



VELAMMAL COLEGE OF ENGINEERING
AND TECHNOLOGY



MADURAI-625009, TAMILNADU, INDIA

EEE TECHMANIA '20

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PRESENTED BY
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

VCET

VISION AND MISSION

VISION:

To emerge and sustain as a center of excellence for technical and managerial education upholding social values.

MISSION:

- Imparted with comprehensive, innovative and value-based education.
- Exposed to technical, managerial and soft skill resources with emphasis on research and professionalism.
- Inculcated with the need for a disciplined, happy, married and peaceful life.

EEE DEPARTMENT

VISION AND MISSION

VISION:

To produce quality Electrical Engineers for industry and good citizens for society through excellence in technical education and research.

MISSION:

- To empower graduates with sophisticated knowledge and technical skills.
- To explore, create and develop innovations in Electrical Engineering and Technology.
- To provide beneficial service to the rural, state, national and international communities.

PROGRAM EDUCATIONAL OBJECTIVES:

1. Graduates will professionally be competent, excel in academics and solve wide range of problems in Electrical and Electronics Engineering field to serve the needs of Employers.
2. Graduates will engage in continuous professional development activities through Lifelong Learning to enhance technical knowledge and communication skills.
3. Graduates will excel in leadership quality and managerial capability which leads to Entrepreneur that bridge the gap between the advanced technology and the end users.

MESSAGE FROM HEAD OF THE DEPARTMENT



The student contributors to the TECHMANIA'20 may Issue's creative efforts have produced a lot of joy and happiness, which is evident in this. The Department of EEE has always supported and guided the students in bringing out their talents. They stand as a witness to the monumental efforts taken by the management to make the college a center of excellence in education and research. It is great to find a considerable number of articles, poems and drawings that certainly prove that our students are adequately equipped and possess necessary skill sets to express their talent. Reading this magazine would definitely be an inspiration and motivation for all students to contribute even more to the orthcoming issues. I hope that everyone would continue to give their full efforts to keep the momentum and continue to enhance the standards of the magazine



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INDIA'S FIRST WOMEN ENGINEER: A.LALITHA



Lalitha, Born on August 27, 1919, in Madras(Chennai) ,the fifth of seven children,was born to Pappu Subba Rao.All her brothers were educated to be engineerswhile the sisterswere imparted basic education.

Lalitha was married at the age of 15 in 1934 and had her first and only child, a daughter named Syamala, at the age of 18. A few months later, in 1937, her husband died.

Determined not to spendher life in mourning as a widow or in remarrying, she decidedto continue her education.



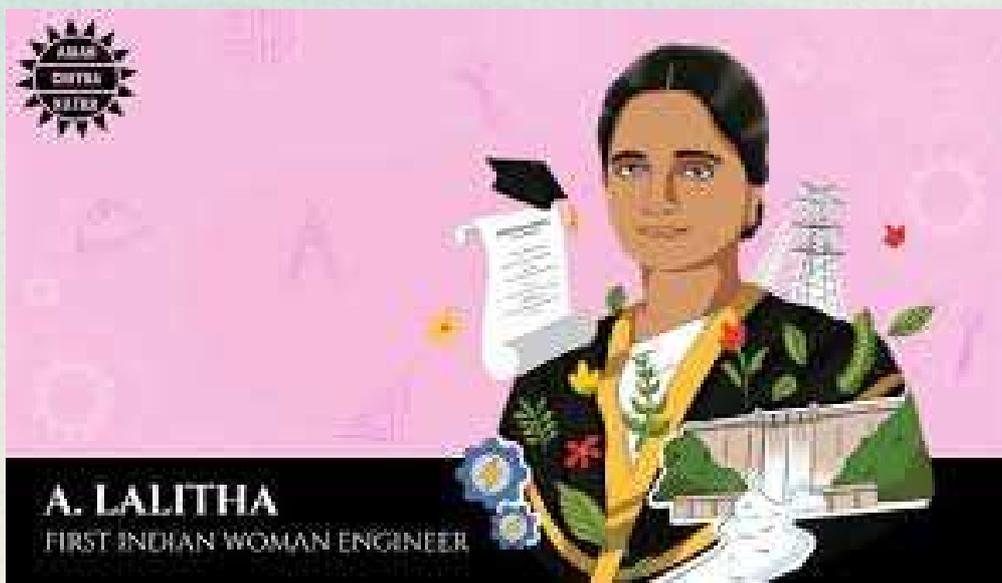
She completed her intermediate exam with first class from Queen Mary's College, Chennai and joined the College of Engineering (CEG), University of Madras, Chennai, in 1939 to pursue electrical engineering. She became the first female student of CEG.

