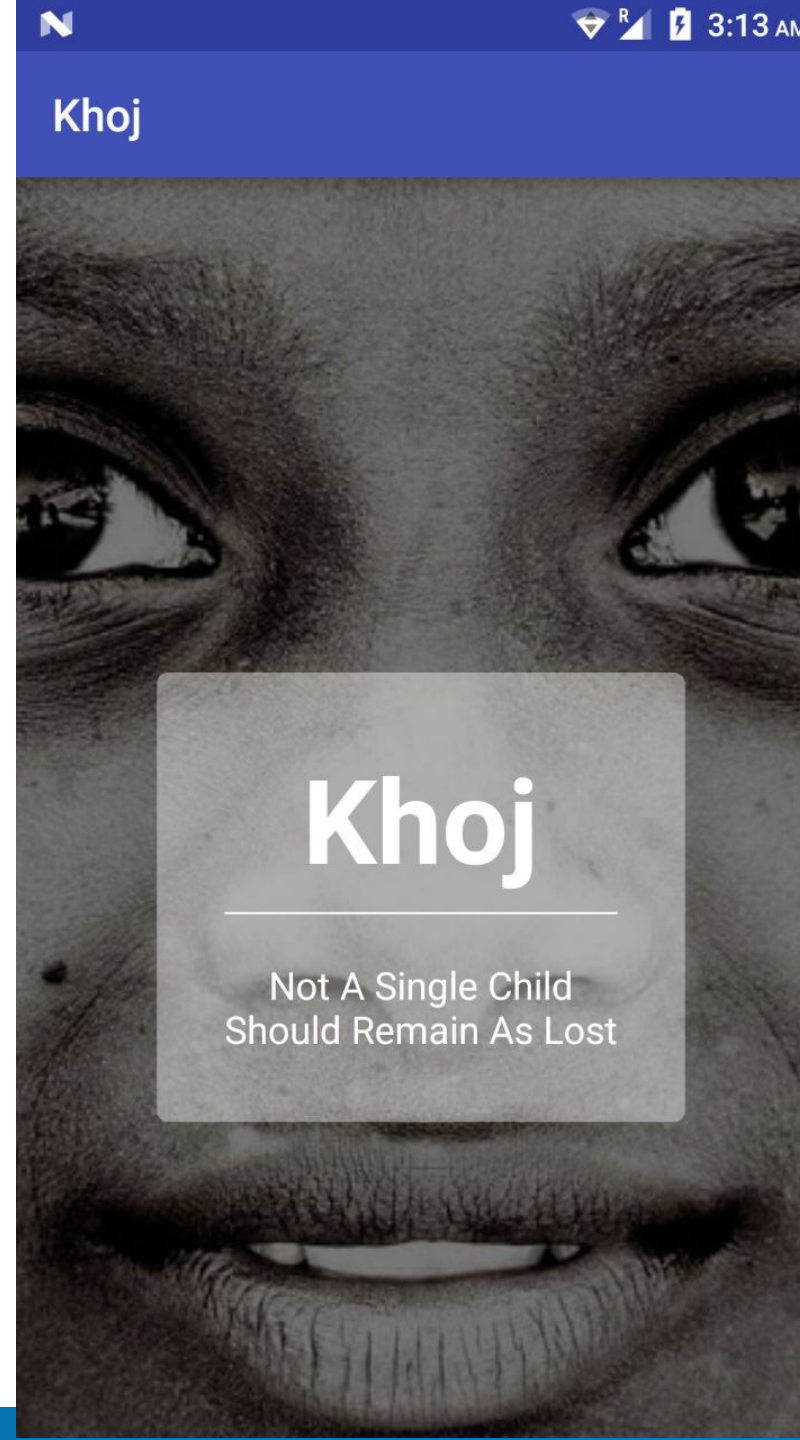# Capgemini

TECH CHALLENGE
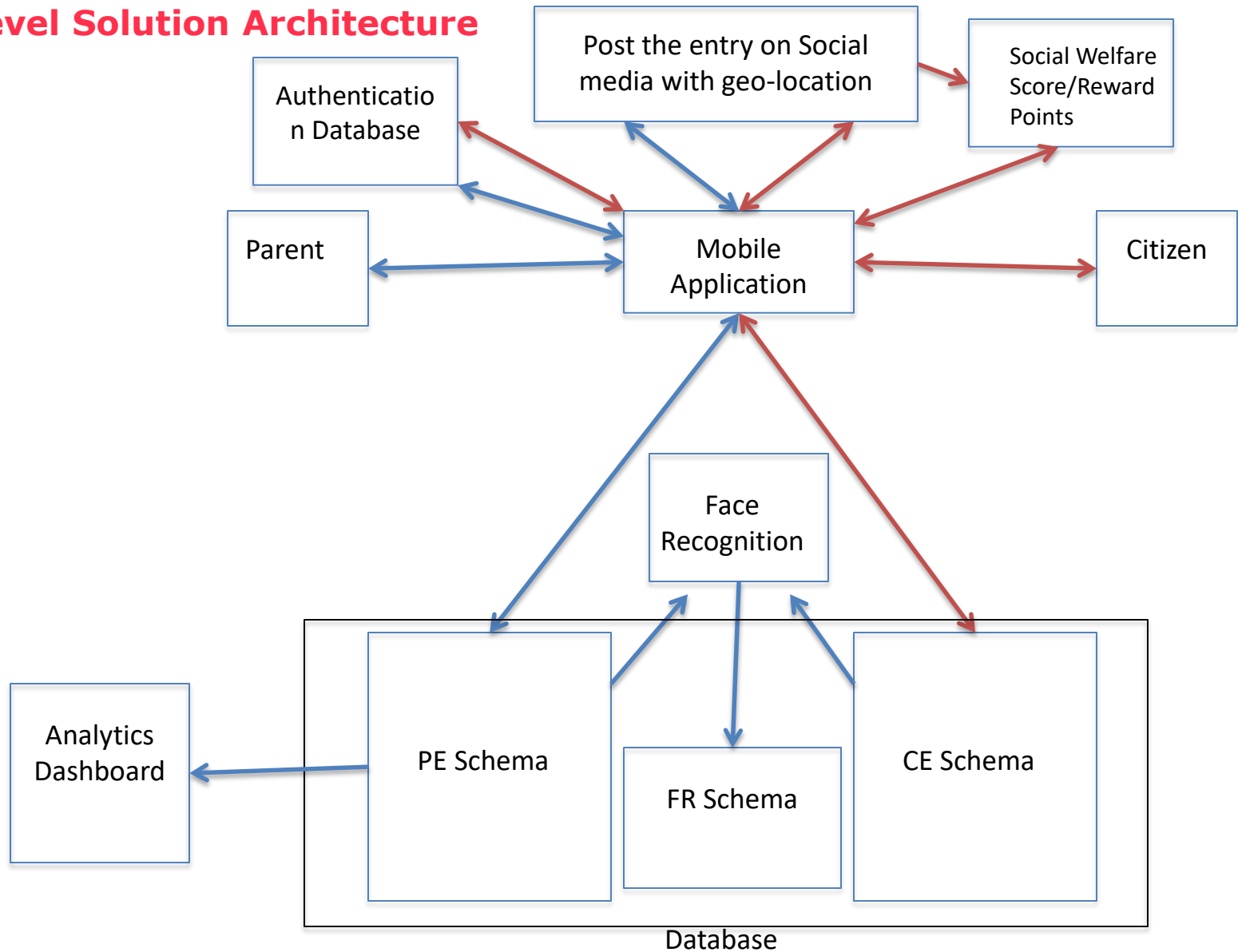
Team Challenge
Hackslash

Problem Statement

- There is a lack of record keeping of children gone missing in India
- The common people are most of the times unaware of such situations and