DIGITAL ASSISTANT SYSTEM FOR EDUCATION MANAGEMENT

GUIDE

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AI based digital assistants like Google Assistant, Alexa are being increasingly used in current days. In education the need for digital assistants are essential to manage statistics and analytics of educational database, which is includes student activity monitoring, result analysis, student and faculty details, academic calendar events, etc. It would be much simple and efficient when digital assistant is introduced.

This can be achieved by using voice controlled digital assistant that can provide results to complex analytical speech queries. The project consists of a digital assistant that uses speech to text, text to speech conversion algorithms and keyword filtration technique. There will be a secured database where the student academic data will be stored. This digital assistant can be used in different places with no or minor changes as per the setup environment. Applications include Schools, Colleges, Hospitals and Workspaces.

The project has three modules text to speech, data processing and speech to text. A far field voice recognition will be used which consist two to five combinations of microphones. The recorded audio will be preprocessed to remove any noise. Then the audio is tracked for a pre-specified word (like "Hey Siri"). If the keyword is present, the assistant is activated, the audio is then converted to text using Long-Short-Term-Memory (LSTM) Recurrent Neural Networks (RNNs).

The data processing is performed with a Natural Language Processing Engine. First stop words are removed. Example, "Say the events for tomorrow" will become "events, where events will become event. The time is decided. Where tomorrow will be accurately mapped to its date. Finally, the text will become "event-DD.MM.YYYY" which is passed as parameter to the API. The return value is then converted to a string or text data. Tomorrow". The filtered text then will be stemmed

To convert the data back to audio format. This is done using an RNN where it will compare and extract the data with Lexicon Dictionary then use recorded sounds stitch them together to form utterance which would mimic human like voice. The digital assistant will be developed using python.

MOBILE APPLICATION FOR POULTRYMANAGEMENT

GUIDE

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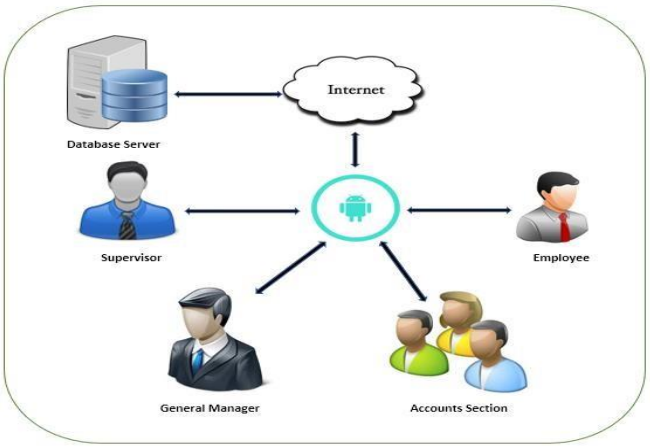
Shanthi Feeds is an Indian multinational food products industry which was the first one to introduce integrated operations, both at the level of organizing farmers and, also, bringing in all process parameters, including the production of poultry feed, under its control.

The main aim of this project is to design and develop a mobile application that makes the manager's job simpler so that they can plan and distribute work to their employees working at different levels in the hierarchy, manage in ventory, track work flow,etc., using smart phones from anywhere at any time. With this mobile application, the employees can update the status of tasks assigned daily and maintain their registers updated. This mobile application also offers provisions for generating reports automatically about sales and revenue.

A Quick Read (QR) code based security feature is incorporated in this application for manager to track the status of work assigned to their employees online. Every employees and managers who are part of the Shanthi Feeds Company is given a user account and password to access this mobile application. When an employee login to the application, the application shows important guidelines about raising the Chickens healthily and they can also infer details about the number of birds available, types of breeds available and the number of birds with below average weighted, etc,.

