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## Making Chennai City Digitalized Using Internet Of Things

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### ABSTRACT

*The Project Making Chennai city into a digitalized city using Internet of Things basically aims at digitalizing Chennai city by using Internet of Things board in the homes / Shops /Offices located in Chennai.*

*An Online portal has been launched where all the services of Chennai city has been integrated and introduced to the residents /tourists residing . They can access the services including Government services such as online complain , SwachBharath , Anti-Corruption unit making the city run in an transparent manner and more safe. The entertainment module aims at letting the targeted audience to have fun by listing the set of parties , concerts ,Movies ,Exhibitions .For tourists and residents who would like to travel around Chennai ,we have the transit module giving information about all the routes and information of the buses /trains and Metro trains . Information regarding educational and utilities are also given*

*We have added an Smart Home module where the user shall be having Internet of things board present in the house . We shall sensors in the kitchen to weigh the utilities such as groceries where the user can access and check how much of groceries is left remotely . We have added fire sensors around the house , so not only does the fire extinguisher system does not get set off ,The firestation and the user also gets prompted giving the user the chance to ask the neighbor /Relative to act fast.*

*An sensor (activity sensor shall be set up in the house) which prompts the user and the police station if at all any intruder breaks into the house .We shall also providing an dashboard where the user can remotely access his house and control any appliance/Device present in the house . The sensors shall be integrated in all the transport in the engine hardcored ,so that all the information shall be transmitted and crimes can be prevented .*

*The street lights , offices of government offices shall be all fitted with sensors /Cameras . There shall be receivers set up at every constituency where data shall be transmitted using a network and encrypted for security reasons .*

**Key Words:** *Chennaicity , Internet of Things , Sensors*

### 1. INTRODUCTION

The main aim of the project is to bring Chennai ,a city present in the country of India into a digitalized city with the help of sensors , boards ,Applications ,Online Portals and Applications.

We have 8 modules in the project ,The first 6 modules deals with the online portal and application where the Chennai residents and tourists can access the services provided which include Government services ,which aim to prevent corruption and bring transparency to the government . The second modules aims at informing the users about entertainment including concerts ,parties ,exhibitions . The third module helps residents to give information and allows user to book food from the restaurants present in Chennai. The fourth module provides details about all the sport functions being held in Chennai .The fifth module aims at educational institutes and transit while the last module provides utilities services.

The seventh module named as the “Smart Home Portal” is a premium service where all the houses in Chennai are fitted with sensors including activity sensors , Temperature

sensors , Weight sensor , Water level sensors, relays allowing users to control their homes remotely. On breach of security the Police station along with the resident would get intimation ,so that users can take prompt action if police does not take action . The user can remotely control the house appliances ,devices making it convenient and reducing over consumption of power as the user can switch off the devices remotely .

The final portal aims at bringing Transparency and Security to Chennai. Initially all the street lights shall be connected to our network using relays ,where there shall be automatic control and even details of street lights fuse can be noted and prompt action be taken . We have also proposed that the offices of the government officials be made from the application ,where appointments of those officials can be made using a database where the reason for meeting and responses bedigitalized . Usually the police station complains are made using traditional complain books register can be overturned by lodging a complain to the database using the application to prevent any such harassment and corruption . Upon the satisfaction of service

being received the user can type the One Type password to resolve the complain if not the complain shall be forwarded to a higher authority and action be taken on the police personal for not taking prompt action.

For the security for travelers we shall be having sensors connected in the all the public mode of transport . The user shall be asked to connect to the sensors from the application, Upon the user feeling any sense of distress or harassment she can press the Save My Soul (SOS) button ,Immediately the nearest police personal on duty shall be informed.

A sensor would be deployed on all Private vehicles ,upon any type of beach the Road Transport official shall be informed . If the accident meets with an accident the police as well as the nearest hospital be informed

The system helps in making a city safer to live and in the near future we hope this model can be expanded globally.

## 2. EXISTING SYSTEM :

Currently there are websites and applications that provide information regarding the infrastructure and services present in Chennai , But most of these third party sites are not reliable and don't provide a good user friendly interface .

There is only Home Video Surveillance systems available in Chennai at a higher range cost where the users are informed that some intruder has broken into the house .

There are online systems to pay the bills provided by the government systems but no such system is provided to curb corruption , Online swachbharath system and providing all the details of the user constituency .

The only security measure taken is removal of tinting widows above 35% which is not being enforced effectively and Accident systems are not present in Chennai .

There are no smart home portals available as well as automatized green routes for ambulances

## 3. PROPOSED SYSTEM :

The system we have proposed overcomes all the difficulties faced by the existing systems .

Online Infrastructure :

The Online Infrastructure deals with all the services being provided in Chennai being listed to help the residents and tourists present here .

There are mainly 6 type of services being provided which are Government , Entertainment , Restaurant , Sports , Transit ,Educational , Utilities .

