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Integration of NFC and face recognition and mobile tracking system for effective attendance management

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Abstract– *With the regularly developing patterns in innovation its has turned out to be basic to create brilliant frameworks in each field which give more yield in less contribution of labor. This paper speaks to one such thought of Smart Attendance System which utilizes the idea of NFC to control the participation framework remotely. The proposed model not just defeats the downsides of ordinary participation observing physically yet in addition demonstrates superior to anything different advancements presented till date by keeping up the classification and security of the framework. Idea of NFC innovation is executed through RFID card. This venture utilizes a Microcontroller to store the database, RFID TAG to store the ID information, RFID Reader to transmit and get the information through microcontroller, a showcase gadget to show the data and a Zig-Bee module to make the entire framework remote and helpful to utilize.*

Key Words*: *Attendance System, NFC, Microcontroller, RFID TAG, Zig-Bee module, remote.

1. INTRODUCTION

NFC peruser is appended with the Office server where each representative needs to demonstrate the NFC Card, after confirmation Camera is started and Face Recognition is performed through Matlab. After Face Recognition, Authentication Link SMS notice is send to the worry Employee's Mobile number. Simply after every one of these methods Attendance is set apart in the server. Android Application is sent to Track a specific Employee by the Employee in the wake of starting our Tracking application. This System will abstain from squandering of time by the Employee after effective passage to the workplace and not sitting in the seat and playing out the obligation on time amid working hours.

2. OBJECTIVE

To track the Attendance of the Employee of the organization in a successful and profitable way. To track the present area of the worker in the wake of getting into the workplace to follow the work done by the representative.

3. EXISTING SYSTEM

Manual participation time checking makes progressively the cost of tedious and administrative work of the organizations. Application gives a few critical tasks, for example, caught participation records utilizing NFC, programmed time computation, leave and additional time checking, working hours assessment, constant refreshed data get to, and producing reports.

4. PROPOSED SYSTEM

NFC peruser is joined with the Office server where each representative needs to demonstrate the NFC Card, after validation Camera is started and Face Recognition is performed through Matlab. After Face

Recognition, Authentication Link SMS warning is send to the worry Employee's Mobile number. Simply after every one of these methods Attendance is set apart in the server. Android Application is sent to Track a specific Employee by the Employee in the wake of starting our Tracking application. This System will abstain from squandering of time by the Employee after fruitful passage to the workplace and not sitting in the seat and playing out the obligation on time amid working hours.