After graduating in 1944, Lalitha assisted her father in his research and joined the Central Standard Organisation, Shimla, for a brief time. Later, she joined the British firm, Associated Electrical Industries (AEI). She executed contracts, did substation layouts, and designed transmission lines



The work she did on the electrical generators of the Bhakra Nangal Dam is noteworthy. She spent three decades in AEI and retired in 1977

She died in 1979 due to brain aneurysm.



G.ARAVIND RAAJ
IIEEE

TRANS-GLASS WITH CONVOLUTIONAL NEURAL NETWORK AND LSTM

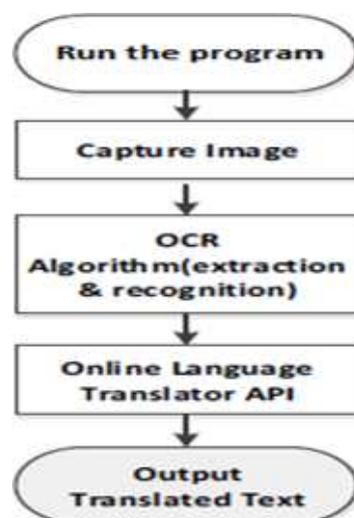
Abstract – The TRANS- GLASS, a prototype for translating the given unknown image containing text to the known language by making CNN. It is done with the help of Tesseract. Trans-Glass is one of the conceptualization of a mainstream augmented reality wearable eye display that helps travellers across the world in recognizing the foreign text. Here OCR algorithm is used for character extraction and recognition with high accuracy under different environmental circumstances. It translates text just by capturing an image with user's camera and translation instantly appears on display screen in language selected by the user. Full top to bottom text recognition in image is a tricky problem that has received much attention recently. The older systems in this area have relied on elaborate models incorporating the basic Feed Forward neural network.



CONCEPT PROPOSED:

The proposed methodology goes through three major phases as mentioned in Fig. 1:

- A. Image capturing*
- B. Algorithm*
- C. Translation*
- D. Speech output*



EXPERIMENTAL FRAMEWORK

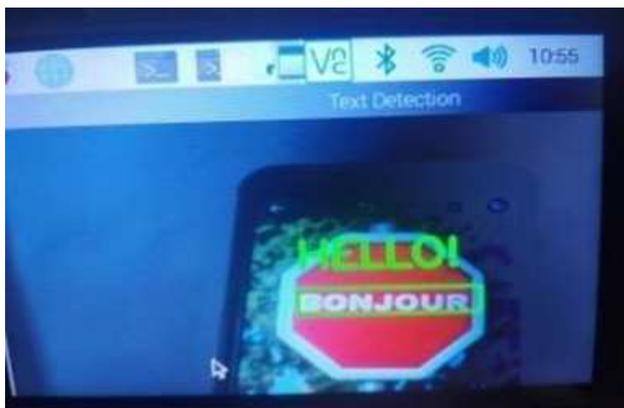
Image shown depicts the final prototype of Trans-glass. The prototype of Trans-Glass consists of raspberry pi 3B+ placed within a case and the pi camera is positioned at the top of the case for capturing the text to be translated. LCD screen is mounted at the vent of the case from which the translated text can be read. Fig.2 shows the text to be captured which to be shown in-front of the Pi camera and Fig. 3 shows the screen



OUTPUT OF THE FRAMEWORK

Trans-Glass, a novel device for helping people of various fields has been proposed in this paper. This module is designed specifically to meet out the following purposes:

- Literate people when they are in foreign countries for translating signboards.*
- Children who suffer from dyslexia and Attention Deficit Disorder by attention grabbing and understanding the meaning displaying the translated text. In addition to this the speech output is brought through the head phones.*



VENKATESH R.N.S
IVEEBB

REAL TIME MONITORING SYSTEM FOR HYPERTENSION PATIENT USING IoT

ABSTRACT- People are prone to many diseases in recent times in order to provide an ease way, a system is been developed to periodically monitor the health of the people by their own self-care. The main motive is to monitor the patient health and update their health condition in the cloud using IoT. The main aim of the system is to continuously monitor the blood pressure fluctuation, respiratory rate, pulse rate and to send the signals to the cloud via raspberry pi. It sends an alert signal as periodic way, first when a person is diagnosed with minor illness the signals are sent to his/her relatives around them. Second, if the illness increases the signals are sent to the nearby ambulance and finally during critical cases the signals are sent to both ambulance and the doctor who is about to treat them in the ambulance. These signals are sent via triangulation process which connects to the nearby stations and alerts them. This system can be easily adapted to everyone and people can be easily instructed to how to use it with high end accuracy of particular measures.

