

Mahatma Education Society's  
Pillai HOC College of Arts, Science and Commerce, Rasayani  
(Accredited by NAAC & ISO 9001:2015 Certified)

## 3.2. QIM.

# Innovation Ecosystem

(FROM AY 2017-18 TO AY 2021-22)



*Datam*  
Principal  
Mahatma Education Society's  
Pillai's HOC College of Arts  
Science and Commerce  
HOC Educational Campus,  
Rasayani, Tal. Khalapur,  
Dist. Raichur, PIN - 410 207

**Mahatma Education Society's  
Pillai HOC College of Arts, Science and Commerce, Rasayani  
(Accredited by NAAC & ISO 9001:2015 Certified)**

## **3.2.1 QIM.**

**Institution has created an ecosystem for innovations and has initiatives for creation and transfer of knowledge (patents filed, published, incubation center facilities in the HEI to be considered)**

**(FROM AY 2017-18 TO AY 2021-22)**

**Academic Year**  
**2021-22**  
**Supporting Documents**



महाराष्ट्र MAHARASHTRA

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ZS 389725

25 MAR 2022

धुरवठ्याचा दिनांक  
उपकोषागारा। नांदे-भनदेल,  
जि. रायगड.

उप कोषागार अधिकारी  
भनदेल - रायगड



RSV

जोडपत्र-१ / Annexure - 1  
रकत प्रतिगणनासाठी

मुद्रांक विक्री नोंदवही अनुक्रमांक 604 दिनांक 06/04/2022  
 मुद्रांक विक्रीत घेणाऱ्याचे नांव महात्मा एज्युकेशन सोसायटी  
 रहिवाशी पत्ता न राहिले रसायनी  
 हस्त केसलबास स्थाने नांव, पत्ता न राहिले पद्मभानाभन वणमिळ  
 परवानगीसाठी मुद्रांक विक्रीत घेणाऱ्याचे पत्ता  
 वी. लक्ष्मण कृष्ण वेंकटेश्वर रावसायनी, बघवई  
 पत्तेवेल, अहमदनगर - पत्तेवेल ६१००१७ (सी. सुजित विठ्ठल परदेशी)  
 या कारणासाठी घेणाऱ्या मुद्रांक खरेदी करून घ्यावे. या खरेदी कर घेणाऱ्यांनी मुद्रांक खरेदी केला पाहिजे.  
 पत्तेवेल बायलें बंधनवत्तक आहे.

MEMORANDUM OF UNDERSTANDING (MoU)



Between  
Research and Innovation Cell,  
Mahatma Education Society's  
Pillai HOC College of Arts, Science and Commerce, Rasayani

And  
Dnyan Foundation, Nagpur



Mahatma Education Society's

College Code: 870

## PILLAI HOC COLLEGE OF ARTS, SCIENCE & COMMERCE

Pillai HOCL Educational Campus, HOC Colony, Rasayani, Via. Panvel, Dist. Raigad. Pin 410207  
Tel: 02192 - 669000 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09

Website : [www.phcasc.ac.in](http://www.phcasc.ac.in) Email : [phcasc@mes.ac.in](mailto:phcasc@mes.ac.in)

*Affiliated to the University of Mumbai, Approved by Government of Maharashtra*

This Memorandum of Understanding (MoU) is entered into on the 30<sup>th</sup> of March 2022 Between Pillai HOC College of Arts, Science and Commerce, Rasayani run by Mahatma Education Society having its registered office at Pillai HOCL Educational Campus, HOC Colony, Mohopada, Rasayani, hereinafter referred to as "PHCASC" and Dnyan Foundation, an NGO which is located at Nirmitti Elite, Near Rama Nagar, Badil Kheda, Nagpur, Maharashtra 440027 hereinafter referred to as "Dnyan Foundation" with regards to conducting of various research and patent related activities/workshops to be functional for a period of three academic years from this day on (till 30<sup>th</sup> March 2025).

### General Objective:

This Memorandum of Understanding (MoU) between PHCASC and Dnyan Foundation is to stimulate and facilitate the development of collaborative and mutually beneficial research programmes and activities which serve to benefit the students and faculty in the area of research.

### Areas and Modes of Collaboration

Mahatma Education Society's Pillai HOC College of Arts, Science and Commerce, Rasayani and Dnyan Foundation, Nagpur, have agreed that in support of their mutual interest in providing practical education system and developing research skills of students, both the parties will have following understandings:

1. To promote research work in participating institutions.
2. To exchange information on research programmes.
3. To provide practical education system.
4. To develop research skills of students and faculty members.
5. To organize events, seminars, conferences or workshops on research and patents.
6. To promote research culture among students and faculty members.

### **Amendments/Modifications**

This MoU may be amended or modified by a written agreement signed by the representatives of both the institutes.

### **Adherence of Laws**

Participating teaching staff and students involved in any activities under this memorandum must adhere to the law, rules and regulations of the host institutions.

### **Legal Effect**

Nothing in this Memorandum shall be construed as creating any legal relationship between the parties. This Memorandum is a statement of intent for mutually beneficial collaboration. In case, there is a dispute relating to any aspect of academic cooperation, the parties will jointly resolve the dispute in a spirit of independence, mutual respect, and shared responsibility.

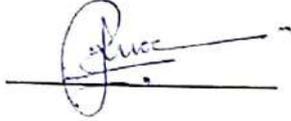
### **Duration of the MoU**

This MoU, unless extended by mutual written consent of the institutes, shall expire in three years after the effective date specified in the opening paragraph. However, on review, the MoU may be renewed by mutual consent.

This MOU is at will and may be modified by mutual consent of both the parties. This MOU shall become effective upon signature by the authorized signatories from both the parties and will remain in effect until modified or terminate by any one of the parties or by mutual consent.

Signed

By Dr. Ajinkya Ravindra Kottawar  
Founder & President of Dnyan Foundation



(Signature)

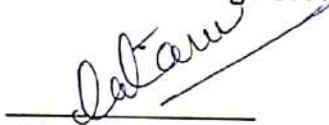


Signed

By Dr. Lata Menon

Principal

Pillai HOC College of Arts, Science and Commerce, Rasayani



(Signature)

Principal  
Mahama Education Society's  
Pillai's HOC College of Arts  
Science and Commerce  
HOC Educational Campus,  
Rasayani, Tal. Khalapur,  
Dist. Rajgad, PIN - 410 207





## GEH RESEARCH LLP

GEH RESEARCH, A-19-21, IHONBASHIHAKOZAKICHŌ, CHŪŌ-KU, TŌKYŌ-TO-103-0015, JAPAN  
GEH RESEARCH, E-101 KITCHAWAN RD, YORKTOWN HEIGHTS, NY 10598, UNITED STATES  
GEH RESEARCH, G-12, LAVELLE ROAD, BENGALURU, KARNATAKA-560001, INDIA  
E-mail: [gehresearch@yahoo.com](mailto:gehresearch@yahoo.com), [patent.indiajapan@yahoo.com](mailto:patent.indiajapan@yahoo.com)  
[www.gehresearch.com](http://www.gehresearch.com)  
<https://www.indiancompany.info/llp/geh-research-llp/>

To

**Dr. Archana Bhagwat, Dr. Vishakha Telgote**  
**MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE**  
**RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.**

**Ongoing Project - Status:**

**Date: 18/10/2021**

**File No.:** 4645/GEH-Research/policy-1/2020-21/954

**Project Title:** CASEIN DETERMINATION IN MILK.

**Scheme:** Core Reserch Grant/ Extramural Reserch

**Area:** Science and Engineering

**Technology transferred:** Yes (MES- MAHATMA EDUCATION SOCIETY'S)

**Total Cost:** 24,980.00

**Project Status:** 20% Completed

**Started date:** 30/09/2021

**End Date:** 30/12/2021

**Name of the Industry /Organization:** GEH Research LLP.

**Address:** GEH RESEARCH, G-12, LAVELLE ROAD, BENGALURU, KARNATAKA-560001, INDIA

**Name of Competent Authority and Designation:** Dr. R. Singh (Director)

**Industry Web Address:** [www: gehresearch.com](http://www.gehresearch.com), <https://www.indiancompany.info/llp/geh-research-llp/>

**Brief Details on Industry:** (Product: 1: Innovative Idea Convert into a Patent, 2: Patent idea Convert into a Prototype, 3: Granted Patent Products Develop. 4: Fund Provide Any Patented Idea Convert into a Products. **Turnover:** 10Cr. **Expertise:** Research and Innovation.

**Accomplishment of Industry Partner:**

1: Training providers. 2: Companies that provide testing services, both on and off site. 3: Real -time Patent Products Develop and design Help.4: Companies may employee both Practitioners and Industry Partners.