Government services are useful when the user can file a complaint online by providing the proof online and visiting the police station after a stipulated time for completion of formalities . When the user files a complain , An email is sent to the police station supervisor along to the resident . This prevents the police personal from preventing the user from filing a complaint to a higher official or an influential person .

If the complaint has been resolved , The complaint can be resolved upon providing the OTP to the police personal , This prevents any fraudulent measures taken by police to close the case .

Similarly the user can complain if the road is not clean or they find any sanitation issue in the constituency .

The proof of the user first shall be validated before the complaint is being sent to the concerned authorities to prevent any type of fake / spam complaints .

The entertainment module provides a dynamic list of all the festivals , Concerts , Exhibitions , Dramas and Movies being held at the city . Users can book and get details of the following from the site and application developed .

The Restaurant Module would help the user to book and order food to be delivered to their door step from any hotel located in Chennai . This is achieved by sending JSON request to the corresponding hotels database along with the user information .

The transit module contains the list of all the trains ,buses and airplanes leaving and reaching Chennai .

The user can book and get information about the routes using the site/app .Upon any distress ,the user can press the SOS button and get help immediately . All the public transports would be having a network and would contain information of the travelers .

The Educational Portal contains the list of all the educational institutes present in Chennai along with their address , phone number and any required additional information

The utilities Section contains a list of all the utilities and 24\*7 services needed by a resident in Chennai , The application currently has 14 utilities and would expand in the near future.

Smart Home Portal:

The smart home portal is a premium service for the residents of Chennai . The houses would contain sensors fitted into a board (CC3200 launch pad Developed by Texas Instruments ) . An activity Sensor would be fitted in the door which would be activated when the door is locked and deactivated when the door is unlocked . When an intruder tries to break into the house ,An message and Email is sent to the Resident as well to the police.

This is to ensure that the resident can take some prompt action if the police fails to do so . The switch board and appliances of the home would be connected to relay in turn be connected to the network where the information is logged into our personalized portal .

The user can access the portal and remotely access the devices . The water level of the tank shall be logged using our water level sensor . A temperature sensor is fitted in the home ,When it reaches the threshold temperature the fire extinguisher is set off along with an email /SMS being sent to the resident and fire station

**Online City Portal**

In this module , we have proposed to make Chennai city digitalized and safer from the government perspective.

We propose that all public mode of transports be fitted with sensor and network connectivity . When an user enters the transport ,he shall be connected to the network and can buy tickets using the portal . All information shall be displayed in the portal and upon any type of distress ,he can use the SOS option , which immediately notifies the nearest police station to take prompt action . This type of communication is done by using Gps and Wireless communication .

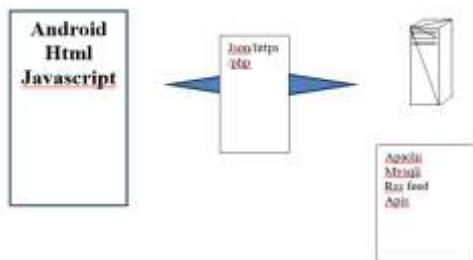
Private mode of systems can be fitted with a sensor ,where only upon when a user connects to the sensor from his portal can be activated bring a sense of security . When the user breaches any rule immediately the Road Transport officials are informed about it .

All Government officials appointments can be made through our portal , and the such can be verified with the help of cameras . The outcomes of the meetings will have to be digitalized and maintained on a daily basis . This has to be done by a separate department which runs independently .

Ambulances will be fitted with a IR sensor where traffic lights are also fitted with IR sensors during an emergency the ambulance shall transmit IR signals making way for the ambulance to save life. All the details of the patient shall be communicated to the hospital with the help of the wireless network.



Architecture Diagram



High Level Implementation Diagram

**4.ADVANTAGES :**

The system makes Chennai city a more safe city for tourists and residents.

The system makes the city governing style transparent and prevents corruption

This system is user friendly and is easy to use

Very affordable and easy to implement Model

**5.SETUP AND RESULTS:**

Given Below we have provided the set up of the portal :



Figure 3: Educational Module



Figure 4:Government Module

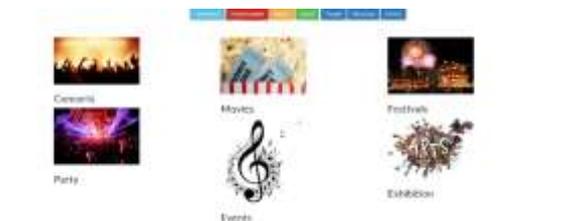


Figure 5:Entertainment Module



Figure 6: Transit Module



Figure7: User Interface Module



**Figure 8:** Home Automation System

### 5.CONCLUSION:

We conclude by saying that by implementing this project on a large scale, we can make the world a better and a safer place to live in.

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