KEYWORDS: Raspberry pi, IoT, Triangulation, Health monitoring, Cloud.

WORKING:

The system has a compact design that can be taken anywhere that provides 24/7 health surveillance. Based on their condition the details can be easily stored and segregated. At first the scheme periodically monitoring device the health consideration of the patient when everything is under perfect balance stipulation then the system remains stalls. When there is a slight change or instability in somebody's health condition, the alert sign is first sent to the relatives or the person whose number is been registered in the server. So, when the condition becomes severe then the ambulance is called by the server itself with detail implemented in it. By this the patient can be easily admitted into the hospital at a proper time without a delay. The theories assimilated in this system are,

IoT:

The Internet of Things (IoT) is a mechanical and computerized machine that gives special identifiers (UIDs) and moves information over a system without requiring collaboration among people and PCs. Because of the mix of different advances, constant examination, AI, item sensors, and inserted frameworks the idea of the Internet of things has developed.

Conventional fields of implanted frameworks, remote sensor systems, control frameworks, robotization (counting home and building mechanization), and others all assistance to empower the Internet of Things

TRIANGULATION PROCESS:

Triangulation is a method / process by which it is possible to determine the position of a radio transmitter by either calculating the radial distance or direction of the transmitted signal from two or three different points to locate a device. In wireless communications / mobile networks triangulation is often used to identify a user's geographical location. In Triangulation process, for triangulation, it uses radio towers that close to your phones. The handset must send out a roaming signal to a radio tower nearby. The phone's location is determined by how intensely the signal is transmitted to every radio tower that receives

THINGSPEAK:

"ThingSpeak" is an open-source Internet of Things (IoT) framework and an API for storing and retrieving data from objects over the Internet or through a local area network using the HTTP and MQTT protocol. ThingSpeak allows the development of applications for sensor logging, location monitoring and a social network of items with updates of status.

M.PRIYADHARSHINI
IV EEE B

IoT BASED FAULT DETECTION IN OVER HEAD TRANSMISSION LINE

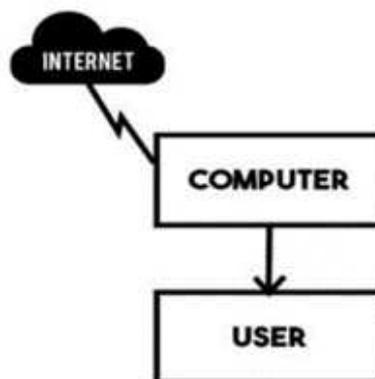
ABSTRACT

The fault occurred in transmission line is very much dangerous for the locality. In HV and EHV transmission line there are less fault occurrence but in locality the fault occurrence is more as compared to outer transmission line. In our prototype we design a model which is to be detect the fault in transmission line by comparing the voltage signal between the transmission line and a reference value, the reference value is predetermined and if the transmission line voltage is more than or less than reference value then fault is to be shown in display. The information regarding fault occurrence in particular phase is send to web page via IoT device which is MCU(Esp8266). Here in our project if the peak hour consumption is high, the system itself will check it and cutoff the least priority loads. And following faults are reduced and the faults may include line to line fault, increased sag, Pole tilt these are the faults which are reduced.

INTRODUCTION

An electric power supply system comprises the generating station, transmission lines and the distribution system. In generating station, power is generated by three phase alternators operating in parallel. To transmit the electricity from the point of generation to the end user, an interconnected network of electric grid is used. The network of electric grid consists of countable number of generating stations, high-voltage transmission lines and distribution lines. We know that when a low voltage power is transmitted over long distance, the power loss we acquire will be more. Though regular maintenance is carried out periodically, some unexpected issues arises due to trees, wind, construction, and corrosion caused by the wind coming through the sea water in the overhead transmission lines near the sea shore.

