GPS-Based Attendance System for Road Side Construction Sites.

Team members

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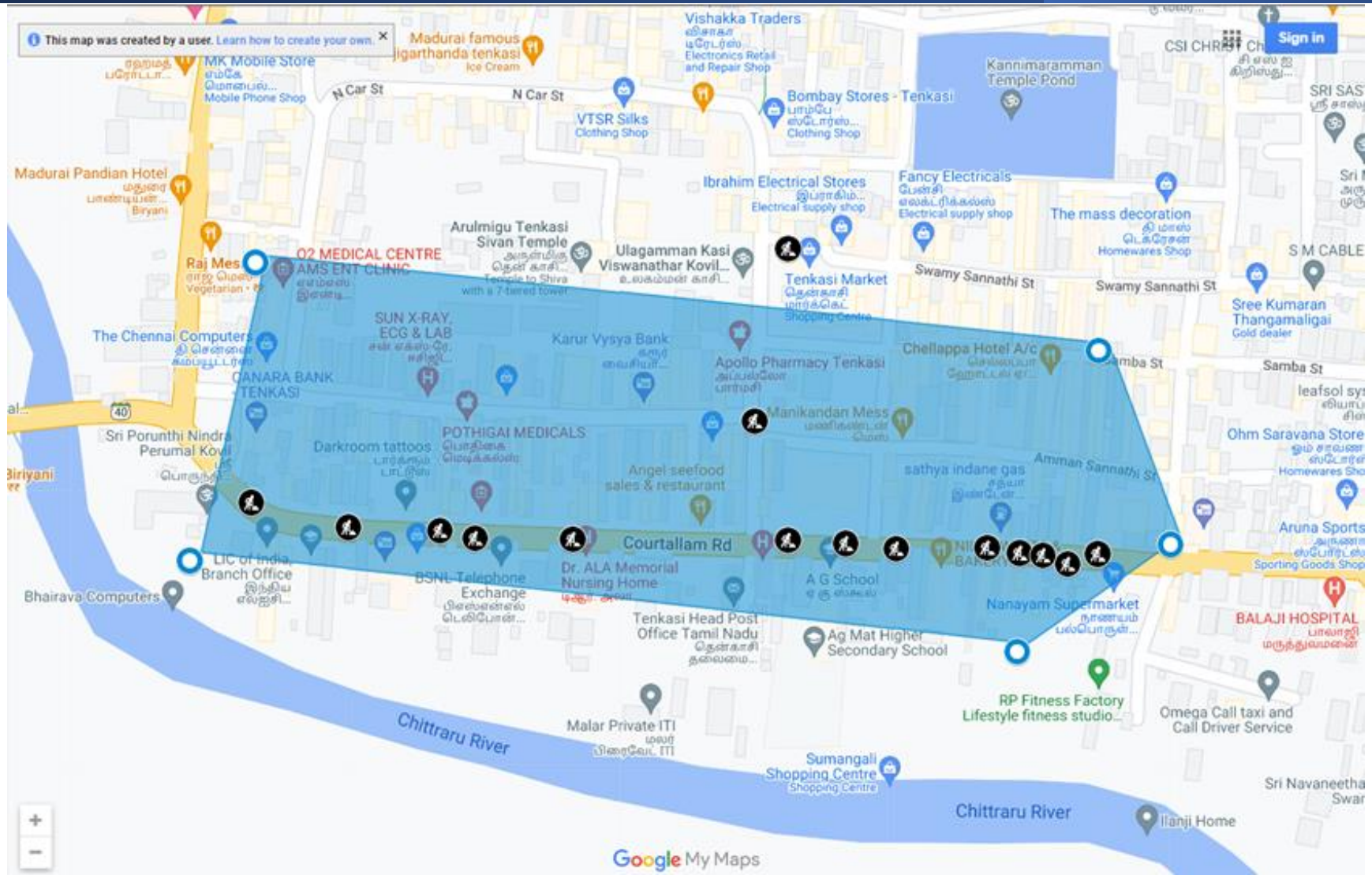
Problems Statement: Develop GPS attendance solutions to road workers. (SDG 11)