**Prof. (Dr). R. Singh**  
**(Reg. Patent Attorney, Patent Lawyer)**  
**Post.Doc. (Japan), Ph.D. (Law), LLM, LLB.**

AAR-4645-GEH RESEARCH





## GEH RESEARCH LLP

GEH RESEARCH, A-19-21, IHONBASHIHAKOZAKICHŌ, CHŪŌ-KU, TŌKYŌ-TO-103-0015, JAPAN  
GEH RESEARCH, E-101 KITCHAWAN RD, YORKTOWN HEIGHTS, NY 10598, UNITED STATES  
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E-mail: [gehresearch@yahoo.com](mailto:gehresearch@yahoo.com), [patent.indiajapan@yahoo.com](mailto:patent.indiajapan@yahoo.com)  
[www.gehresearch.com](http://www.gehresearch.com)  
<https://www.indiancompany.info/llp/geh-research-llp/>

To

Dr. Jayanta Kumar Behera, Dr. Sapana Chilate  
MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE  
RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.

Ongoing Project - Status:

Date: 18/10/2021

File No.: 4645/GEH-Research/policy-1/2020-21/955

Project Title: Device to Detect the Fruit order and natural product (Apple) Disease

Scheme: Core Reserch Grant/ Extramural Reserch

Area: Science and Engineering

Technology transferred: Yes (MES- MAHATMA EDUCATION SOCIETY'S)

Total Cost: 24,980.00

Project Status: 10% Completed

Started date: 05/10/2021

End Date: 28/12/2021

Name of the Industry /Organization: GEH Research LLP.

Address: GEH RESEARCH, G-12, LAVELLE ROAD, BENGALURU, KARNATAKA-560001, INDIA

Name of Competent Authority and Designation: Dr. R. Singh (Director)

Industry Web Address: [www: gehresearch.com](http://www.gehresearch.com), <https://www.indiancompany.info/llp/geh-research-llp/>

Brief Details on Industry: (Product: 1: Innovative Idea Convert into a Patent, 2: Patent idea Convert into a Prototype, 3: Granted Patent Products Develop. 4: Fund Provide Any Patented Idea Convert into a Products. Turnover: 10Cr. Expertise: Research and Innovation.

Accomplishment of Industry Partner:

1: Training providers. 2: Companies that provide testing services, both on and off site. 3: Real -time Patent Products Develop and design Help.4: Companies may employee both Practitioners and Industry Partners.

Prof. (Dr). R. Singh  
(Reg. Patent Attorney, Patent Lawyer)  
Post.Doc. (Japan), Ph.D. (Law), LLM, LLB.

AAAR-4645-GEH RESEARCH



**FORM 2**  
**THE PATENT ACT 1970 &**  
The Patents Rules, 2003  
**COMPLETE SPECIFICATION**  
(See section 10 and rule 13)

**TITLE OF THE INVENTION:**

**FLSA-System:** Fifth-level Authentication System (Mobile, Laptop, PC, Locker, Etc.)

Name	Nationality	Address
<b>Applicant</b>		
<b>MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE</b>	AN INDIAN NATIONAL	MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.
<b>Inventors</b>		
<b>DR. LATA MENON</b>	AN INDIAN NATIONAL	MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA. E-mail: latakam@mes.ac.in
<b>LALIT MAHATO</b>	AN INDIAN NATIONAL	MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.
<b>YASH KHOPKAR</b>	AN INDIAN NATIONAL	MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA..
<b>PRIYA SHARMA</b>	AN INDIAN NATIONAL	MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.
<b>MS. DARSHANA WAJEKAR</b>	AN INDIAN NATIONAL	MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.
<b>MR. RAVI BARI</b>	AN INDIAN NATIONAL	MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.

**Complete Specification**

## ABSTRACT

Our Invention FLSA-System: Fifth-level Security Authentication System (Mobile, Laptop, PC, and Locker) is executives of data innovation assets and administrations are altered with the appearance of mapped Cloud Computing. *The Fifth level of security 1: 6- Digit Password 2: Voice as a name, 3: Finger Print, 4: OTP, 5: ID- No. as a Voice.* Is the current system and this procedure is loosened up in this innovation with the ultimate objective that one more level of security assuming client required, added. The customer capabilities in this procedure are conveyed to the specialist in encryption interesting plan. A key is delivered for each login to encode customer nuances. The assessment of the created method is done by learning the computational cost and correspondence cost of the proposed procedure. A strategy and framework for assessing data security and fostering a compelling data security foundation for an element utilizes a data security assessment model having for instance, five levels (select at the registration time) with changing qualities which clarify where the element remains as to dangers and weaknesses to its data security anytime.

## **FIELD OF THE INVENTION**

[001] Our Invention is related to a **FLSA-System**: Fifth-level Security Authentication System.

## **BACKGROUND OF THE INVENTION**

[002] The Verification is a significant segment of most PC frameworks, particularly those utilized in administrations over the web. In the present data and WWW age, each day a large number of clients' entrance different data administrations and applications over the web which requires secure verification of legitimate clients.

[003] there is numerous methods of validating one's authenticity. The conventional way is to utilize a solitary factor verification which requires the client to enter his ID and secret phrase to get confirmed. However, this methodology endures with numerous shortcomings, for example,

1) Users will in general pick straightforward and simple to recall passwords rather than solid alphanumeric passwords which debilitates their record security.

2) A User might have numerous online records with various specialist co-ops and since recalling username/secret word blend of that load of records is troublesome, client once in a while pick same secret phrase on every one of the records making the record helpless against insider assault, word reference assault and so forth or the client will in general compose it on invention which might release their privileged data.

[004] to resolve these issues, scientists have proposed picture based secret word verification procedures called numeric graphical passwords which are viewed as solid and easy to understand. These are sorted as Recall based and Recognition based.

[005] Thus, to give secure and easy to use verification, the security specialists are unequivocally prescribing the online specialist co-ops to convey two factor confirmation systems to fortify security without compromising client comfort.

[006] In this section, the above issues are tended to by proposing an easy to use staggered validation instrument which permits the client to unreservedly pick simple to recall passwords dependent on a portrayal of clients individual pictures. At login, clients review and enter their secret word by seeing their pre-chosen pictures.

[007] Associations, everything being equal, for instance, independent companies, just as huge organizations, are as of now at different degrees of safety regarding data frameworks, like their PC frameworks and organizations, which present changing degrees of business hazard in their day by day tasks.

[008] For the most part, such associations have no successful method to decide if they are data security keen and regardless of whether they have the appropriate projects and administrations set up to be considered canny with respect to the security of their data.

[009] Further, regardless of whether they have a few frameworks set up to manage episodes which might think twice about security of their data, they have no viable method to ensure whether they are in a profoundly ready condition of preparation or essentially a fair condition of status if a particularly occurrence happens. Nor do they have a powerful method to assess whether specific projects which might be set up are set up at the ideal highlight manage such occurrences.

[010] a significant number of such elements work under the mixed up presumption that their data is secure or, for instance, that an interloper or programmer would not be spurred to attempt to access their data frameworks.

[011] Moreover, numerous such elements erroneously accept that their representatives know about and in consistence with the substances' prerequisites for keeping up with and working in a tied down climate comparative with the elements' data frameworks.

[012] such substances work under the supposition, yet with no affirmation, that data comparative with their items and administrations is classified and will stay private. They expect that their degree of hazard for a security break is low, when without a doubt the degree of hazard of such a break might be extremely high. Such unjustifiable suppositions themselves make an extra degree of business hazard.

[013] Different endeavors have been made to resolve the issues related with assessing and creating viable data security frameworks at various degrees of organizations with various degrees of refinement utilizing different degrees of innovation. Some of such endeavors work in certain pieces of business, and others work on data innovations as it were.

[014] some are invention-based. Nonetheless, none have been especially fruitful or compelling in including, characterizing, and arranging weaknesses, hazard, and dangers and giving data security framework arrangements at all degrees of business and innovation.

[015] There is a current need to give a somewhat basic and productive strategy and framework for assessing existing data security and for fostering a viable data security foundation.

## **OBJECTIVES OF THE INVENTION**

- 1) The Objective of the invention is to provide a **FLSA-System**: Fifth-level Security Authentication System (Mobile, Laptop, PC, and Locker) is

executives of data innovation assets and administrations are altered with the appearance of Cloud Computing. The level of security 1: 6- Digit Password 2: Voice as a name, 3: Finger Print, 4: OTP, 5: ID- No as a Voice.

- 2) The other Objective of the invention is to provide a ban the current strategy and this technique is stretched out in this invention with the end goal that another degree of safety is added.
- 3) The other Objective of the creation is to give a customer capabilities in this procedure are conveyed to the specialist in encryption plan. A key is delivered for each login to encode customer nuances.
- 4) The other Objective of the creation is to give an assessment of the concocted method is done by learning the computational cost and correspondence cost of the proposed procedure.
- 5) The other Objective of the invention is to provide five levels with changing qualities which clarify where the element remains as to dangers and weaknesses to its data security anytime.

## **SUMMARY OF THE INVENTION**

[016] yet, for the webbased systems like cloud, the security should be connected over the transmission channel as well. In cloud environment-each and every information-relating to customer approval is sent from customer to the cloud specialist for check and insistence.

[017] in such a case, there is a lot of chance for the attacker to intrude. To prevent this, concocted strategy gives security by changing the mysterious word with some encryption advancement. The mysterious key is consequently unscrambled by the laborer in the wake of getting the gathering key from the customer.