Though, manpower is allocated for maintaining the transmission lines, it is difficult and a time consuming process.



IMPLEMENTATION:

When AC is applied to the primary winding of the power transformer it can either be stepped down or up depending on the value of DC needed. In our circuit the transformer of 230v/15v is used to perform the step down operation where a 230V AC appears as 15V AC across the secondary winding. In the power supply unit, rectification is normally achieved using a solid-state diode.

Diode has the property that will let the electron flow easily in one direction at proper biasing condition. As AC is applied to the diode, electrons only flow when the anode and cathode is negative. Power supplies without regulators have an inherent problem of changing DC voltage. There are 3 control pins RS (Pin-4), RW (Pin-5) and EN (Pin-6). ESP8266 Wi-Fi module is a self-contained system on chip (SoC) with an integrated TCP/IP protocol stack that can give any MCU access to your Wi-Fi network. ESP8266 is capable of either hosting an application or off loading all Wi-Fi networking functions from another application processor.

CONCLUSION:

The model design in such a way to solve the problems faced by consumer. By using such method, we can easily detect the fault and resolve it. It is

highly reliable and locate the fault in three phase transmission line and also supposed to data storage. It works on real time so we maintain all data sheet and avoid the future problem in transmission line.

**K Sathya Kumar,
IV EEE A**

AIR-O-WATER

- *The Air-O-Water is a humidity and temperature driven machine which creates water from the air, using a proprietary process.*
- *These machines serve two purposes: creating water and conditioning outside air simultaneously, making it the most unique energy efficient water generator available today!*

The Air-O-Water Working Principle

- *The Air-O-Water utilizes the moisture content in the air to create the purest form of drinking water through a patented 4-step filtration process.*
- *The machine's optimum performance ideally requires a minimum humidity level of approximately 50%.*
- *However, the Air-O-Water is designed to produce sufficient amounts of water in conditions of lower humidity as well.*
 - *Not just that, it also performs well in an air-conditioned environment, acting as an effective dehumidifier.*

The Air-O-Water Process

- *Once the air is filtered through a patented air filter process, a condensation unit receives the humid airflow from the evaporator.*
- *The condensation unit then converts the water vapour into water.*
- *This process is known as Atmospheric Condensation.*
- *Once the water is generated through this process, it is then purified via a 4 step filtration process*

The 4 Step Filtration Process

- *The Air-O-Water features a specially formulated filtration process, ensuring that the water you drink is completely pure and safe to consume.*



STEP:1 Air Filter

- *Anti-Static Air Filter*
- *Micro Dust Form Filtration*

Tasks Performed

- *Removes anti scalene from air*
- *Removes dust particles from air*

STEP:2 Water Dust Filter

- *Collection Tank Filter*
- *Tank Input Filter*

Tasks Performed

- *Removes external particles*
- *Removes external particles*

STEP:3 Water Filter

- *Pre Carbon Filter Sediment Filter RO Membrane TCR*

Tasks Performed

- *Removes colour, odour, bad smell from water*
Removes all physical water impurities upto 5 micron.
- *Removes all dissolved salts or organic molecules (the solutes) upto 90 to 95%. Membrane pure size is 0.0001 micron*

STEP:4Ozone Generator

- *Ozone Filter*

Tasks Performed

- *It is a very strong oxidant and is over 3,000 times more. Powerful disinfectant than chlorine. 3741 times more.*
- *Powerful disinfectant as compared to UV. It disinfects, oxidizes, deodorizes, leaves better tasting water.*
- *Destroys all types of microorganisms instantly*

SIGNIFICANCE OF AIR-O- WATER PROCESS

- *Unlike other water purifiers, the water produced by the Air-O-Water is purified using a 4-step filtration process that feature advanced water and air filters to create the purest drinking water possible.*
- *This includes an anti-static air filter, a water-dust filter, a pre-carbon filter, a sediment filter, ozone filter, an RO membrane and TCR filter.*



• Once the water is retrieved from the environment via the air and micro dust form filter, it is passed through an advanced water filter to remove bad odours, physical impurities and colour. Once that is done, a TCR filter, made of activated carbon filter made by mixing coconut shell with silver paste, designed to kill bacteria, remove odours from purified water to enhancing the taste of the final product!