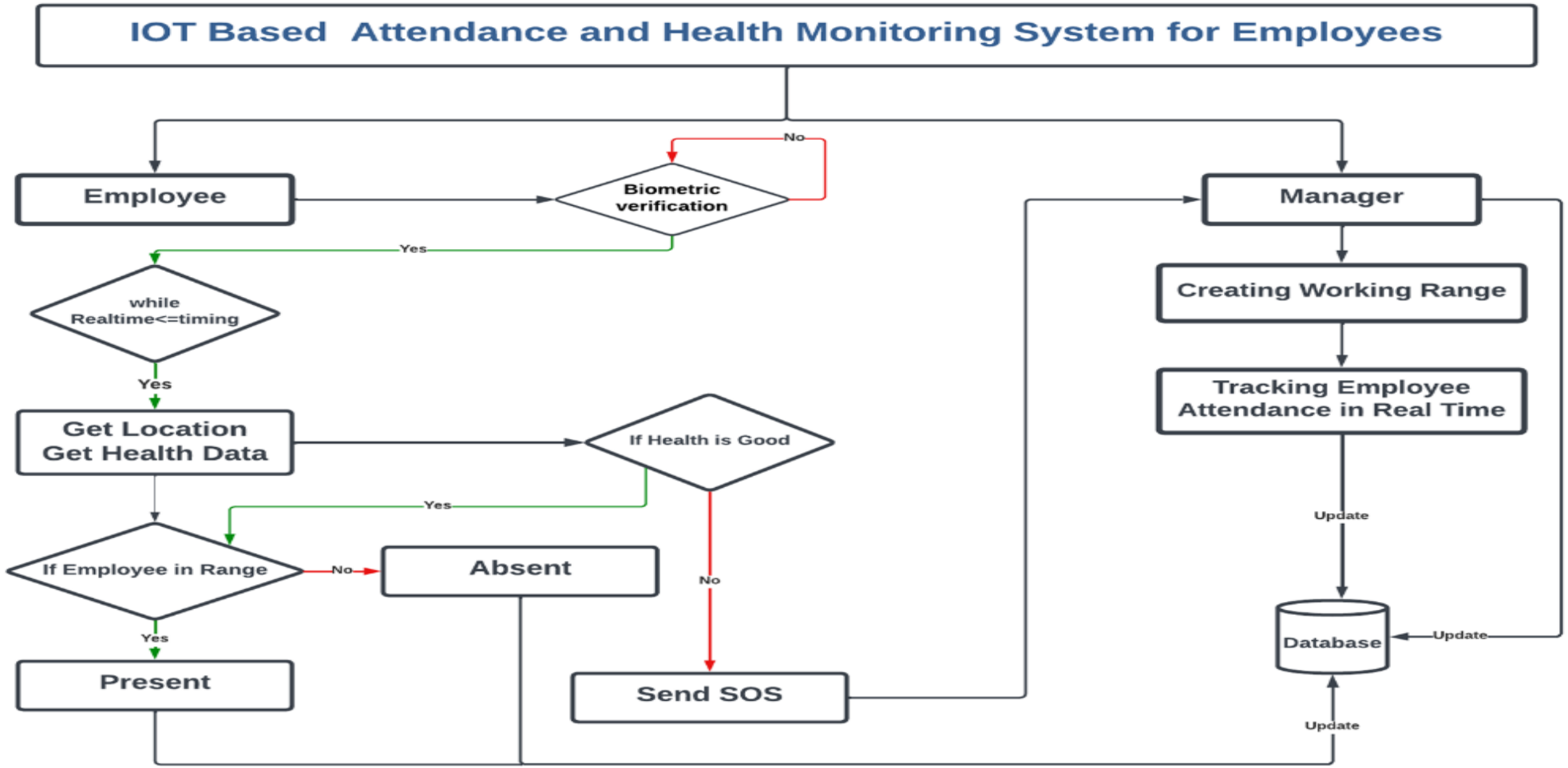
Your Solution to address the problem:

- Develop a human wearable device with nano-sized GPS tracker and a chip finger print sensor. It sends location information to a database in the cloud service.
- The geographic radius (working range) with Latitude and Longitude, a unique ID for each worker and a Device ID will be mapped and set in the Firebase/Thingspeak cloud store.
- When the worker is present in the working range, Id of the user, device and biometric attendance will be transferred to the cloud store and attendance will be marked as “PRESENT”, If the worker goes out of the range or biometric sensor or device ID mismatched, attendance will be marked as “ABSENT”.
- A ticking clock will alarm at every 90 minutes to alert the worker to mark his/her biometric attendance in the device worn by him/her.
- Cloud store will maintain the history of each worker with the hours of out of range and hours of presence within the range and will be accessible by the Supervisor/Manager of the organization.
- This device is fabricated inside a water & dust resistance cover to safeguard the device from pollution and avoid tampering.

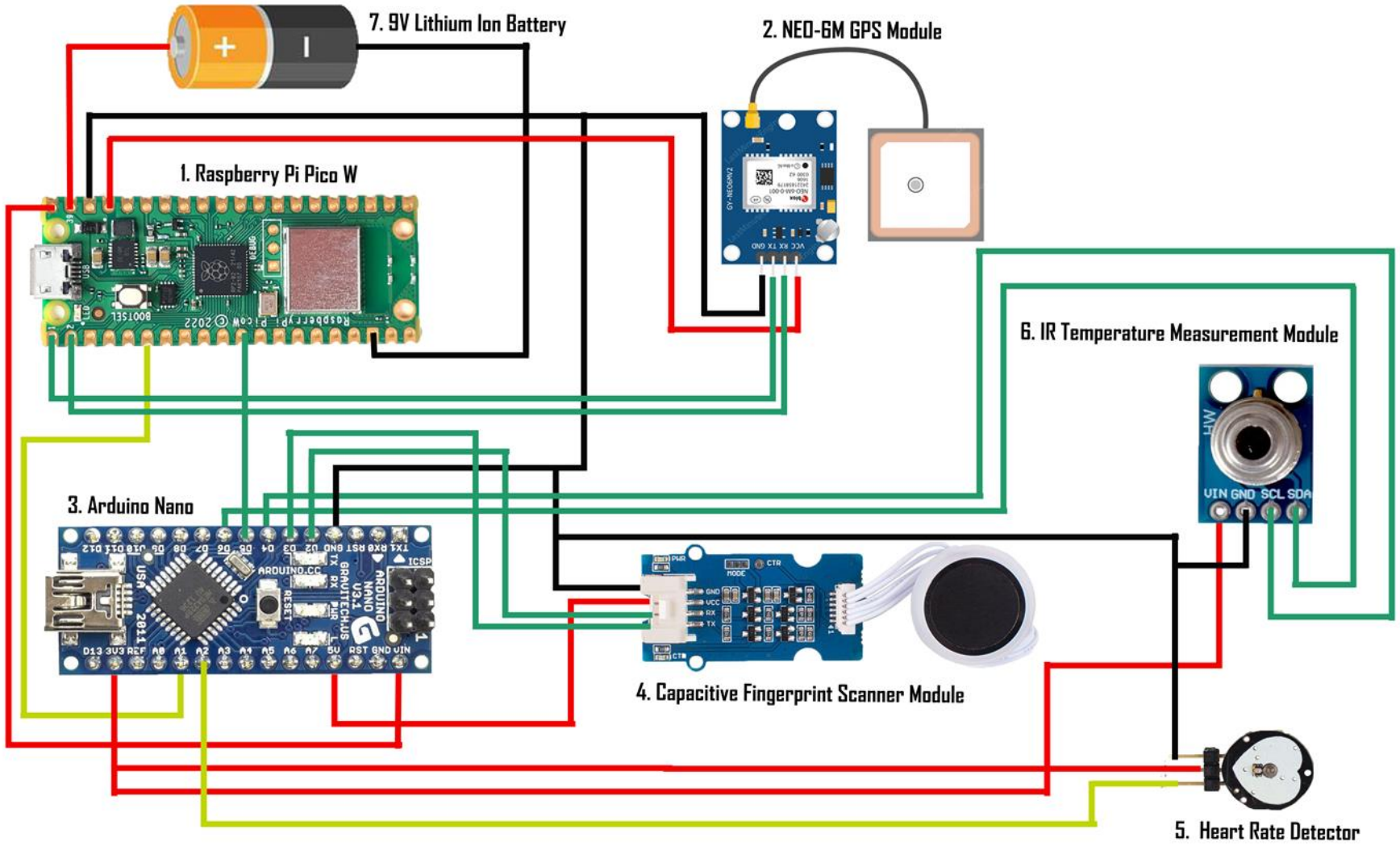
Problems Statement: Develop GPS attendance solutions to road workers. (SDG 11)