even if want to help, have no platform/portal to share First Hand Information
- There is no platform which connects the respondents to the guardians of these missing children
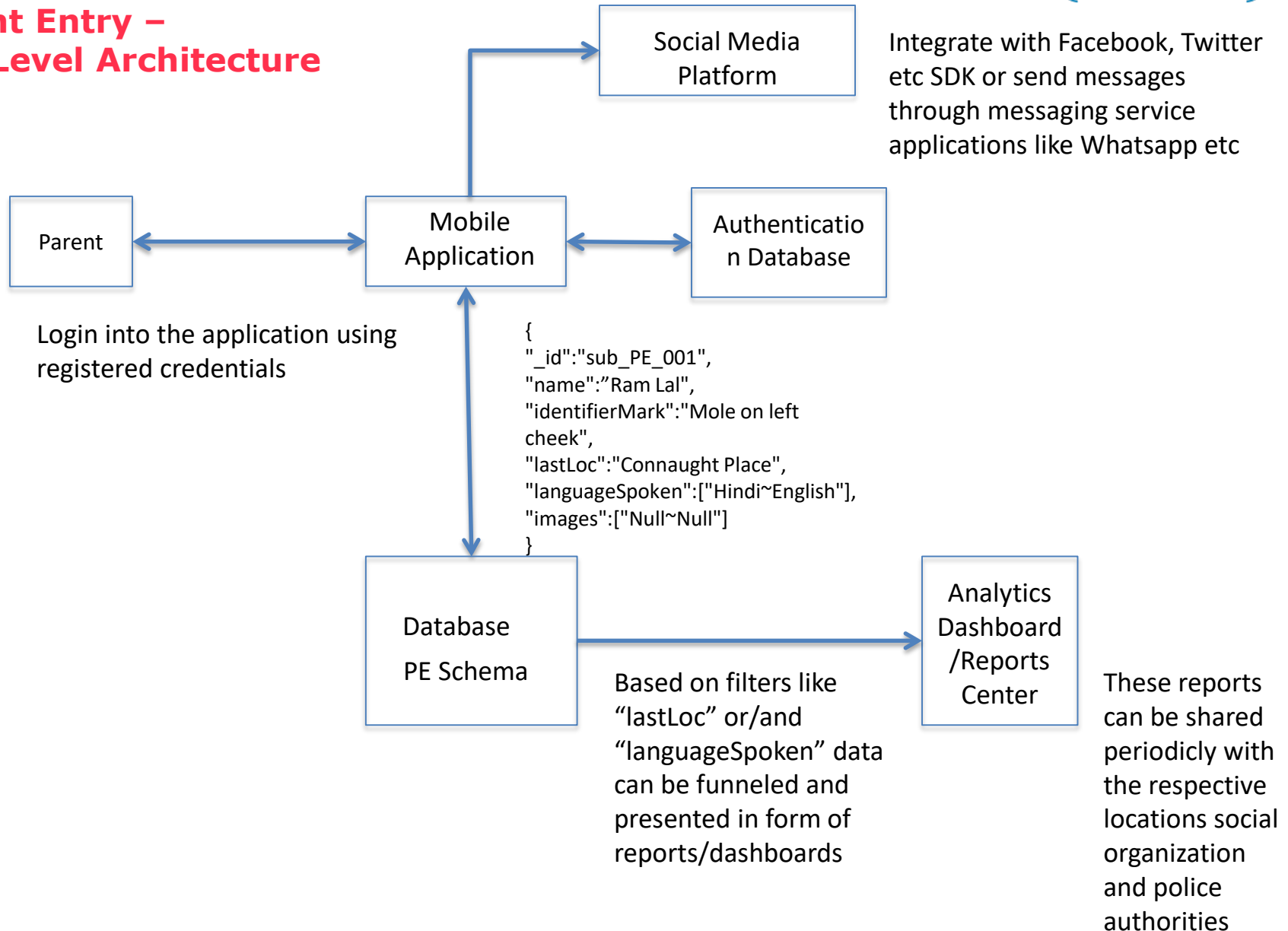
Proposed Solution – "Khoj"

- A platform which brings the concerned parties, parents or guardian in contact with the First Information Record posted/entered by a Citizen which may help in locating a lost child

- Use this captured data to generate an Analytics Dashboards which will show the information in report based format which is sharable with the relevant authorities