ADVANTAGES:

- 100% pure and safe for consumption
- Healthy drinking water that is rich in Oxygen
- Free from groundwater contamination and pesticide

DISADVANTAGES:

- The products price of an AWG is higher
- AWGs face challenge with sandy areas such as dessert
- Climate is a very important factor for AWG machine to run efficiently

BY S.SEETHAVARSHINI

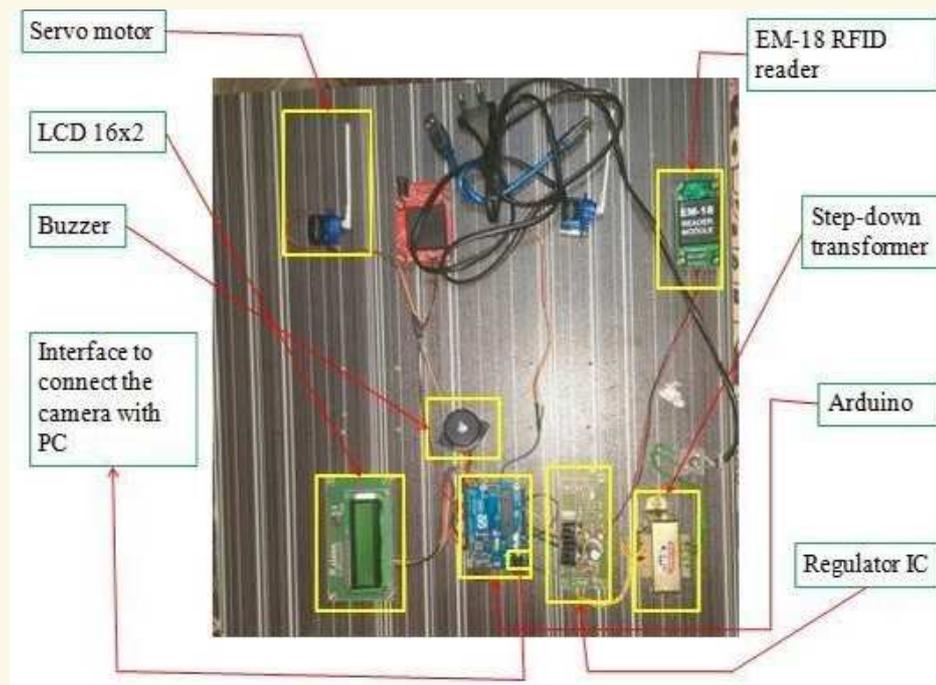
II EEE-B

AI SURVEILLANCE BASED PLATFORM TICKETING SYSTEM WITH DBMS

Abstract - Railways are an integral means of public transport in India. Nearly 23.07 million people travel through trains daily in India. Even though the trains have been providing fairly satisfactory services, there is a need for smart and reliable transportation system. The major problems experienced by the passengers are undue waiting time at ticket counters for platform tickets and to board the train. Thus, a system is proposed with smart application using RFID tags and IoT to provide an agile and smooth ticketing experience.

The Proposed work replaces the frameworks of the queue based system and ATM ticketing system. In order to avoid the chaos of platform ticket buyers in ticket counters, this infrastructure provides a separate access by allocating a different pavement to buy the platform tickets. It maintains a manifest of DBMS for check in and check out of platform ticket user's.