Problem Solution



Implementation Plan



Impact Assessment

- This device will be designed for construction sector, where managers need to monitor the timely attendance of a large number of workers. A supervisor can't go to each spot on site to see whether the worker is completing the task or not
- This device will be used in any Organization or industry to maintain the time-based attendance of the employees.
- This device can also be used in Educational Institutions to monitor the attendance of students and staff. (In our SRM Institutions we are taking attendance for each period, If we implement this automatic GPS attendance system in our institution time will be saved and we will get more time for lectures)
- It can be used in all large-scale human resource management.
- The

Conclusion

➢ **Current Market:** Biometric Attendance and BAR Code ID Scanner

- The scanning of bio-metric information is being used for marking the attendance of the workers, but it fails to monitor the live location of the worker
- Maintenance of the bio-metric attendance system in a polluted road-side environment in different weather condition is a difficult task

➢ **Proposed GPS Attendance module:**

- Low cost Human wearable device with tamper and dust free for each worker with a unique device id, which is tracked over GPS locations.
- Live location of the road-side workers will be tracked with Nano-GPS
- Historical Data of the workers will be stored in the cloud store and can be accessed by Managers
- Manager can verify the current status of any doubtful worker by raising a request for marking attendance

Current State of Technology for the chosen problem

- Currently Portable biometric based time attendance devices are available, which can record and monitor the employees presence in the field.
- These devices are available with the supervisors and every road-side worker needs to meet the supervisor to punch his/her attendance. Also, the road-side environment is usually very dusty and polluted.
- The task of marking time-based attendance is a cumbersome task. The device and battery levels in the device are highly costlier and needs utmost care in maintenance during different weather conditions.
- We need a portable, human wearable time based attendance system to monitor the attendance of the road side workers.

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Government of India

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APPLICANT NAME	1 . Dr. R. Balaji Ganesh 2 . Mughesh Kumar NR 3 . Yoga Vignesh V
TITLE OF INVENTION	INTERNET OF THINGS (IOT) BASED ATTENDANCE SYSTEM FOR ROAD-SIDE CONSTRUCTION SITES
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	rbalaji.nitt@gmail.com
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View Documents

Filed → RQ Filed → Published → Under Examination → Disposed

In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

References

1-Real-Time Online Attendance System Based on Fingerprint and GPS in the Smartphone | IEEE Conference Publication | IEEE Xplore

2-Attendance Monitoring With GPS Tracking on HR Management | IEEE Conference Publication | IEEE Xplore

3-CN102819875A - Attendance system and attendance method based on face recognition and GPS (global positioning system) - Google Patents

4-GPS Based Attendance in India | Attendance Tracking With Geolocation | ResolveIndia

5-US8353705B2 - Attendance tracking system - Google Patents