Using this application, the supervisor can monitor the routine tasks such as details of birds delivered, birds available, the availability of the Parental Stock and also Cost of them. When the manager login to the Applications, he can upload the new Rules and the target of the company and he can see the overall assessment of the company including the sales, revenue of every month. Using this application, the manager can generate reports automatically about latest business transaction for business meetings. The mobile application is developed using Android Studio and SQL (Structured Query Language). The approximate Cost estimation for this project is ₹-4000-/.



ENHANCED MOBILE APPLICATION FOR PSG TRAINING AND PLACEMENT

GUIDE

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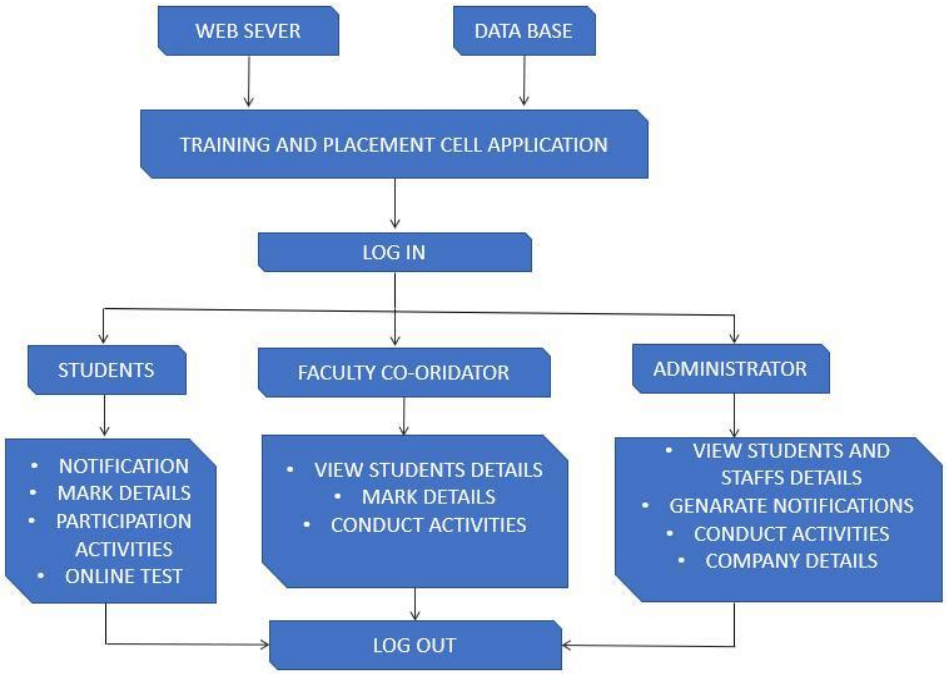
PSG Polytechnic College has established a Training and Placement Cell to provide expert guidance to students from diverse disciplines for building competencies in their specific domains with adequate life skills and get better placement. It is headed by a Professor designated as Dean, Placement & Training and he is supported by Placement Officer and a full-time placement coordinator. The office is also assisted by Faculty and student coordinators who lead a team of placement representatives of various programs.

The main aim of the project is to develop a secured mobile application for Training and Placement Cell of our college to connect and coordinate the individuals involved in Placement activities and perform the routine tasks of the cell such as maintaining the data base of the students up to date, updating the details of curriculum, notifications and regular updates about the cell along with the list of students selected for companies, events and activities, training schedules, placement information, company information etc. This mobile application helps students to create highly professional resumes automatically, attend online tests and get interview tips from their alumni. A Quick Read (QR) code-based security is also incorporated for Employers feedback system.