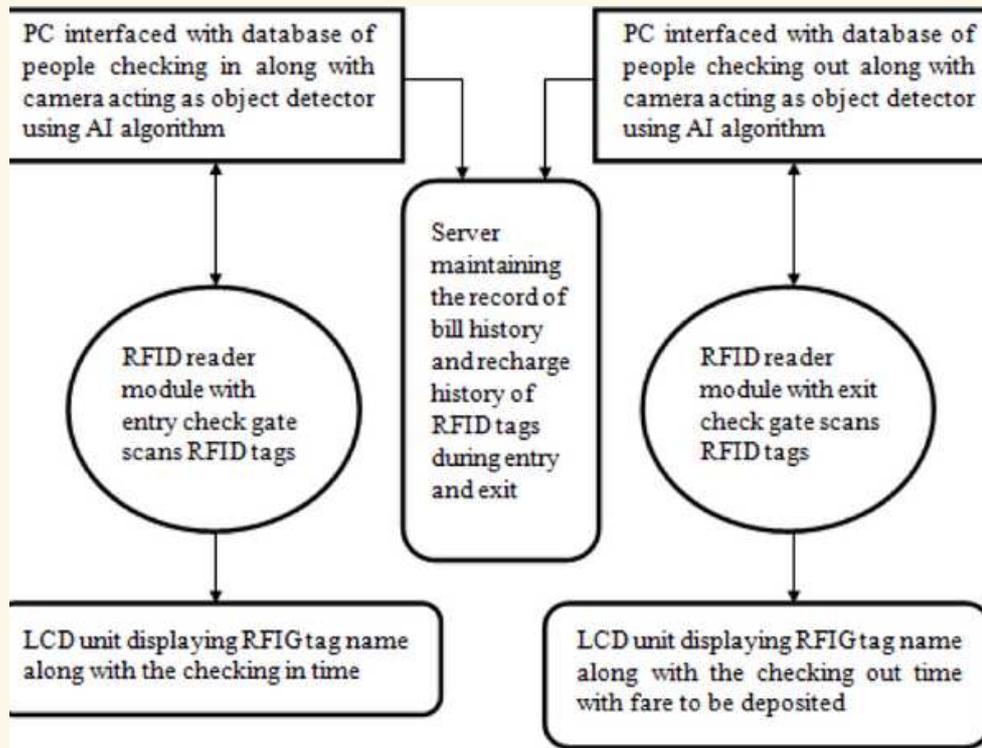
To experience very comfortable and smart booking service, the proposed framework has been enabled with digital payments such as UPI, Gpay and EDC machine through a multilingual app.



The LCD shows about the RFID tag details with required programmed particulars. First, the YoloV3 environment must be activated to create a separate virtual environment to access the packages in the anaconda prompt. When we execute these codes in anaconda prompt it will open and provide access to all the packages. In order to detect the objects, the object detection codes are implemented on python platform.

After the implementation of AI code it will show the test results of the object this code, it will access the pc via interface to access the platform ticketing application which collects the RFID tag name along with the check-in and check-out time with the balance fare in the card which is formed by the basis of MySQL and Apache under Ampps software.

OUTPUT OF THE PROPOSED SYSTEM:

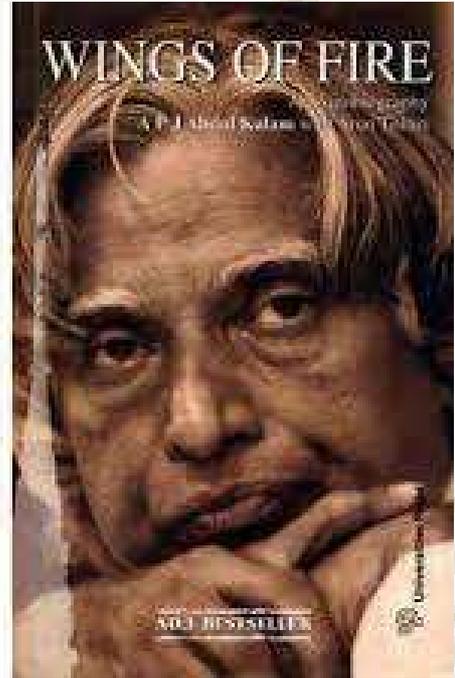


**M.SABARI VIGNESH,
IV EEE B**

Book Review:

Wings of Fire by Dr. APJ Abdul Kalam

Wings of Fire is an autobiography of APJ Abdul Kalam covering his early life and his work in Indian space research and missile programs. It is the story of a boy from a humble background who went on to become a key player in Indian space research/Indian missile programs and later became the president of India.



The book has been very popular in India and has been translated into multiple languages. I recently picked up a copy and read it in a couple of days. It was very engaging initially, but tended to drag a bit towards the end with lot of technical details and procedural information of his space research and missile projects.

Wings of fire covers Kalam's personal life only briefly which is strange for an autobiography.



the book covers a lot of "behind the scene" information and technical details about India's satellite and missile program (SLV-3, Prithvi, Agni, Thrisul, Akash and Nag). This might interest technically inclined readers but is sure to put off readers who bought the book to get to know Kalam or to know his principles/ideas. Space and missile programs are huge complex projects and managing them is extremely challenging. The book does give a glimpse of the participatory management technique adopted by Kalam, but at the same time it doesn't go into details.

Wings of fire covers Kalam's personal life only briefly which is strange for an autobiography. For example, we don't know why he decided to remain single or his activities outside space research (even though we can conclude in the end that he was married to science and technology).