- Use advanced facial recognition to match photographs of the same individual taken at different times in order to help identify victims of Human Trafficking and other crimes
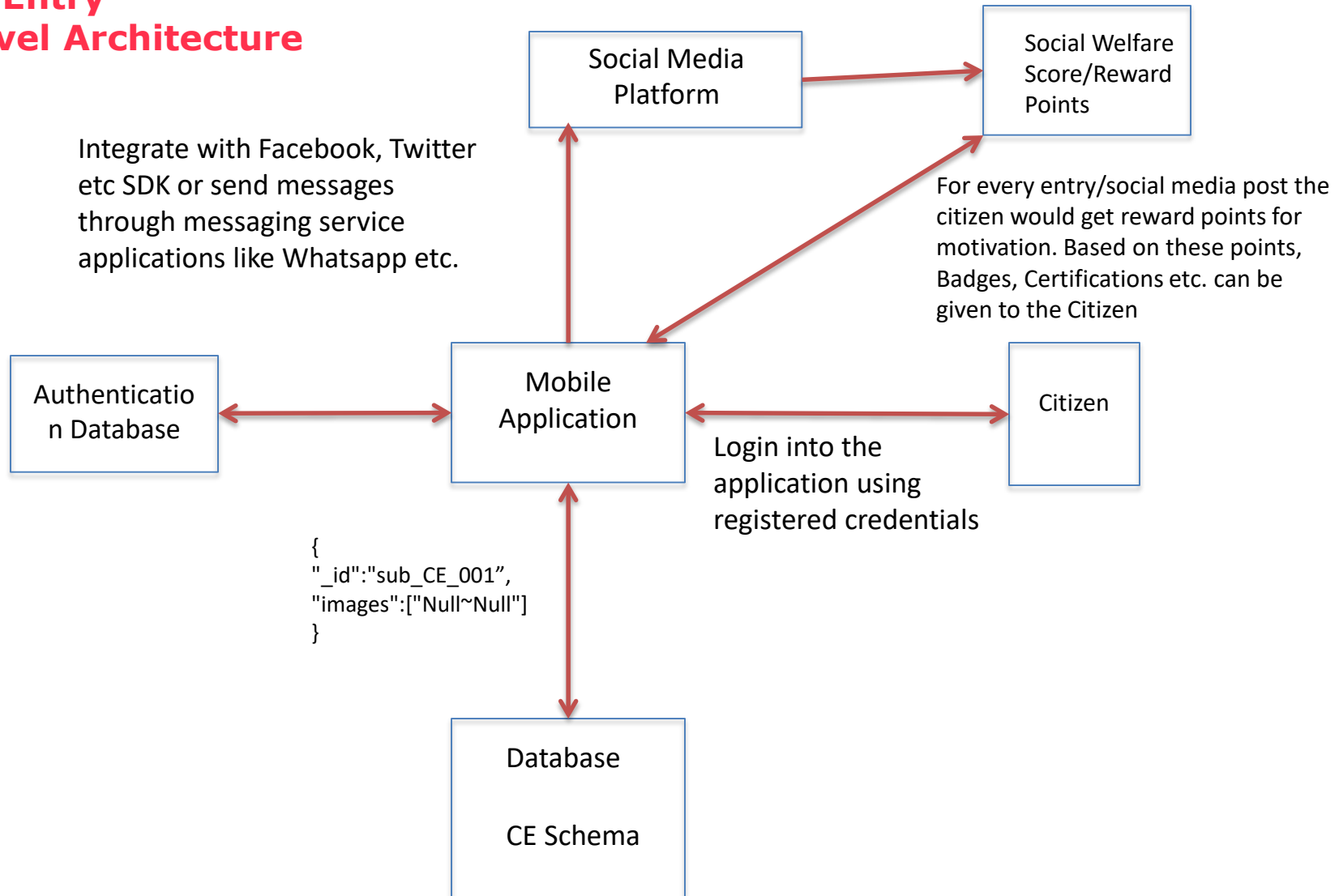
High Level Solution Architecture

Parent Entry – Low Level Architecture

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TECH CHALLENGE 5.0

Social Media Platform

Integrate with Facebook, Twitter etc SDK or send messages through messaging service applications like Whatsapp etc

Parent

Mobile Application

Authentication Database

Login into the application using registered credentials

```
{
"_id":"sub_PE_001",
"name":"Ram Lal",
"identifierMark":"Mole on left cheek",
"lastLoc":"Connaught Place",
"languageSpoken":["Hindi~English"],
"images":["Null~Null"]
}
```

Database PE Schema

Analytics Dashboard /Reports Center

Based on filters like "lastLoc" or/and "languageSpoken" data can be funneled and presented in form of reports/dashboards

These reports can be shared periodicly with the respective locations social organization and police authorities

Citizen Entry –
Low Level Architecture

Social Media Platform

Social Welfare Score/Reward Points

Integrate with Facebook, Twitter etc SDK or send messages through messaging service applications like Whatsapp etc.

For every entry/social media post the citizen would get reward points for motivation. Based on these points, Badges, Certifications etc. can be given to the Citizen