[018] the gathering key is genenrated basing on the data limits during login. The encryption time required for is given. The time expected to execute the designed method can be contemplated is given as:

[019] at customer side:

$$4y + d + 18y + 168y + 288y + 240 y$$

At worker side:

$4y + 18y + 168y + 288y + 240$  'y' in the above verbalization tends to the time required for one fundamental movement and "d" addresses the time expected to go over the association that contain sections.

[020] the numerical characteristics given in the verbalization are taken around. As such, the numerical characteristics can be considered as a reliable C1. Then, the

enunciation can be created as:  $y.C1$  for time taken by the specialist and  $y.C1 + d$  for time taken by the client machine. The value of 'd' in the above enunciation, moves sometimes due to the availability of association or the delay, blockage, signal strength in the association, etc.

[021] To see a graphical mystery key, a customer gets a scrap of information for encryption from the specialist as OTP during login. To a great extent the OTP may be conceded in the association transmission and customer may interest for resend of the OTP.

[022] The Consequently, 'd' endless supply of all the above said factors in the association and also the correspondence cost in the designed technique is 30 pieces for graphical and other required mystery word and 72 to 240 pieces for scholarly mystery state, which isn't by and large that procured.

[023] Anyway the time required for the proposed plan is more to execute than the current systems, it gives better security to the customer accreditations in the cloud environment than the current strategies.

[024] It is a component and advantage of the current creation to give a procedure and structure to evaluating and encouraging an amazing information security establishment which portrays a lot of controls for looking over and compensating for shortcomings in each various leveled part, for instance, development and business measures.

[025] It is a further element and benefit of the current innovation to give a strategy and framework to assessing and fostering a data security foundation which outfits a method for characterizing and arranging the level of hazard related with data resources, where the danger is characterized as the financial worth, worth or openness or the reputational effect of a data resource.

[026] It is another element and benefit of the current creation to give a strategy and framework to assessing and fostering a data security foundation which helps an association in deciding the idea of dangers or weakness to the association's data frameworks.

[027] It is an extra element and benefit of the current creation to give a strategy and framework to assessing and fostering a data security foundation which bears the cost of apparatuses for evaluating and investigating the effect of dangers to an association's data frameworks and prescribes answers for manage such dangers.

[028] To accomplish the expressed and different elements, benefits, and articles, an encapsulation of the current creation strategy and framework for assessing data security for a substance which utilizes a data security assessment model lattice having, for instance, five distinct levels with shifting attributes which clarify where the element remains concerning data security hazards at some random time.

[029] the strategy and framework for an exemplification of the current development incorporates, for instance, distinguishing at least one data security assets identified with a data security space of the element, like a hierarchical climate region, a business responsibility region, an arrangement and guidelines region, and a data security projects and administration space of the element. The ID can be performed either physically or can be gotten on a PC program running on a PC, like a PC.

[030] In the strategy and framework for an exemplification of the current development, the data assets identified with the authoritative climate space of the element relates, for instance, to at least one corporate construction assets and obligation and responsibility assets.

[031] The business responsibility space of the element relates, for instance, to at least one administration assets, financing assets, occurrence the board assets, mindfulness and instruction assets, tasks assets, data possession assets, and data order assets.

[032] the approach and guidelines space of the substance relates, for instance, to at least one presence and upkeep assets and requirement and estimation assets. The data security projects and administrations space of the element relates, for instance, to at least one counteraction assets, identification assets, and confirmation assets.

[033] In the strategy and framework for an encapsulation of the current creation, data is gotten around at least one data security attributes for the recognized data security asset which is characteristic of a pre-characterized hazard level for the data security of the substance and which likewise demonstrates a pre-characterized level of availability of the element to manage a danger to the data security of the element.

[034] The pre-characterized levels of preparation incorporate, for instance, a smug degree of status, an affirmation level of availability, a reconciliation level of status, a typical practice level of preparation, and a persistent improvement level of preparation. In like manner, the data can be assembled and gotten physically or can be gotten by entering on the PC program running on a PC, like a PC.

[035] Portable security frames a vital part of a business' general security methodology. The utilization of cell phones impacts all size organizations from little to huge, featuring the requirement for a powerful portable security arrangement. Recently, Gartner Research delivered a report posting five degrees of versatile security that can assist business with leading an evaluation.

[036] the every business ought to evaluate their own reaction and groundwork for portable security while likewise considering the degree of safety needed for their particular necessities. A few associations like medical care and monetary require a

more significant level of safety because of the affectability of data traded and the administrative consistence necessities.

[037] Then again, a few organizations direct a strong portable commitment with clients and organizations the same. A far reaching arrangement will think about the manner in which portability works inside a given business.

- 1) Level 1 – Defined Basic
- 2) Level 2 – Plan Managed
- 3) Level 3 – Unique Structured
- 4) Level 4 – Numeric Strategic
- 5) Level 5 – Programmable Optimizing

[038] Developments up each level requires a venture of assets inside the association and the higher two levels clearly take the most time and cash to carry out. Not all associations require a similar degree of portable security.

[039] as you consider your business according to the security levels recorded underneath recall that Integracon can assist you with fostering an essential arrangement for addressing all your security arrangements from versatility to organizations to security reviews.

If it's not too much trouble, remember us for all your security challenges.

### **Level 1 – Defined Basic**

[040] At an essential level, numerous associations have an ambiguous thought of the requirement for some sort of versatile security, however they do not have a consciousness of portable uses inside the organization and different security challenges that are now present.

[42] At this level, organizations are basically starting to discuss the requirement for security and the particular difficulties of their given association. Frequently, organizations end up in conversation because of a security issue that was associated with cell phones.

[43] There might be some restricted safety efforts set up, yet they are not overseen reliably if by any means, and practically zero spending plan has been saved for versatile security. The vital test at this level is to get the board support as far as obligation to foundation improvement and strategy authorization.

### **Level 2 – Plan Managed**

[44] As associations get familiar with their present difficulties and the business benchmarks for versatile security, they can start to address difficulties by alleviating dangers and shutting holes in security. The administration related to a security advisor has started to zero in on the specific difficulties and fosters an arrangement of reaction.

[45] This will include building up and executing versatile approaches, presenting medium level safety efforts, carrying out cell phone the board (MDM), continuous security wellbeing checks, and some sort of fundamental profiling and job based admittance.

### **Level 3 – Numeric Structured**

[46] The move of level 2 to even out 3 will be a significant test, yet will likewise bring about the emotional improvement of versatile security. Presently the board has put resources into a versatility administrator who assumes liability for portable security.

[047] MDM is presently pushing ahead in an organized way with proactive security arrangements being carried out among labor force as a well as a far reaching security plan for portable admittance to email and schedule.

[048] The business is following industry-wide accepted procedures including things like decommissioning gadgets and far off cleaning measures inside a brief period (48 hours). The organization is additionally directing customary reviews with infiltration testing, and progressed security instruments are set up for overseeing gadgets, applications, content and that's only the tip of the iceberg.

### **Level 4 – Numeric Strategic**

[049] Changing from level 3 to 4 requires speculation and extensive combination endeavours. Organizations with consistence necessities ordinarily focus on level 4-security. Portable security at this stage in coordinated inside the general security methodology of the organization.

[050] At this level, business should fulfil explicit guidelines like danger oversight, direct contribution from the security division, on-going input about portable security imparted to security office to assist with melding key arranging. On-going assortment of safety measurements and reaction plans assume a critical part at this level. The product at this level backings progressed MDM with granular control.

### **Level 5 – Programmable Optimizing**

[051] Level 5 is for organizations that consider portability the essential driver of business development. These business use versatility vigorously for A2Band P2P commitment, at this level, organizations are driving change in portable security and in any event, prompting programming organizations for future portable security improvement. In these cases, the CIO might assume a vital part in portable security and may consistently cover versatility to the board.

## **BRIEF DESCRIPTION OF THE DIAGRAM**

FIG.1: FLSA-System: Fifth-level Authentication System (Mobile, Laptop, PC, And Locker) Flow.

FIG.2: FLSA-System: Fifth-level Authentication System (Mobile, Laptop, PC, And Locker)

Block Diagram

FIG.3: FLSA-System: Fifth-level Authentication System (Mobile, Laptop, PC, And Locker)

Login Display

## **DESCRIPTION OF THE INVENTION**

[52] The created procedure relies upon cream strategy which uses more than one security module. The best strength of this technique is no module woks independently. For example, if an assailant gets either text based or graphical mystery key of a customer, it alone doesn't work. The ensuing mystery word moreover is major for login.

[53] Another security point in this procedure is, for-every three progressive disillusionment-of customer UI, the confirmation shuts down and the ID is hindered for 24 hours with no past alarm given to the customer.

[54] In this fragment the correspondence and estimation cost of the proposed strategy is surveyed all together separate the viability of the computation.

[55] In the proposed methodology X-OR, X-NOR undertakings and association exercises are used at client similarly as laborer side. The computation and correspondence cost of proposed technique are given in Where 'x' addresses time required for performing one basic operationTipl –

[56] Time needed for offering contributions to login

Ta – Time needed for change into ASCII

Tb – Time needed for change into paired

Tc – Time needed for connection tasks

Tx – Time needed for X-OR activities

M – Memory needed for secret key

Cc – correspondence cost of secret key.

