Smart Attendance and Student/Teacher Companion Using Beacons

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Problem Statement

- **Wastage of time on attendance:**

  Consider this, a normal day has around 6 periods, every period is of 1 hr, the first or last 2-3 min is used up for taking attendance.So, in a day we lose around half an hour of learning time and more when calculated for months.

- **Lack of efficiency in taking attendance**
- **Less interaction between students and teachers**

Objectives

- To implement attendance system using beacon technology and IOT.
- To implement interactive environment between student and teachers.
- To help students to ask live questions to teacher anonymously.
- Access to live timetable & relevant information for students.

Existing System

- The existing systems of attendance includes the age old method of roll call system where a person has to call each and every student one by one. This consumes time as well as efficiency is also less.
- Some other advancements include the biometric systems like fingerprint, facial recognition method etc. Despite the fact that these are modern technologies but still these remain imperfect due to time utilization and human involvement.
- The means of interaction between students and teachers is only verbal .

Beacons

Proposed System

- Teachers hosts the session for the appropriate class
- All the students inside the Beacon range would be able to join the session from the student companion app
- The overhead camera would do head detection and send the processed image to the student companion app to enter their exact location in class to remove any attendance malpractices.
- Doubts can be queried anonymously in the live session to get clarified

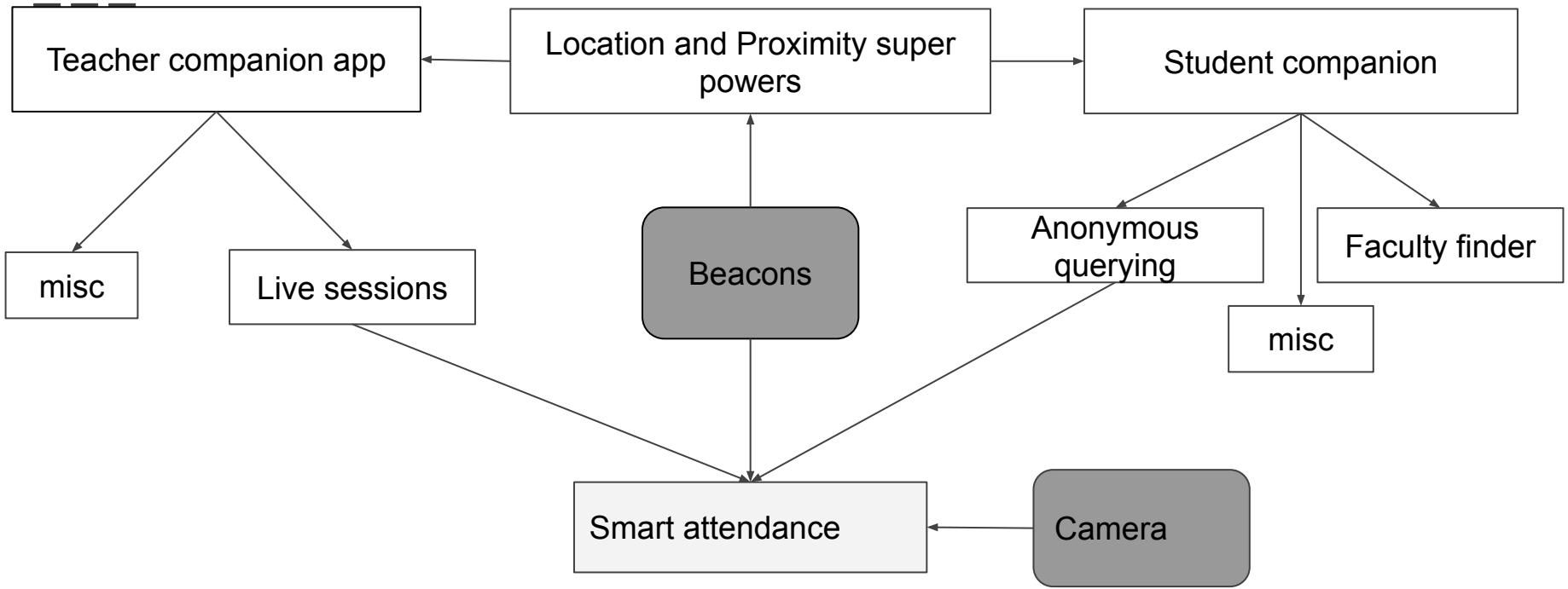
Location and proximity superpowers

- Beacons could be set static at important parts of the college and can be programmed in n ways by other developers to harness proximity superpowers to improve and solve real life problems.

- One of the applications that would be implemented to make use of these beacons is the faculty finder feature to pinpoint the location of faculty in the campus.

- Instead of spying or draining faculty’s mobile battery and privacy,we use the proximity beacons that are attached all around campus to know the last proximity sensed beacon area

Architecture diagram



Budget

ITEMS	AMOUNT
Raspberry pi	**4,000**
Beacons	**7,500**
Fish eye camera	**7,500**
Google cloud services	**3,000**
Miscellaneous	**2,000**
Total	**25,000**

Thank You !!!!!