It is simple and easy User interface between individuals involved in Placement activities and has the following features: automatic generation of highly professional resumes, generating list of students eligible for placement based on Eligibility criteria, generating reports on placement statistics, QR Code based security for Employers Feedback system, 24x7 access to Placement cell. The approximate cost estimation for this project is ₹-4000/-



SMART SURVEILLANCE SYSTEM USING FACE RECOGNITION

GUIDE

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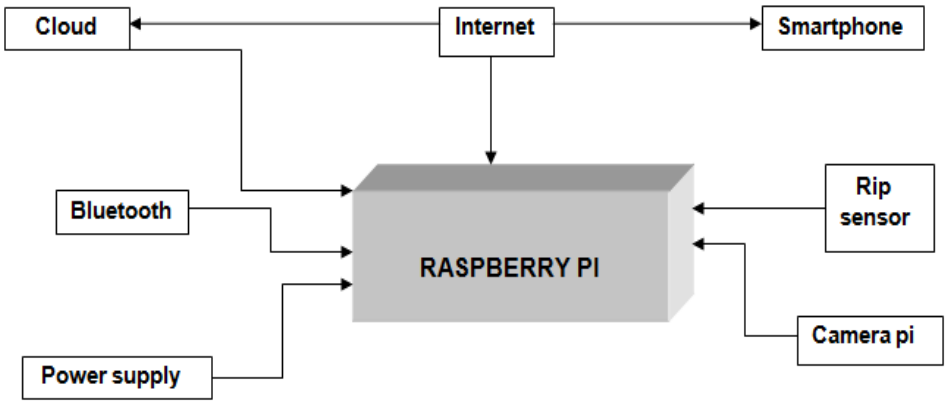
Nowadays, the security forms the most important section of our lives. Security of the house or the near and dear ones is important to everybody. This field has enhanced with new technologies such Internet of things. Every gadget behaves as a little part of an internet node and every node interacts and communicates. Security cameras are utilized in order to build safety in homes, and cities.

The Internet of Things is joined with computer vision in order to detect the faces of people. Likewise, Passive Infrared Sensor (PIR) mounted on the Raspberry PI is used to detect facial features. So it helps to monitor and get notifications when unauthorized person is identified, captures the image and detect the faces, then sends images to a Smartphone application. The existing surveillance system lacks features like cloud storage and low energy and some additional feature like intruder alerting with image and also other feature added to Smartphone application.

In the proposed system, we use the camera to accomplish the pictures when a motion detect via PIR sensor. After detection the face capture it will send to Smartphone application The application can be divided into two parts which are motion detection and face detection. The after detecting the face only the motion detected. . But, if a movement has detected, then the detected movement of the current frame will be processed by the FERET (algorithm of face detection). We used the following hardware's to develop the application: Raspberry Pi 3, PIR Sensor, Raspberry Pi Camera, Smart Phone, cloud and Power Supply. We connected the camera with Bluetooth without using the wifi. Via the PIR motion sensor; the system has the capability to identify motion of things Fig. 1 demonstrates the flow chart for the proposed scheme.



EFFICIENT WATER MANAGEMENT USING LONGRANGE (LORA) IN ADVANCED I0T

GUIDE
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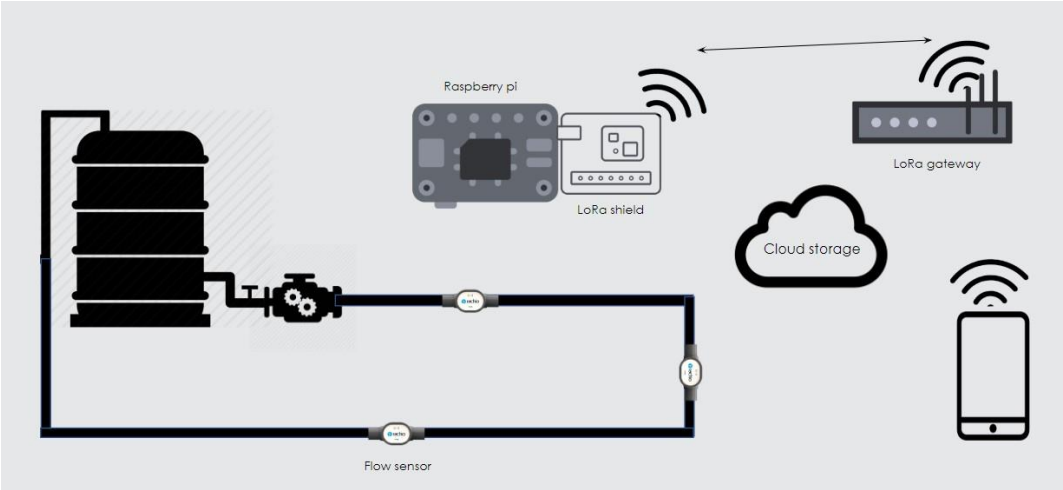
Water management and water wastage prevention is very much important in this time because due to water scarcity .Also detecting water leakage in huge pipe manually is difficult and a lot of water will be waste before rectifying because the amount of time it requires even to detect.