[57] The correspondence cost consolidates the constraint of imparting message drew in with the affirmation plot. At the customer side the constraint of transmission is: For text secret expression it shifts from 234 parts of 456 pieces. The image data base involves 6000 pictures and each and every image has an intriguing plan number related with it. For graphical and other required mystery key the photos are not sent over the channel to the laborer.

[58] But, the quantities of pictures are shipped off the worker and the worker matches them with the current picture secret phrase in the data set. Cloud based Web Application Firewalls (WAF) like Imperia can be utilized for additional assurance from SQL infusion assaults.

[59] Methods like Escaping, approving information, and Sanitizing can likewise be utilized to forestall X-Scripting or Cross Site Scripting assaults. Affirmation is one such issue. Especially for Password Authentication System, there is a risk of shoulder riding attack. This assessment presents an amazed non-graphical mystery word affirmation part by widening a current procedure. Client irected non-Graphical Password Scheme for Cloud using Caesar Cipher Technique.

[60] The assessment can be performed physically or naturally by a PC program running, on a PC, like a PC and incorporates, for instance, distinguishing at least one data assets of the element, getting data around at least one data security attributes for the recognized asset, sorting the data security trademark or qualities as indicated by a pre-characterized chain of command of hazard levels, and evaluating a level of business hazard for the element dependent on the arrangement.

## **WE CLAIMS**

1. Our Invention FLSA-System: Fifth-level Authentication System (Mobile, Laptop, PC, and Locker) is leaders of information advancement resources and

organizations are modified with the presence of Cloud Computing. The degree of safety 1: 6-Digit Password 2: Voice as a name, 3: Finger Print, 4: OTP, 5: ID-No as a Voice. Is the current procedure and this strategy is loosened up in this innovation with the ultimate objective that one more level of security is added. The customer capabilities in this methodology are conveyed to the laborer in encryption plan. A key is delivered for each login to encode customer nuances. The assessment of the proposed procedure is done by discovering the computational cost and correspondence cost of the proposed system. A technique and structure for evaluating information security and encouraging a convincing information security establishment for a component uses an information security appraisal model having, for example, five levels with changing characteristics which explain where the component stays as to risks and shortcomings to its information security whenever.

2. According to claim1# the development is to an Invention Fifth-level Graphical Password Authentication System (Mobile, Laptop, PC, and Locker) is chiefs of information advancement resources and organizations are modified with the presence of Cloud Computing. The degree of safety 1: 6-Digit Password 2: Voice as a name, 3: Finger Print, 4: OPT, 5: ID-No as a Voice.

3. According to claim1, 2, 3# the development is to boycott the current methodology and this procedure is loosened up in this creation with the ultimate objective that one more level of security is added.

4. According to claim1, 2, 3# the development is to customer capabilities in this methodology are imparted to the specialist in encryption plan. A key is created for each login to encode customer nuances.

5. According to claim1, 2, 3, 4# the development is to an assessment of the proposed procedure is done by learning the computational cost and correspondence cost of the proposed methodology.

6. According to claim1, 2, 5# the development is to five levels with changing characteristics which explain where the component stays as to risks and shortcomings to its information security whenever.

**Science and Engineering Research Board**  
Established through an Act of Parliament: SERB Act 2008  
Department of Science & Technology (DST)  
**Government of India**  
**SERB-TETRA**

**Last Date: 20/10/21**

**PROJECT PROPOSAL SUBMISSION TO .....**

**Project Proposal Title: "SV-Calculator: Scientific Voice Calculator"**

**Patent Application no: 202121043253**

**Submitted to:** MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.

**Name of the Scheme:** SERB-TETRA

**Project Duration:** 24-Months

**Total Cost:** 28,00,000.00

**Principal Investigator:**

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**Department:** commerce

**Designation:** Assistant Professor

**DOB:** 08/12/1987

**Organization/Institution Name:** MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA.

**Sex (M/F/Others):** F

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**Designation:** Assistant Professor

**DoB:** 12/09/1990

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**Sex (M/F/Others):** F

**BUDGET PROPOSED FOR THE PROJECT:**

**(A)Recurring):24-Months**

Sr.no	Budget Head	Year-1 Amt.(Rs.)	Year-2 Amt.(Rs.)	Total (Rs.)
1	Manpower Budget PI-: @25000 Co-PI-1: @25000. Co-PI-2: @15000.00	7,80,000.00	7,80,000.00	15,60,000.00
2	Consumables	3,20,000.00	3,20,000.00	6,40,000.00
3	Travel	1,00,000.00	1,00,000.00	2,00,000.00
4	Equipment :	<b>available</b>	<b>available</b>	N/A
5	Contingencies (Possible Future Situation)	50,000.00	50,000.00	1,00,000.00
6	Other Costs	1, 50,000.00	1,50,000.00	3,00,000.00
7	Grant Total (Rs.)	14,00,000.00	14,00,000.00	<b>28,00,000.00</b>

**1.Budget for Salary/ Wages**

Sr.no	Budget Head	Year-1 Amt.(Rs.)	Year-2 Amt.(Rs.)	Total (Rs.)
1	Manpower Budget PI-: @25000 Co-PI-1: @25000. Co-PI-2: @15000.00	7,80,000.00	7,80,000.00	15,60,000.00

**2.Budget for Consumables Materials**

Sr.no	Budget Head	Year-1 Amt.(Rs.)	Year-2 Amt.(Rs.)	Total (Rs.)
2	Consumables	3,20,000.00	3,20,000.00	6,40,000.00

**3. Budget for Travel**

Sr.no	Budget Head	Year-1 Amt.(Rs.)	Year-2 Amt.(Rs.)	Total (Rs.)
3	Travel	1,00,000.00	1,00,000.00	2,00,000.00

**4. Budget for Equipment- N/A****5. Budget for Contingencies (Possible Future Situation)**

Sr.no	Budget Head	Year-1 Amt.(Rs.)	Year-2 Amt.(Rs.)	Total (Rs.)
5	Contingencies (Possible Future Situation)	50,000.00	50,000.00	1,00,000.00

**6. Budget for Other Costs**

Sr.no	Budget Head	Year-1 Amt.(Rs.)	Year-2 Amt.(Rs.)	Total (Rs.)
6	Other Costs	1, 50,000.00	1,50,000.00	3,00,000.00

**(B) Non-Recurring**

Permanent Equipment: 20, 00,000.00 (Research and Development lab)

Grand Total (A+B): 48, 00,000.00

**RESEARCH ABSTRACT**

Our invention VBI- Calculator: Voice Based Intelligent Calculator is a Base  $(No)_n$  convert into a  $[Base (No)_{n+1} \text{ Or } Base (No)_{n-1}]$  battery fueled hand-held number cruncher for performing Number system converter, mathematical and logarithmic capacities. The scales are graduated in hexadecimal base numbers and decimal base numbers for use in making traditional math and logarithmic activities in both hexadecimal and decimal bases and for changing over between voice based users inputs defined based. An electronic adding machine or microchip arrangement of the sort ideally having console input and a visual presentation is executed with a semiconductor chip having a hexadecimal/paired coded decimal configuration number-crunching unit for performing number-crunching procedure on numeric information inputted by the console further, the framework ideally incorporates an information, a location register receptive to the information, a guidance word memory for putting away various guidance words and addressable because of the location put away in the location register, and guidance word decoder rationale for interpreting guidance words yielded from the guidance word memory and for controlling the number-crunching unit accordingly thereto. A minimized electronic number cruncher involving a screen, electronic circuits, a mouthpiece, voice acknowledgment circuits which are replaceable relying on the setting of the verbal information to be gotten by the mini-computer and the language where the information is given.

**KEYWORD:** Intelligent Calculator, Number Cruncher, Electronic Adding Machine, Decoder Rationale, Electronic Circuits.

### **RESEARCH FIELD**

Our Invention is related to a **SV-Calculator**: Scientific Voice Calculator.

### **RESEARCH BACKGROUND**

The adding machine of the current development remembers a clock mode for which the mini-computer amasses and shows the hour of day (continuous) or, on the other hand can be set to show the time occasions occur (stopwatch), the slipped by time between occasions or the past season of a few occasions starting simultaneously and finishing at various occasions (parts).

Activity of the clock mode depends on a significantly steady number of program guidelines executed by the mini-computer each 100th of a second as constrained by an expert oscillator.

During clump handling, the memory of a PC is regularly unloaded to allow a cautious assessment by developers or frameworks investigators. This unloading system is most effectively acted in a hexadecimal framework if the PC gathers double pieces in gatherings of four.

Ordinarily, the recipient of such a dump posting ought to translate the exercises of the machine program similar to the more normal decimal numbering system. The

change between the decimal and hexadecimal base structures is an inconvenient strategy and limits the accommodation of dump postings.

It would be extraordinary if the machine customer had the alternative to be as acquainted with a hexadecimal structure as he is in a decimal system. In the event that this was possible, he would not be conceded with the change between the two bases. The current improvement permits the customer to perform commonly logarithmic and number shuffling undertakings in a hexadecimal base and convert among hexadecimal and decimal.