Authentication Database

Mobile Application

Citizen

Login into the application using registered credentials

{
"_id":"sub_CE_001",
"images":["Null~Null"]
}

Database
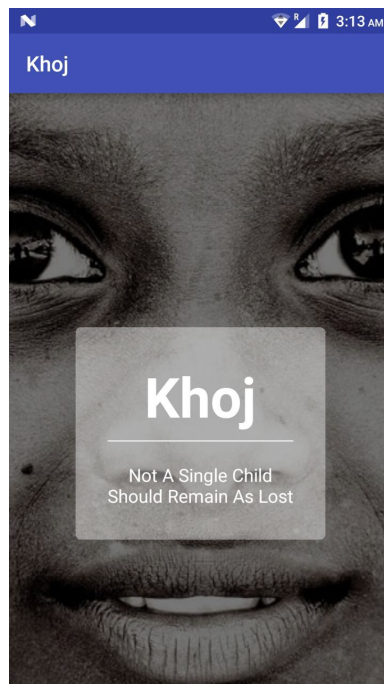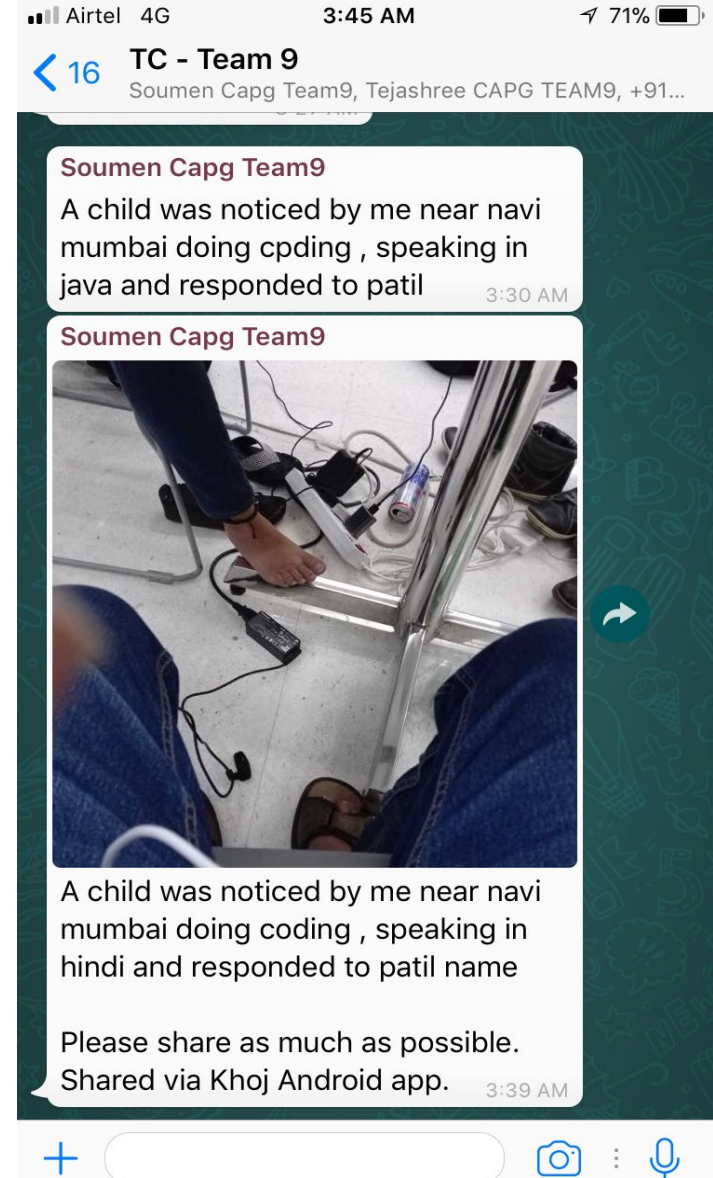
CE Schema

Key Features of the Application

- Motivational social score –
  In order to motivate citizens to report incidents, there is a social welfare score which would be updated in the application

- Analytics Dashboard with reporting functionalities –
  Weekly/monthly reports can be triggered to local authorities / social groups in   nearby vicinity

- Multi-lingual support for the application

Key Features of the Application – Continued

- Inbuilt functionality to send messages through messaging service based applications like Whatsapp etc.

Future scope of the Application

- Incorporate Retina Scan functionality
- Integrate with CISCO Video Surveillance like API which is available in India for real time video surveillance

- As load on the application increase the following changes must be made:
    1. Convert MongoDB from stand alone mode to Replication mode
       Replication set must have, Primary Node, Secondary Node and Arbiter Node with near real time replication happening
    2. Convert PostgreSQL from standalone mode to Hot Standby mode
       There should be a Primary Node and a secondary node with near real time replication happening

Hardware Specification/Component/Tools used

- MongoDB – Data storage Database
- Salesforce – Report Center development
- PostgreSQL – Authentication Database
- Google Analytics – Analytics Dashboard development
- VM – Virtual Machines with Hyper threading enabled (for higher throughput) for easy scalability
- Internet Access - Notification sending and social media posts
- Android Studio – Mobility application development

Why should your solution be selected?

- This solution addresses all the necessary questions posed in the problem statement
- Elegant solution to address the communication gap between reporter and guardian
- Open source software are used which minimize the cost of the solution
- The solution also spreads the relevant information using social media which in-turn means free publicity
- Solution leads to actionable data gathering and generation which can be later on used for advanced analytics dashboards and predictions

Thank You

Team Name: Hackslash