5. SYSTEM DESIGN

4.1 ARCHITECTURE DIAGRAM:

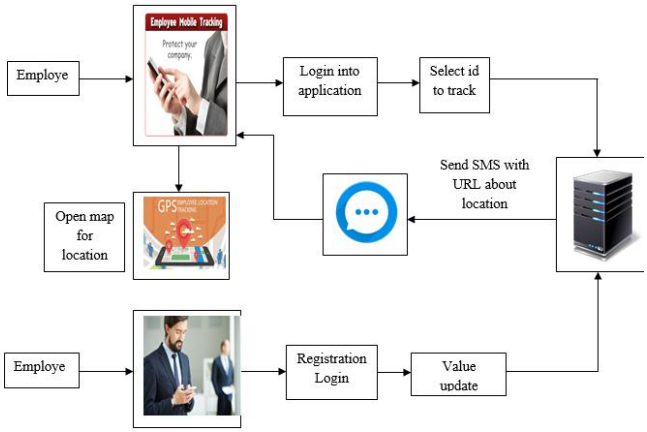

Fig -1: Architecture diagram

4.2 DATA FLOW DIAGRAM:

4.2.1 Level 0:

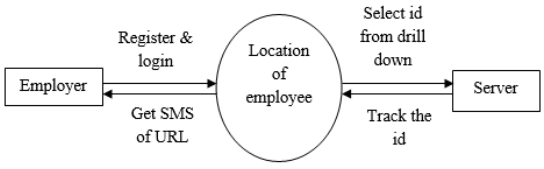

Fig 4.2 Data Flow Diagram Level 0

Fig -2: Data flow diagram

4.2.2 Level 1:

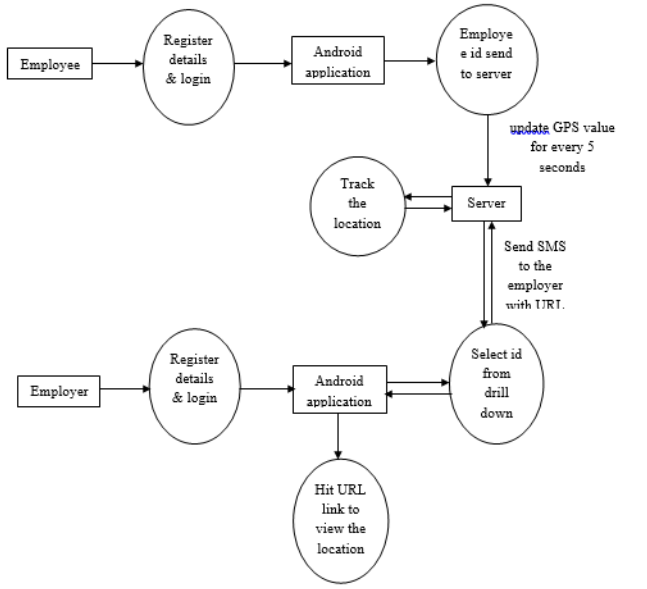

Fig -3: Level 1 diagram

4.3 ER DIAGRAM:

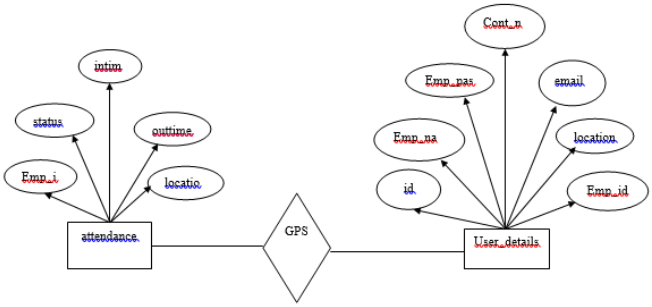

Fig 4.4 ER Diagram

Fig -4: ER diagram

Fig 4.5 N-Tier Architecture

Fig -5 : N-Tier Architecture

6. SYSTEM SPECIFICATION

6.1. Requirement analysis:

Prerequisite examination decides the necessities of another framework. This venture investigations on item and asset prerequisite, which is required for this effective framework. The item prerequisite incorporates info and yield necessities it gives the needs in term of contribution to deliver the required yield. The asset prerequisites give in a word about the product and equipment that are expected to accomplish the required usefulness.

6.2. Hardware environment:

The equipment prerequisites may fill in as the reason for an agreement for the execution of the framework and ought to in this way be a finished and reliable detail of the entire framework. They are utilized by programming engineers as the beginning stage for the framework structure. It indicates what the frameworks do and not how it ought to be actualized.

- Hard disk : 120 GB
- Monitor : 15' shading with vgi card support
- Ram : Minimum 256 MB
- Processor : Pentium iv or more (or) proportional
- Processor speed : Minimum 500 MHZ
- Embedded kit : NFC peruser
- Camera

6.3. Software environment:

The product prerequisites are the particular of the framework. It ought to incorporate both a definition and a detail of necessities. It is a lot of what the framework ought to do instead of how it ought to do it. The product necessities give a premise to making the product prerequisites particular. It is helpful in assessing cost, arranging group exercises, performing undertakings and following the group's and following the group's advancement all through the improvement action.

- Platform : Windows Xp/7/8
- Front End : Java-JDK1.7, Android-sdk and Eclipse, Apache tomcat
- Kit Programming : Embedded C
- Matlab : Face Recognition
- Back End : MYSQL

6.4. Features:

- High-Performance RISC CPU
- Peripheral Features
- Analog Features
- Special Microcontroller Features

7. NFC(Near Field Communication) WORKING

Dissimilar to Bluetooth, NFC doesn't require any sort of manual blending or gadget disclosure to exchange information. With NFC, an association is naturally begun when another NFC gadget goes into that recently indicated four-inch go. Once in range, the two gadgets immediately impart and send prompts to the client. There's colossal potential with NFC. NFC represents close field correspondence and it permits telephones, tablets, PCs, and different gadgets to effortlessly impart information to other NFC-prepared gadgets. The innovation developed from radio-recurrence recognizable proof (RFID) tech. RFID is behind those security check cards that get you into the workplace consistently or sidestep that tollbooth on your regular drive

8. MODULES

A measured plan diminishes multifaceted nature, offices change (a basic part of programming practicality), and results in less demanding execution by empowering parallel improvement of various piece of framework. Programming with successful particularity is less demanding to create in light of the fact that capacity might be compartmentalized and interfaces are disentangled. Programming design typifies particularity that is programming is isolated into independently named and addressable segments considered modules that are coordinated to fulfill issue prerequisites. Modularity is the single trait of programming that enables a program to be mentally sensible. The five critical criteria that empower us to assess a structure strategy concerning its capacity to characterize a compelling particular plan are: Modular decomposability, Modular Comps capacity, Modular Understandability, Modular coherence, Modular Protection.

8.1. MODULES DESCRIPTION

- Employee
- Server
- Employer
- Mobile GPS updates
- Location tracking

8.1.1. Employee:

This module will portray about the server correspondence between the application and framework. Through the server client get speak with their comparing demand.

8.1.2. Server:

In this application both worker and manager application will convey through the server by giving IP address. Server will refresh the area of representative utilizing worker ID.

8.1.3. Employer :

In this module boss have an application. Manager will enlist their data. His application is to follow the representative. So manager will login into the application . in that application nearness representative id will be appeared on drill down catch. Manager will pick one id from that drill down catch. After that server will follow the worker.

8.1. 4.Mobile GPS updates:

In this module GPS area of the representative will be refreshed to the server. For at regular intervals versatile will gets the area of worker and update that area on the server.

8.1.5. Location tracking:

This module depict about following the area of worker. At the point when boss select id to follow server will get the ID and track the area and send SMS about the area as a URL. At the point when manager hit the connection google map open and demonstrate the area the area of the representative.

9. CONCLUSION

The proposed framework is acquainted for encouraging the organization with track and screen its representatives working hours as it screens late entries, early flights, and time taken on breaks. It likewise gives the advantages of the exactness of their installments just as improving the worker efficiency. The usefulness of the proposed application was gathered by the objective clients of a few sorts of organizations. This paper derive that business can follow the representative versatile application Using GPS worker area will be followed through portable application which id conveyed on worker portable.

For at regular intervals worker portable application will refresh the area of representative. So manager can follow see the area of representative.

10. FUTURE WORK

It is confirmed that the antenna parameters can be improved by modifying the dimensions, shape, frequency and materials with different dielectric constant. And so in future we can say that by this type of comparative study we can analyse the best type of antenna which will give us good gain.

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