Nowadays the systems are operated manually and no single individual is aware of all the operating parameters of the whole system in each of the schemes so we want to automate the monitoring system. The systems are not operating at their design level/capacity. No data on flow, pressure, level and other ground conditions we want to collect those data using flow, pressure monitoring sensors. So this project resolves this by automating the leakage detection and also it is detecting in real time lively so we can immediately rectify the leakage as fast as possible due to instant alert is sent to the intended person. He will also can view the part/location of the pipe where the water is leaking. In this project the pipelines are planted with set of sensors like pressure sensor, flow meter sensors and purity sensor these sensors are connected to the raspberry pi to collect the data's those sensors, then data from the raspberry pi is transferred to LoRa (Long range) chip.

The data stream from the LoRa is transferred to the nearest base station modem using Lora. Then the base station sends the data to the intended authority or the person's via mobile application where the location of leakage, purity. Amount of water lost till now is shown.So that the problem /issue can be rectified as fast as possible. Advantages of this project is no need for manpower to monitor water leakage, faster leakage detection so we can be preserved as faster as possible, monitoring water purity and easily manageable in mobile application. The approximate cost estimation to complete this project is ₹- 18000/-.



EXPERT SYSTEM FOR AGRICULUTRE USING IoT

GUIDE

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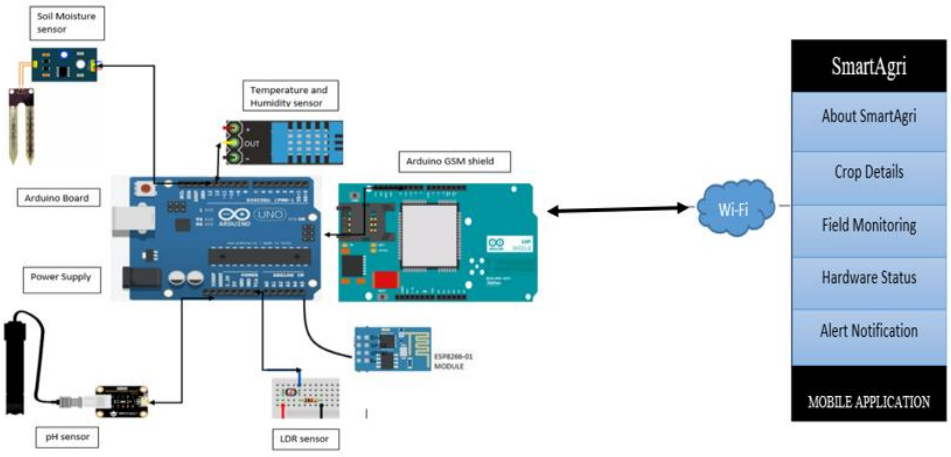
Indian Agriculture productivity is very less compared to world standard due to use obsolete farming technology. Water usage is also unplanned with some arid areas misusing the irrigation facilities provided by planting water intensive crops. Excess fertilizer usage not only makes the plants dependent on artificial fertilizers but also erodes the land quality, polluted ground water and in case of a surface runoff, pollutes the nearby water bodies. In order to overcome the difficulty, we proposed an "EXPERT SYSTEM FOR AGRICULTURE USING IoT".