Regardless the above handiness of this creation to the programmer and systems engineer, it is a particularly significant gadget for showing the essential thoughts of number juggling. For example, the significant exercises of math and polynomial math are liberated from the numerical base used. Incredibly, these thoughts are regularly trained in a way which convinces the understudy to feel that they are only significant in the conspicuous decimal system.

With the current advancement, the instructor may show various huge number shuffling and arithmetical norms in the less unmistakable hexadecimal base and a while later difference the last answers and the decimal results. Further, it isn't unexpected significant for a teacher to change over numbers in another structure, for instance, hexadecimal, to a decimal system while explaining the principal associations between number structures.

The analyst of this creation engages the instructor to perform assessments in the hexadecimal system and convert to decimal rapidly and definitively, thusly further fostering his educating ability. It should be esteemed that there are no known tables in presence of the hexadecimal logarithms of hexadecimal numbers, conveyed in hexadecimal.

Since these tables don't exist, the introduction of various arithmetical and mathematical assignments in hexadecimal base is particularly inconvenient even to one skilled in the craftsmanship. With the current turn of events, regardless, reference to such tables becomes unnecessary and the recently referenced errands are immediately performed.

The increase, extension, allowance, and division exercises including hexadecimal numbers have, until this time, been performed through perplexing tables and procedures, by far most of which are ordinarily implied back to a decimal base. The current creation makes even the most difficult assessments in hexadecimal base tolerably simple to perform.

The ideas of these earlier applications have made conceivable huge decreases in the expense of little close to home size adding machines. Proceeding with endeavors to decrease the expense of these items incorporate the plan of a solitary chip adding machine framework for use in huge limit mini-computers, for example, logical or business number crunchers.

The chip uncovered thus might be used in logical or business adding machines for example, since this chip has arrangements for various capacity registers, notwithstanding functional registers, just as adequate ability to address the more muddled numerical articulations and capacities utilized in logical and business number crunchers including, for instance, geometrical and logarithmic connections.

The current development identifies with a hexadecimal/parallel coded decimal organization number juggling unit for a chip and all the more explicitly a hexadecimal/twofold coded decimal configuration number-crunching unit for an electronic adding machine. A whole Elec calculator framework including the hexadecimal/parallel coded decimal math unit of this innovation is revealed.

The electronic adding machine uncovered is a sequential, word coordinated mini-computer; in any case, the math unit of this development isn't restricted to the kind mini-computer framework revealed. Electronic adding machines of the earlier craftsmanship have ordinarily been operable in a solitary mode, for example, in parallel coded decimal arrangement.

While a particularly single mode number-crunching unit might be appropriate for use in performing ordinary number-crunching capacities, it has been discovered that if the information being applied to the math unit addresses, for example, either the sensible status of tasks happening inside the mini-computer or twofold coded decimal (BCD) numerals that having a number-crunching unit which consequently preforms the legitimate activities in parallel coded decimal.

## **RESEARCH OBJECTIVES**

1. The objective of the invention is to provide a further article in the achievement of the chief object of the development to enlist the outcomes in both the paired and octal frameworks.
2. The other objective of the invention is to provide a further article in the achievement of the chief item to enter either parallel or octal qualities into the machine.
3. The other objective of the invention is to provide a counter register of a working out machine esteems numerated either in the twofold. Octal or decimal framework.
4. The other objective of the invention is to provide a e-empower section into a computing machine of a multiplier factor in either the twofold, octal or decimal arrangement of numeration.
5. The other objective of the invention is to provide a specifically condition the division system of an ascertaining machine, by a solitary manual stroke, to begin and afterward to stop the division activity after remainder finishing in every one of a majority of orders. 7
6. The other objective of the invention is to provide benefits of the current creation will become obvious from the accompanying standard.
7. According to claim 1# the invention is to a VBI- Calculator: Voice Based Intelligent Calculator is a Base  $(No)_n$  convert into a  $[Base (No)_{n+1} \text{ Or } Base (No)_{n-1}]$  battery

fueled hand-held number cruncher for performing Number system converter, mathematical and logarithmic capacities.

8. The other objective of the invention is to provide a an electronic adding machine or microchip arrangement of the sort ideally having console input and a visual presentation is executed with a semiconductor chip having a hexadecimal/paired coded decimal configuration number-crunching unit for performing number-crunching procedure on numeric information.
9. The other objective of the invention is to provide a memory for putting away various guidance words and addressable because of the location put away in the location register; and guidance word decoder rationale for interpreting guidance words yielded from the guidance word memory and for controlling the number-crunching unit accordingly thereto.
10. The other objective of the invention is to provide a minimized electronic number cruncher involving a screen, electronic circuits, a mouthpiece, voice acknowledgment circuits which are replaceable relying on the setting of the verbal information to be gotten by the mini-computer and the language where the information is given.

## **RESEARCH SUMMARY**

The current innovation identifies with working out machines of the sort known as work area number crunchers conversely, with the huge scope fast electronic succession mini-computers, and especially concerns work area mini-computers in which twofold as well as octal qualities might be entered and which perform computations with such qualities to show results which might be perused straightforwardly in the paired or potentially octal framework.

As particularly far as known, the utility of a work area type double octal number cruncher, stems primarily from the huge scope electronic adding machines which should be customized and set up for hundreds and ordinarily a great many successive computations during a solitary program. Since the majority of the huge scope number crunchers work in the twofold framework, an enormous piece of the programming should be done in the paired framework.

Up to this time, double computations occurrence to programming have been finished by paper and pencil, and it has been discovered that by the long hand strategy on paper, twenty minutes or more are needed to play out a solitary increase including a thirty digit paired multiplicand and multiplier; while, the machine of the current innovation requires under six seconds to play out a parallel augmentation issue of a similar greatness.

Different employments of the work area type twofold octal mini-computer regarding the enormous scope machines are too various to even think about referencing exhaustively, yet as instances of a couple of the many uses, it could be noticed that during their development, the huge machines should go through broad checking by free estimations generally in the double framework, and when

the machines are placed into utilization it every now and again becomes vital during different phases of the program of consecutive computations to enter paired variables, all requiring numerous autonomous computations of parallel numbers which should be possible on the machine of the current innovation at an extraordinary saving of time.

The normal office representative is curious about with the octal and twofold frameworks of documentation, in this manner talented mathematicians have up until now been needed to play out the primer and free estimations episode to the programming and checking of the previously mentioned huge scope mini-computers.

The machine of the current innovation, then again, makes it workable for the normal office worker, practicing no more expertise than would be needed to work any business work area mini-computer, to play out the heft of such estimations, along these lines mitigating the mathematicians for more beneficial utilization of their time.

It is consequently a chief object of the current innovation to give a computing machine in which the passage keys and gatherer register numeral wheels which bear indicia communicated in the paired arrangement of numeration, and to mediate between the section keys and the collector register, an ascertaining component that is operable in the octal framework.

Likewise, it is an object of the current development to give a control proper to a perceptible yield gadget executed with strong state hardware for finding an ideal number of respite or quiet openings of time throughout the conveyance of discernible messages of time.

A primary element of the current development dwells in that interruption codes are set up to find these respite or quiet openings during the conveyance of a full-length discernible message of refreshed time, the delay codes being fit for being taken care of likewise to semantic data codes demonstrative of words to be perceptibly shown (e.g., "tadaima", "kara", "go", "ji", and so forth)

All the more especially, a perceptible yield gadget as per the current development contains a store implies for putting away the semantic data codes characteristic of words to be discernibly shown, a first control implies for bringing the phonetic data codes in preselected request from the store implies, a discernible yield implies receptive to the principal control implies for conveying perceptible words as per the etymological data codes brought from the store implies, and a subsequent control implies operatively connected with the delay codes for permitting the interruption codes to be put away inside the store implies along with the phonetic data codes.

The etymological data codes and the respite codes from the store implies in the preselected request of the words to be discernibly shown and the perceptible yield

stop time allotments, and a discernible yield hindrance implies receptive to the interruption codes from the store implies for incapacitating the perceptible yield implies for an ideal period of time. Discernible messages conveyed from the perceptible yield gadget are made as normal as consistently discussion due to differing lengths of the stops as chosen by the presence of the delay codes.