Kalam is a poet and is a huge fan of poems. The book contains many of his own poems and his favorite poems

" Do not look at Agni
as an entity directed upward to deter the ominous
or exhibit your might.

It is fire in the heart of an Indian.

Do not even give it the form of a missile as it clings to the
burning pride of this nation and thus is bright."

Through Wings of Fire, we come across some brilliant
people who worked behind Indian space research such
as Vikram Sarabhai and Dr. Brahm Prakash. The book
also contains about 24 photos and I found the ones from
the early days of Indian space program very interesting.
This alone is worth the price of the book!



M.SHARVENA
III EEEE-B

IDIOMS AND PHRASES



1. Chew The Fat:



MEANING:

To gossip or make friendly small talk. A bit old-fashioned.

EXAMPLE:

"I could sit and chew the fat with you for hours."

ORIGIN:

The phrase began to be used in the early 20th century for gossips. One theory suggests that the phrase comes from the convention of chatting whilst chewing on the leftover fat after a meal. Another theory suggests that the sailors used to chew salted beef and pork on deck whilst they complained about life.

2. Straight From The Horse's Mouth



MEANING:

Getting information directly from the most reliable source.

EXAMPLE:

"I don't believe it that she did it. I'm going to ask her and hear it straight from the horse's mouth."

ORIGIN:

In 1990s, buyers used to determine horse's age by examining it's teeth.

3. *Face The Music*



MEANING:

Receive punishment or accept unpleasant consequences of your action.

EXAMPLES:

I told you not to try to sneak in, and now you've have to face the music for your worst act.

ORIGIN:

The precise origin of this phrase is not known, but there are theories which are not proven. One theory says that it was originated in the military, where disgraced officers were dismissed after facing band music. This phrase originated in America in the mid 1800s.

4. Beat Around The Bush



MEANING:

Not speaking directly or precisely.

EXAMPLE:

Why can't you get straight into the point instead of beating around the bush?

ORIGIN:

The origin of this phrase lies in medieval hunting. During bird hunts, some participants would rouse the birds by beating the bushes so that the others could hunt them. The phrase is a very old and the first written reference is from a medieval poem "Generydes - A Romance in Seven-line Stanzas" in 1440, which mentions "beat the bush". The UK version of the phrase is "beat about the bush", while the American version is "beat around the bush" and is newer and more popular today.

5. Bite The Bullet



MEANING:

To endure a painful experience that you cannot avoid.

EXAMPLES:

Mary has to bite the bullet and face her fears of flying.

ORIGIN:

This phrase originated in the medieval times, before the discovery of anaesthesia, when soldiers were wounded in battle and have to be treated or undergo surgery, they were made to bite on something hard to keep them from screaming out in pain. On the battlefield, what was mostly available was a bullet or a leather strap. So soldiers bit the bullet to be able to endure the pain of surgery without anaesthesia.

BY,

J.JESHPA

II EEE- B

Poems

>>

உடைகள் என்பது உயுக்கு அழுதி
அழுதி என்பது பார்தும் உணர்வு
உணர்வு என்பது உள்ள இடுப்பது
இடுப்பரிதன்பது இல்லாமல் போவது

- D. NANDA

GOPAL

D. NANDAGOPAL

|| EEE-B

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தங்கத்தின் மாயத் தோற்றம் (Mysterious of gold)