The Internet of Things (IoT) for agriculture is a rapidly emerging technology where seamless connected sensors device makes it possible to monitor and control crop parameters to get quality and quantity of food and avoid wastage of manure and ground water.

For a good yield, a farmer needs to monitor the field from time to time. This project mainly focuses on field monitoring using IoT devices which would provide live pH level, soil moisture, Light dependency, humidity and temperature of the field to the farmers. An Arduino Microcontroller board with sensors is used to collect the data from the field. The data are received that are viewed by mobile application. This work invoked to take a preventive measure for loss of crop and also to increase the productivity. The main advantage of this project is to make the agriculture smart and user friendly technology to the farmers. Therefore, they can easy increase the productivity and reduce the wastage of fertilizer, manures and ground water level. This will avoid the wastage of money. The cost estimation ₹- 6000/-.



DEVELOPMENT OF A SMART HEALTHCARE SYSTEM FOR PSG URBANHELATHCARE

GUIDE

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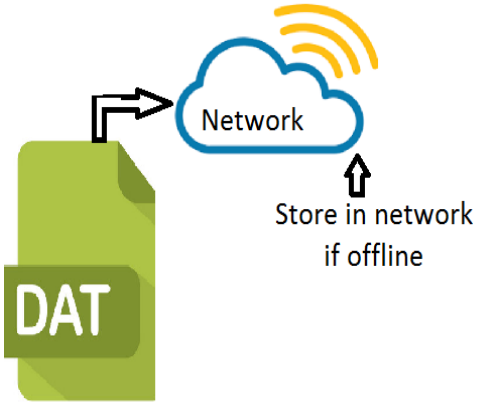
Nowadays, digitalized is likely the single most important demographic shift worldwide in urban hospitals they face a problem to maintain and identify the patient profile and maintaining the records of the patients is difficult to them ,so they are planning to make it computerize their needs in a single software . It will be very much easy to access the profile. The system will create register screens of different age-group patients according to taking treatments from the centers, camps, and school.

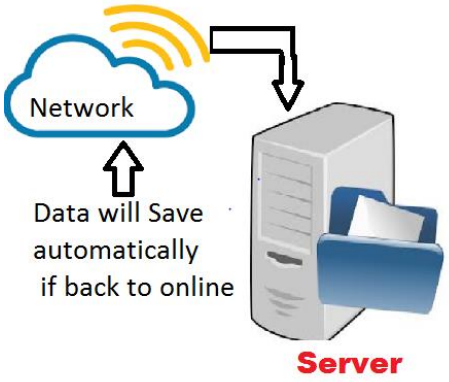
If there is no network the details of the patient will be updated dynamically in the server database when they are connected to online. The patient's observed data is entered based on which the physician can suggest the patient for further treatments.

There will be six modules which will be built into a software. The first module will be creation of outpatient face sheet which helps the entry of out patients in easy and fast manner. The second module will be the family details enumeration where the details of the family will be captured. The third module will be the community enumeration where the field agents will capture the required data area-wise.

The fourth module is school health screening in which data collectors go school wise to check up the students and recommend the student who need follow up treatment. The fifth module is to differentiate the patients according to their treatments. The sixth modules is view the patients past treatments and what prescription they have taken