**RESEARCH BRIEF DESCRIPTION OF THE DIAGRAM**

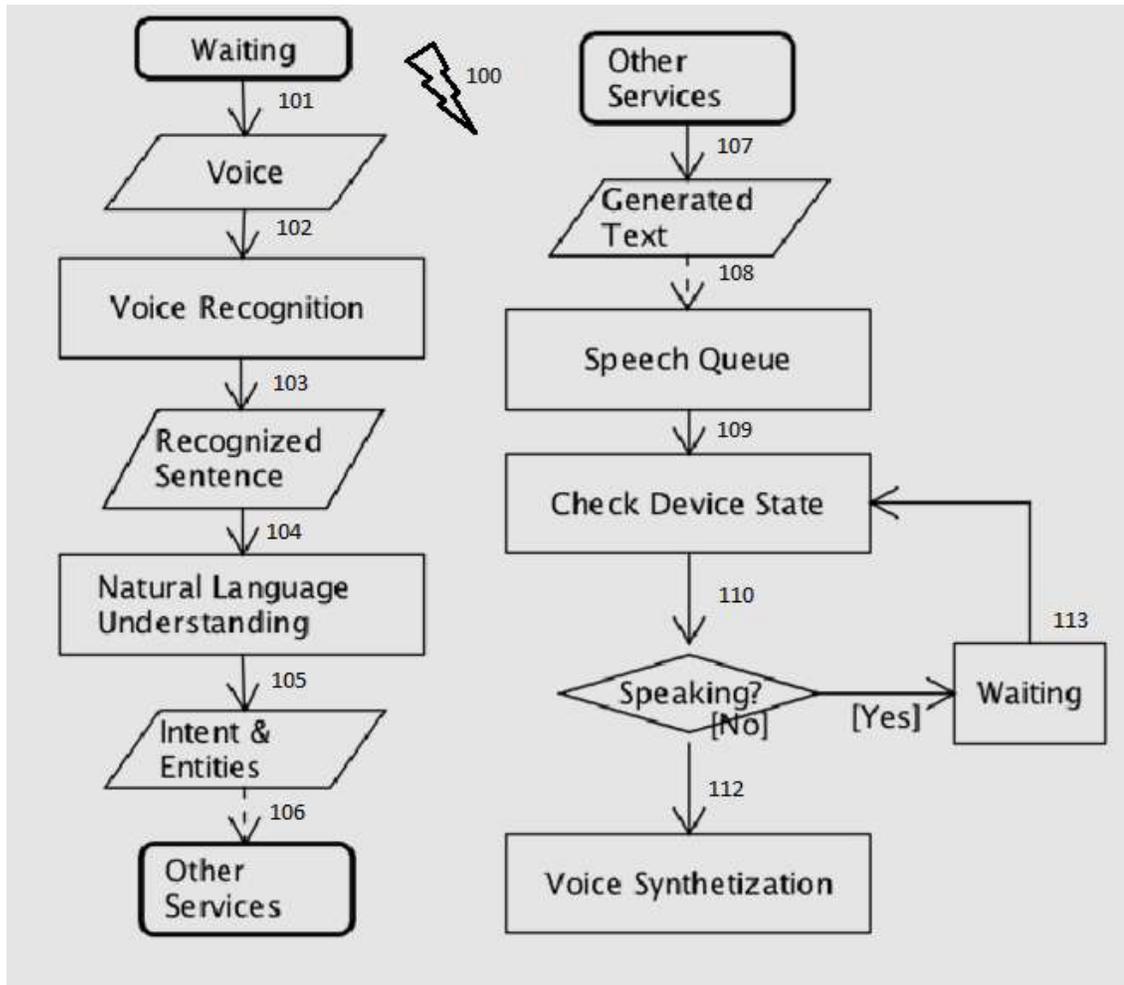


FIG.1: **SV-Calculator**: Scientific Voice Calculator, Flow Chart.

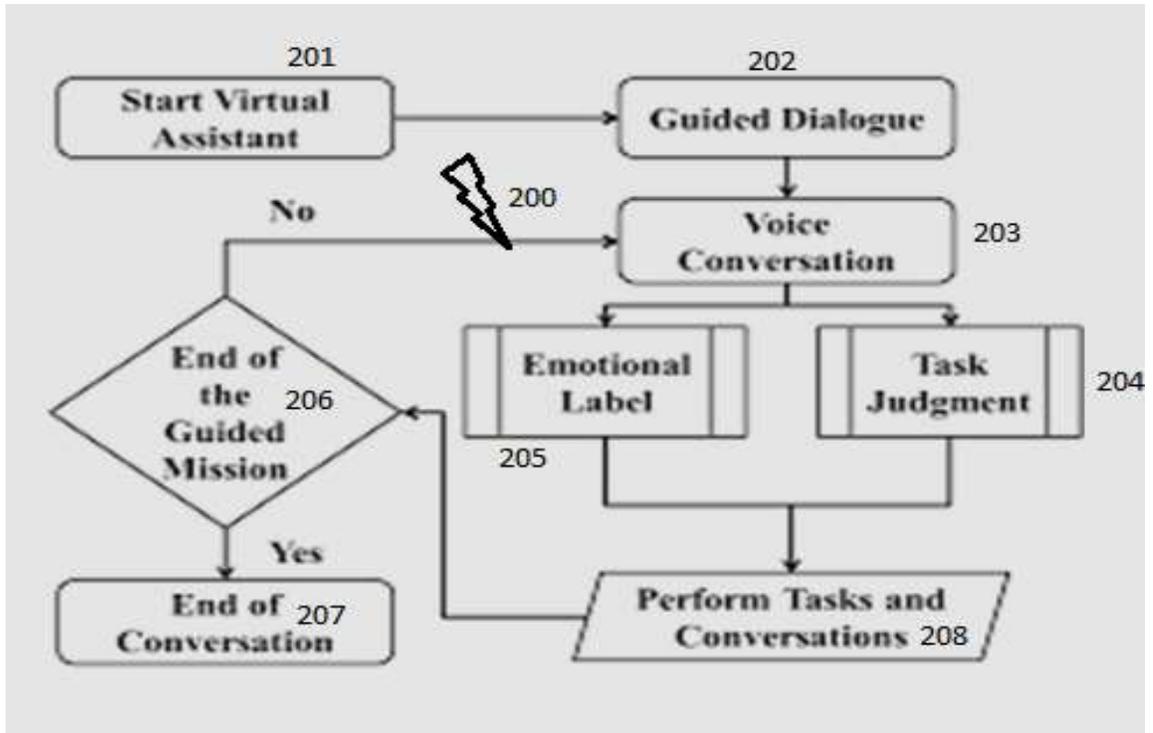


FIG.2: **SV-Calculator**: Scientific Voice Calculator, Block Diagram.

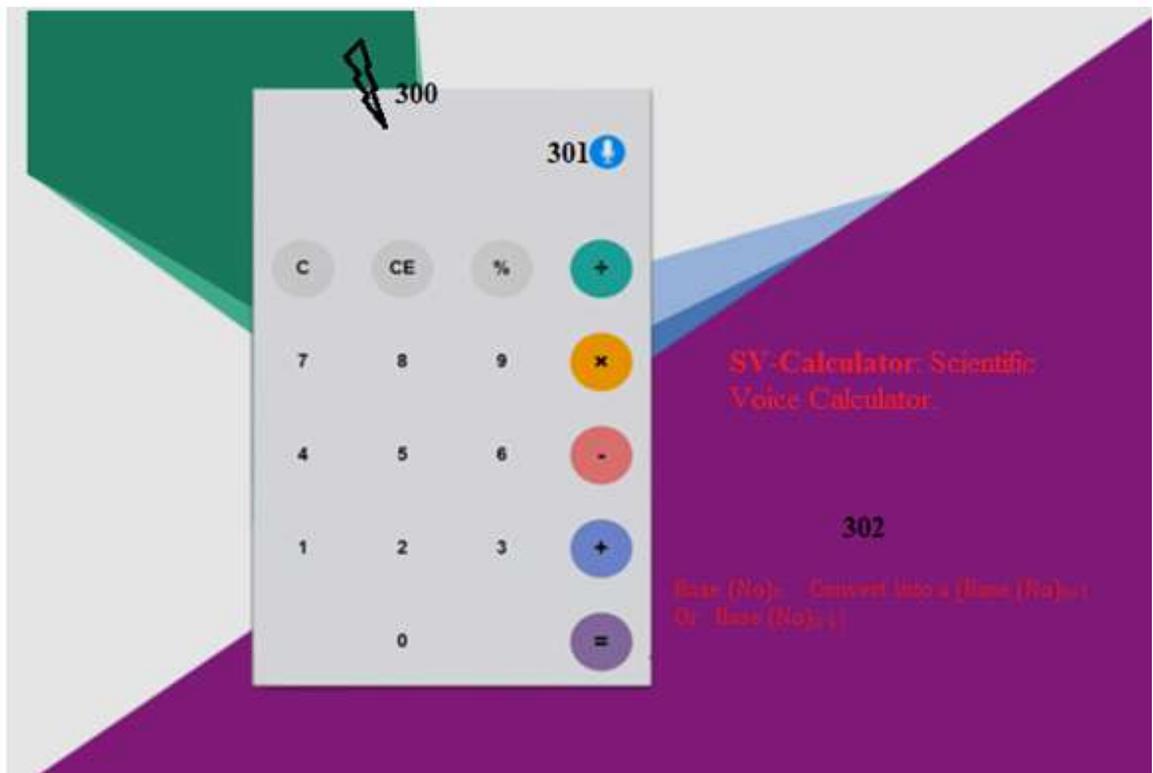


FIG.3: **SV-Calculator**: Scientific Voice Calculator

**RESEARCH DESCRIPTION OF THE INVENTION**

**Method:**

1. Decimal No convert into a binary no.
2. Decimal No convert into a base-3 no.
3. Decimal No convert into a Base-4 no.
4. Decimal No convert into a Base-5 no.
5. Decimal No convert into a Base-6 no.
6. Decimal No convert into a Base-7 no.
7. Decimal No convert into a Base-8 no.
8. Decimal No convert into a Base-9 no.

