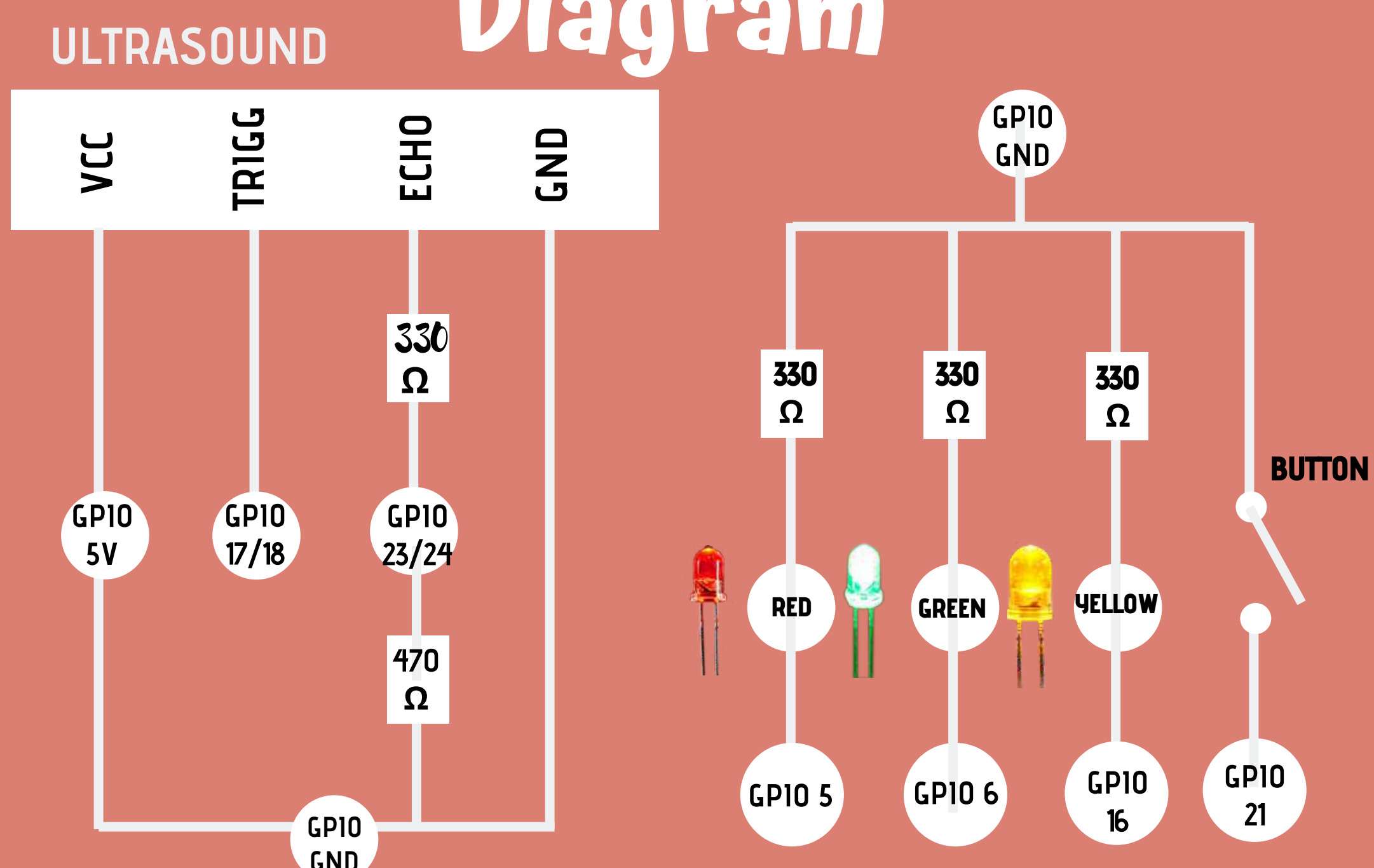
Do I need to walk?

Well, you are in luck, for we have a mobile application! With the mobile application, you may check the availability of seats, saving you the time and effort instead of walking over to check yourself.

Activity Diagram



Component Circuit Diagram



Team

See Yong Chun	1003485
Kwa Li Ying	1003833
Ng Jo-Shen	1003509
Wong Tin Kit	1003331

Be back in 5!



Occupied



Unoccupied



cases