Data will store in offline



Data will store while online

AUTOMATIC RECOGNITION USING HEARTBEAT AUTHENTICATION

GUIDE

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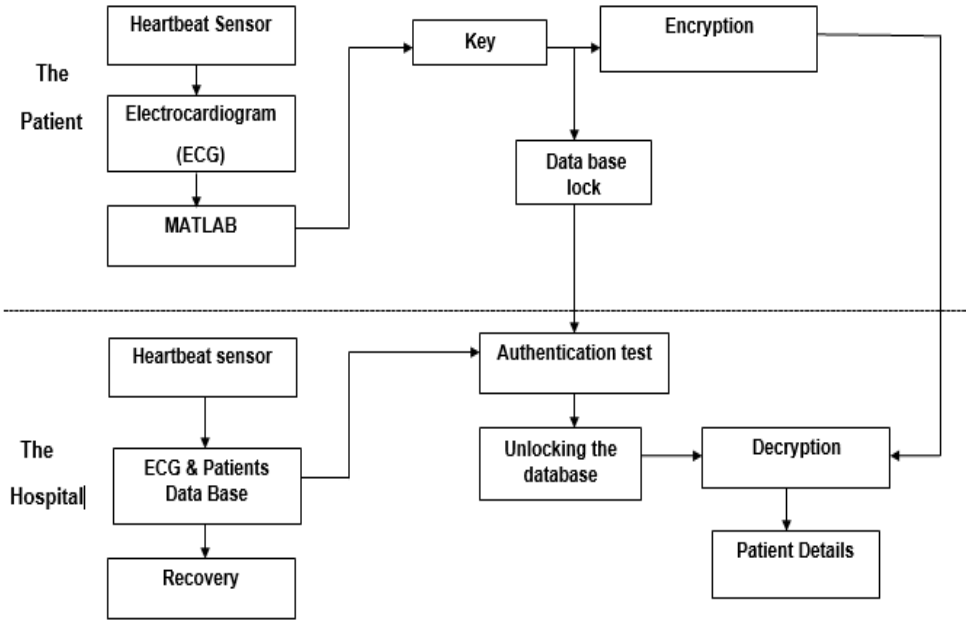
Biometrics like fingerprint, iris, and heartbeat are unique. A biometric trait like Electro Cardio Gram (ECG) of a person is unique and secure when compare to iris and fingerprint which cannot be spoofed or faked. Heartbeat authentication is the latest biometric that is going to be executed in the digital world. Secure and reliable authentication system is in great demand like heartbeat authentication. Only authorized person can access his/her data.

In this project, we propose an authentication technique. Here, ECG wave is considered as an image and is applied as a password. In the proposed project, we are going to use patient's heartbeat patterns to protect their electronic medical records which is a new method of biometric authentication. Correlation coefficient between such two features vector is computer to authenticate a person.

The heartbeat Sensor is connected to any organ of body like finger to detect the pulse easily. Light from the sensor is used to sense the heart rate which is absorbed by blood, the heart pulse is measured by the flow of blood volume. After the sensor sense the heart beat the ECG will capture the photo phlethysmography of heartbeat wave and this wave is used as a password for every patients. The MATLAB is used to execute this project. The heartbeat photo phlethysmography and the details of every patient are stored in the data base. The data can be viewed through the software, which is installed in the pc, and coding is done using python. The cost estimation ₹- 10000/-



END TO END MESSAGE ENCRYPTION USING FACE BIOMETRICS

GUIDE

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Biometric Systems are automated methods of verifying or recognizing the identity of a living person on the basis of some physiological characteristics, like a fingerprint or face pattern, or some aspects of behavior, like handwriting or keystroke patterns. Some of the most used biometric characteristics are shown in the picture below. A biometric system based on physiological characteristics. Than one which even if the latter may be easier to integrate within certain specific applications.

Android studio is the official integrated development environment for Google Android operating system. Built on Intel I IDEA software and designed specifically for android development, It is available for download on windows. Linux based operating system. It is a replacement for the Eclipse android development tool as primary IDE for native android application development. The messenger is used to send message with the normal security system. The message like text ,video ,voice etc.., are encrypted with end to end encryption like AES encryption method used for security to avoid the third party entry. The encryption used for the messenger with128bits of 10 rounds of encryption. The encryption already breakers is 32bit 64bit The messengers like this are much secured when third party has the phone.