**Reverse Method**

1. Binary No convert into a Decimal no.
2. Binary No convert into a Base-3 no.
3. Binary No convert into a Base-4 no.
4. Binary No convert into a Base-5 no.
5. Binary No convert into a Base-6 no.
6. Binary No convert into a Base-7 no.
7. Binary No convert into a Base-8 no.
8. Binary No convert into a Base-9 no.

**Intelligent Method:**

1. Base  $(No)_n$  convert into a  $[Base (No)_{n+1} \text{ Or } Base (No)_{n-1}]$

Generally speaking, the calculator of this improvement joins a base part and a hexadecimal base scale thusly having hexadecimal numbers graduated in rising solicitation. The numbers are organized to detach the length of the scale into a greater part of segments described by indicia identifying with the hexadecimal numbers 1 through 10.

The indicia are unmistakably coordinated to isolate the scale into 15 critical segments, with each piece having graduations contrasting with fragmentary portions of all of the above hexadecimal numbers. The general spots of the numbers in regards to the start of the scale are a part of the hexadecimal logarithm of each number. Marker suggests versatile similar with the base part are obliged adding extends identifying with picked pieces of the scale and showing a resultant worth therefore.

Preferably, the overall spots of the hexadecimal base numbers in regards to the start of the scale are directed by the relationship  $I (\log, 0 \log m l0)$ , where  $I$  is the decimal depiction a hexadecimal number some place in the scope of 1 and 10 whose position on the scale isn't settled forever, and  $L$  is a sum tending to the incredible length of the scale.

For a straight scale,  $L$  tends to the full length of the scale in inches or centimeters for example, and for a round scale,  $L$  locations 360. The hexadecimal base scale

enables the customer of the calculator to perform standard increase and division of hexadecimal base numbers rapidly and unequivocally.

The save assets of time is liberal while considering that clear duplication of two hexadecimal base numbers requires glancing through hexadecimal increase tables for the aftereffects of single hexadecimal numbers and subsequently passing on and including a way suggested by hexadecimal extension relations. This strategy is monotonous whether or not tables of hexadecimal increment and development are open.

This development further recollects a movement of various scales for use for mix with the recently referenced hexadecimal base scales to permit increase, division, exponentiation, squaring, and the taking of square roots and logarithms in, concerning, and conveyed in a hexadecimal base.

An opposite hexadecimal base scale having an amazing length identical to that of the above-depicted hexadecimal base scale is given hexadecimal base numbers graduated likewise as the hexadecimal base scale, yet in the contrary bearing.

The numbers on the opposite hexadecimal base scale in a perfect world are planned to logarithmically isolate the length of the scale into 15 huge parts, with indicia contrasting with the hexadecimal numbers 1 through 10. The marker strategy for this creation is flexible near with the base means for adding extends identifying with picked portions of either the hexadecimal base or the converse hexadecimal base scale and showing resultant characteristics on both of the scales.

The opposite hexadecimal base scale is particularly important in playing out different exercises in hexadecimal including a couple of increments and divisions without the need of recording fragmentary things or leftovers.

This development further gives a hexadecimal logarithm scale to use in blend in with the hexadecimal base scale. The hexadecimal logarithm scale has hexadecimal base numbers straightforwardly graduated in climbing demand and obviously planned to parcel the scale into 16 bits of comparable length.

The scale's fundamental indicia identify with the hexadecimal parts between and 1, that is, 0, .1, .2, .3, .4, .5, .6, .7, .8, .9, .A, .B, .C, .D, .E, .F, and 1.0. The hexadecimal logarithm scale is used to discover hexadecimal mantissas of hexadecimal logarithms of numbers browsed the hexadecimal base scale.

The scale may moreover be used to figure exponentials of hexadecimal numbers in hexadecimal. The hexadecimal logarithm scale is moreover used in blend in with a collinear decimal logarithm scale (a straight depiction of the decimal parts some place in the scope of 0 and 1.0) and a pointer means to change over divisions between the hexadecimal and decimal bases. Also, fixed direct extension and derivation toward three tremendous figures in hexadecimal, at whatever point needed, is performed using the hexadecimal logarithm scale.

To address a wide extent of numbers, the so-called floating point documentation is used by mathematicians and PCs the equivalent. In this depiction a number is tended to as a section times a power of the base; for example, the decimal base number 684 would be tended to as  $0.684 \times 10$ . In an equal structure the number 11001.11 would be tended to as  $0.110011 \times 10$  where last factor 10 is the twofold depiction of the number 2, that is, the establishment of the twofold system.

The sort 101 is the twofold depiction of the hexadecimal (and decimal) number 5 which identifies with number of spots that the matched point has been moved aside. Different PCs work in a twofold system anyway express results in a hexadecimal base; that is, a floatingpoint number is tended to in memory as a hexadecimal part some place in the scope of 0.1 and 1.0 events a hexadecimal power of 10, such numbers should be in normalized structure.

The current improvement diminishes the difference in the kinds of such numbers to clear and fast exercises through hexadecimal powers of ten scale used in mix with a customary decimal base scale, i.e., a C or D scale. This scale is useful in changing over hexadecimal powers of the compute 10 their decimal reciprocals.

Change of extraordinarily tremendous and small drifting point numbers between the decimal and hexadecimal bases is as often as possible irksome and drawn-out considering the way that what may be contrasted with a hexadecimal power of 16 i.e., 10 not really set in stone. The hexadecimal powers of ten scales-lessens such changes to uncommonly fundamental and accurate assignments.

This advancement further considers usage of decimal change scales in blend in with the hexadecimal base scale for changing hexadecimal numbers over to decimal numbers just as the reverse way around. Each decimal change scale has an effective length identical to that of the hexadecimal base scale, and has decimal base numbers graduated in rising solicitation from  $16^{-4}$  to  $16^4$ , where M may address any number including 0. A best extent of scales fuses the entire numbers from 3 to +4.

The general spots of the numbers concerning the scale is a component of the hexadecimal logarithm of each number. Being utilized, fixed-point decimal increment and division can be performed using the decimal change scales, and resultant decimal characteristics can be expeditiously changed over to their specific hexadecimal reciprocals on the hexadecimal base scale. On the other hand, hexadecimal duplication and division can be performed using the hexadecimal base scale, with resultant characteristics being changed over rapidly into their decimal partners on the decimal change scales.

The advancement relates to a more modest electronic calculator like a pocket or wrist little PC, given a screen, electronic circuits and something like one working contraptions. Acknowledged number crunchers are, gave a control center through which the calculators are worked.

Such known calculators, paying little mind to how more modest their improvement is, are reasonably lumbering a result of the presence of the control center. Further, with known number crunchers for basic and quick action of the control center a particular proportion of association is ordinarily required.

The advancement is to chip away at alluded to calculators to give a bit and diminished electronic analyst who can be worked adequately with close to zero related information.

As shown by the turn of events, the analyst is given no short of what one working contraption which is affected by human voice that causes numerals or conceivably pictures to be followed through on the screen.

The development further contains an analyst having a recipient which is planned to get fundamentally only strong from a particular course whereby the movement of the smaller than expected PC is improved.

Further the advancement contains an analyst which is worked by voice affirmation and is given includes exchangeable activities to different tongues so that, the calculator is adaptable to be viably usable in various lingos.

The showing the outcomes thereof is furnished with a clock mode which plays out the capacity of a clock and shows constant or the capacity of a stopwatch and stores and shows the occasions at which recorded occasions have occurred. A working out gadget containing a base part, a majority of graduated scales organized on the base part and pointer implies helping out the scales for playing out an assortment of estimations.

The math unit is operable in a first mode for giving a yield from the number-crunching unit in parallel coded decimal configuration and in a subsequent mode giving a yield from the number-crunching unit in hexadecimal organization. The mini-computer is consequently receptive to numerals and images communicated in a chose language or dialects and this is changed through the hardware of the adding machine to be seen on an extended presentation unit. A mini-computer is additionally receptive to activity words, for example, "increase", "partition", "add" and "take away", with the goal that the number cruncher does these capacities on the showed numerals and images. The number cruncher doesn't have a console and is of a little size, roughly ten centimeters long, one centimeter in width and one-half centimeter inside and out. It very well may be fused in a pen structure or, in a more modest variant, fused into a wristband or something like that. The mouthpiece is ideally unit-directional in spite of the fact that it might likewise be with the end goal that it gets voice signals from various bearings. The number cruncher is movable so unique chose acoustical decibel levels might be needed to impel the adding machine.