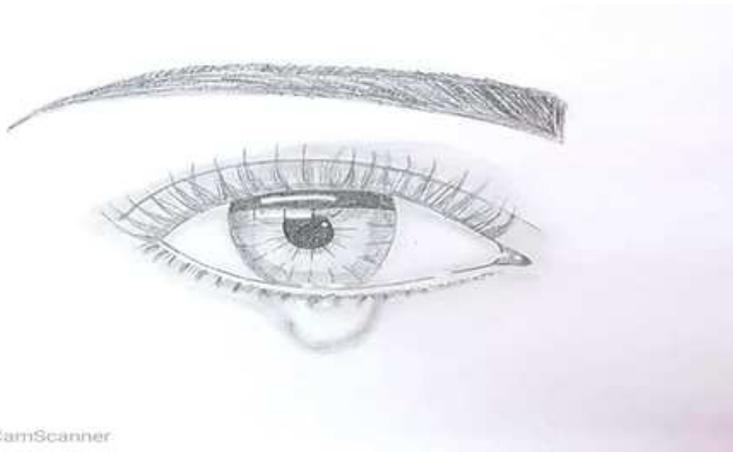
பளபளப்பு மஞ்சளும் உறுதியும் குளிர்ச்சியும்
உடைய மர்ம சக்தி உடைய தங்கம்
கைக்குள் அடங்கும் !
இருட்டிலிருந்து இரும்பு பெட்டியில் பதுங்கும்
உலோகம் வாய்குவதோ கடினம் !
மஞ்சள் தங்கமாய் வெளிச்சத்திற்கு வந்தால்
உகைத்தை ஆட்டுவீக்கும் !
அடிபணியாதவனை அடிபணிய வைக்கும் !
உயிரற்ற தங்கம்
ஐதிகளையும், மதங்ககளையும்,
கினங்ககளையும் சேர்க்கவும் -
பிரிக்கவும் செய்யும் !
திருடர்கள் , கொலைக்காரர்கள் ,
அரசு பிரதிநிதிகள்
மற்றும் பணகாரர்கள்,
ஏழைகள் அனைவரையும்
ஆசைக்குள்ளாக்கி
அடிமைகளாக்கி
கோடானு கோடி மக்களின்
சவக்குழி வரை தொடரும்
எண்ணற்ற குற்றங்களுக்கும்
நோய்களுக்கும் காரணம் தங்கம் !
நன்மையோ தீமையோ உயிரற்ற
தன் பெயரை எல்லாரும் உச்சரிக்க செய்யும்
மாய உலோகம் !
கிறந்தக்காலத்தில், நிகழ்காலத்தில், எதிர்காலத்தில்
காக்கவும், அழிக்கவும், கெடுக்கவும், கொடுக்கவும்
செய்யும் மந்திர உலோகம் தங்கம் !
கைக்குள் அடங்கும் தங்கத்திற்காக
புதிய நிலப்பகுதிகள் கண்டுபிடிக்கப்பட்டு
பல நாடுகள் உருவாகின !
தற்போதைய விஞ்ஞான வளர்ச்சி,
தங்கத்திற்காக புதிய தனிமங்கள்
கண்டுபிடிக்கப்பட்டதின் விளைவே !
நீர், காற்று, நெருப்பு , ஆக்கறாஸ் , ஆசிட
எதற்கும் அசையாத மஞ்சள் நிற தங்கம் என்றால் !
உடலும், உள்ளமும் , உகைமும்
பிரகாசிக்க செய்யும் ! பூரிக்கவும் செய்யும் !

ஸ்ரீநிவேதா

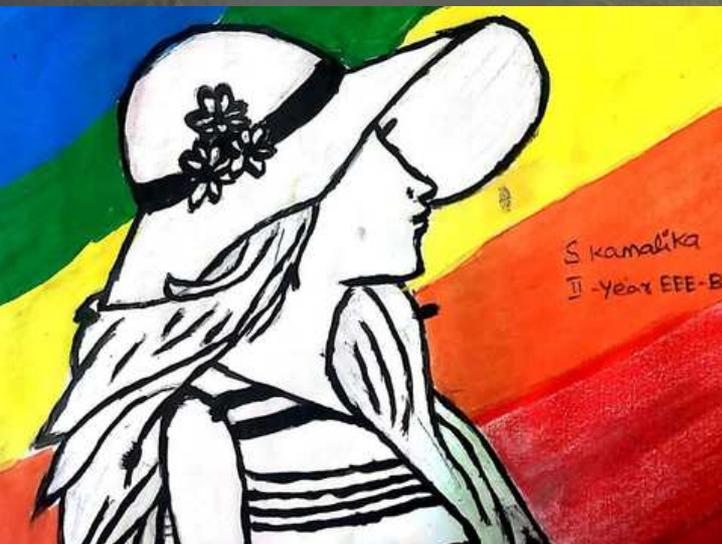
SRI NIVETHA



ART WORK



ASHA BANU J
II YEAR
EEE-B



S.KAMALIKA
II YEAR
EEE-B



S.ASHWINI II
EEE-B



MATHUMITHA
C.S
EEE-B





Inspiration is like a spark. It can light the whole city. One frail lady with strong conviction has motivated thousands of others to have good education and be proud citizens. One Velammal has kindled the spirit of Thousands of Velammalians.



**VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF EEE**