## **RESEARCH OUTCOME /CLAIMS**

- 1) Our invention **SV-Calculator**: Scientific Voice Calculator is a Base  $(No)_n$  convert into a  $[Base (No)_{n+1} \text{ Or } Base (No)_{n-1}]$  battery fueled hand-held number cruncher for performing Number system converter, mathematical and logarithmic capacities. The scales are graduated in hexadecimal base numbers and decimal base numbers for use in making traditional math and logarithmic activities in both hexadecimal and decimal bases and for changing over between voice based users inputs defined based. An electronic adding machine or microchip arrangement of the sort ideally having console input and a visual presentation is executed with a semiconductor chip having a hexadecimal/paired coded decimal configuration number-crunching unit for performing number-crunching procedure on numeric information inputted by the console further, the framework ideally incorporates an information, a location register receptive to the information, a guidance word memory for putting away various guidance words and addressable because of the location put away in the location register, and guidance word decoder rationale for interpreting guidance words yielded from the guidance word memory and for controlling the number-crunching unit accordingly thereto. A minimized electronic number cruncher involving a screen, electronic circuits, a mouthpiece, voice acknowledgment circuits which are replaceable relying on the setting of the verbal information to be gotten by the mini-computer and the language where the information is given.
- 2) According to claim1# the invention is to a **SV-Calculator**: Scientific Voice Calculator is a Base  $(No)_n$  convert into a  $[Base (No)_{n+1} \text{ Or } Base (No)_{n-1}]$  battery fueled hand-held number cruncher for performing Number system converter, mathematical and logarithmic capacities.
- 3) According to claim1,2,3# the invention is to a scales are graduated in hexadecimal base numbers and decimal base numbers for use in making traditional math and logarithmic activities in both hexadecimal and decimal bases and for changing over between voice based users inputs defined based.
- 4) According to claim1, 2, 3, 4# the invention is to an electronic adding machine or microchip arrangement of the sort ideally having console input and a visual presentation is executed with a semiconductor chip having a hexadecimal/paired coded decimal configuration number-crunching unit for performing number-crunching procedure on numeric information.
- 5) According to claim1, 2, 4# the invention is to a memory for putting away various guidance words and addressable because of the location put away in the location register, and guidance word decoder rationale for interpreting guidance words yielded from the guidance word memory and for controlling the number-crunching unit accordingly thereto.
- 6) According to claim1,2,5# the invention is to a minimized electronic number cruncher involving a screen, electronic circuits, a mouthpiece, voice acknowledgment circuits which are replaceable relying on the setting of the verbal information to be gotten by the mini-computer and the language where the information is given.

**Funded Project Completed:**

Sanctioned Letter Detailed:4645/GEH-Research/policy-1/2020-21/953



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 Department of Industrial Policy & Promotion,  
 Ministry of Commerce & Industry,  
 Government of India

INTELLECTUAL PROPERTY INDIA  
 PATENTS DESIGN TRADE MARKS  
 GEOGRAPHICAL INDICATIONS

### Application Details

APPLICATION NUMBER	202121054595
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	25/11/2021
APPLICANT NAME	1 . Dr. C K PRASHANT 2 . REMYA MADAN GOPAL 3 . SUPARNA DEEPAK
TITLE OF INVENTION	NOVEL RADAR ABSORBING PAINT FOR MILITARY STEALTH TECHNOLOGY.
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	dr.bksarkar2003@yahoo.in
ADDITIONAL-EMAIL (As Per Record)	prashant.ck@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	17/12/2021

FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	dr.bksarkar2003@yahoo.in
ADDITIONAL-EMAIL (As Per Record)	prashant.ck@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	17/12/2021

### Application Status

APPLICATION STATUS: **Awaiting Request for Examination**

[View Documents](#)

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ipindiaservices.gov.in/PatentSearch/PatentSearch/ViewApplicationStatus

FIELD OF INVENTION	PHYSICS
E-MAIL (As Per Record)	dr.bksar kar2003@yahoo.in
ADDITIONAL-EMAIL (As Per Record)	dr.bksarkar2003@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	17/12/2021

**Application Status**

APPLICATION STATUS: **Awaiting Request for Examination**

[View Documents](#)

→ Filed → Published → RQ Filed → Under Examination → Disposed

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 Department of Industrial Policy & Promotion,  
 Ministry of Commerce & Industry,  
 Government of India

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 GEOGRAPHICAL INDICATIONS

### Application Details

APPLICATION NUMBER	202121056486
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	06/12/2021
APPLICANT NAME	Ms. Remya Madan Gopal
TITLE OF INVENTION	CANCER THERAPEUTICS USING NANOPARTICLES BASED ON WARBURG EFFECT
FIELD OF INVENTION	CHEMICAL
E-MAIL (As Per Record)	remyagopal@mes.ac.in
ADDITIONAL-E-MAIL (As Per Record)	dr.bksarkar@mes.ac.in
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	14/01/2022

Applicant Details.pdf    Request for Patent...pdf    Show all

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 Department of Industrial Policy & Promotion,  
 Ministry of Commerce & Industry,  
 Government of India

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 GEOGRAPHICAL INDICATIONS

### Application Status

FIELD OF INVENTION	CHEMICAL
E-MAIL (As Per Record)	remyagopal@mes.ac.in
ADDITIONAL-E-MAIL (As Per Record)	dr.bksarkar@mes.ac.in
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	14/01/2022

APPLICATION STATUS: **Awaiting Request for Examination**

[View Documents](#)

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13:20 12.05.2022

**Academic Year**  
**2020-21**  
**Supporting Documents**



GLOBAL INTELLECT EDUCATIONAL AWARD  
BY JSR LAB

# *Award Certificate*

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announced on 30<sup>th</sup> November 2021.

**Dr. Samresh Kumar**  
President  
Global Intellect Educational Award



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In recognition of **“Best Research Award for the year 2021”**  
announced on 15<sup>th</sup> December 2021.

A handwritten signature in black ink, appearing to be 'C. Jha', is placed above the printed name of the signatory.

**Dr. Chanakya Kumar Jha**  
Chief Editor & President  
Asian Society for Scientific Research

**Academic Year**  
**2019-20**  
**Supporting Documents**



GLOBAL INTELLECT EDUCATIONAL AWARD  
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**Dr. Samresh Kumar**  
President

Global Intellect Educational Award

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ARTS, SCIENCE AND COMMERCE**

In recognition of **“Best Research Award for the year 2019”**  
announced on 17<sup>th</sup> December 2019.



**Dr. Chanakya Kumar Jha**  
Chief Editor & President  
Asian Society for Scientific Research

Code No. \_\_\_\_\_  
 Session : 2019-20  
 Level - UG

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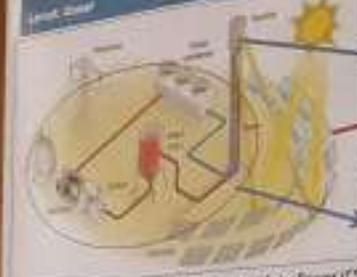
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# Concentrated Solar Power: A modified nonconventional and Efficient Energy Solution

Level: Zonal



Schematic diagram of proposed Concentrated Solar Power (CSP) Model Original CSP plant at Dubai

**Why the Renewed Interest in CSP????**

- Traditional CSP is not new, but not extensively used in India.
- There are only 7 places where the installation of concentrated solar power is going on.
- close resemblance to existing plants but more environment friendly
- It will be more effective in India as India is located near equator.
- concentrated high temperature solar heat substitutes combustion of fossil fuels or heat from nuclear reactors.

**Information on CSP technologies**

CSP technology systems use reflective surfaces to gather and concentrate unscattered solar radiation to create heat.

The requirement for unscattered ("direct normal") radiation limits CSP plants to certain locations, primarily desert regions with limited cloud cover.

Three of CSP technologies use the collected heat to power conventional Rankin steam cycles, similar to those used for coal and nuclear plants.

- Advantages of this model**
1. more than 88% reflectivity of aluminum
  2. very cheap and minimum investment cost
  3. clean energy

A proposed alternative to existing CSP model



- Advantages of this proposed model**
- Low cost power plants.
  - Generation is based on steam and is large scale
  - can be built in small sizes and added to as needed.
  - can achieve high steam operating temperatures, allowing more efficient power generation
  - capable of combined heat and power generation steam for absorption chillers, industrial process heat, desalination
  - Non-carbon emitting power generation
  - Very much portable
  - storage not major part of generation cost
  - size of steam power plant that lacks storage does not have to be increased when storage added
  - added storage cost effective if energy sold at peak hours
  - allows generation to match utility load profile
  - can be hybridized with intermittent renewable

Inter-University Ayubkar Research  
Convention: 2019-2020

Topic: ZINAM

## VOICE CONTROLLED CAR USING ARDUINO

### Introduction

A voice controlled car using Arduino is a self-driving robotic vehicle through which commands are received by android.

The user sends commands through an android app to move the vehicle in Forward, Left, Right Directions.

### Objective

The goal is to implement a software program on hardware. We have achieved this by creating a car system that can be controlled by humans from a distance.

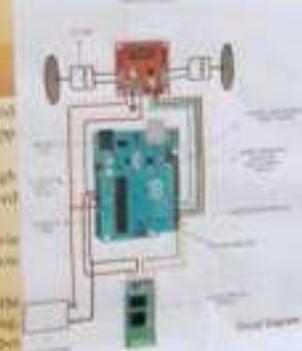
### Working

A connection is established between the android speech recognition app and the Arduino.

When the user gives the command through the android speech recognition app, it is received by the Arduino via Bluetooth.

The commands are received by Arduino via the UART serial communication.

The program voice control checks the received data, if it is a matching string, it controls the movements of the robot (Forward, backward, right& left).



### Components Used

#### Hardware requirements:

- Arduino Uno
- Bluetooth module
- DC motor
- DC motor driver
- 5V battery power source
- Chassis
- Wires
- LED Light (2/White)
- Transistor

#### Software requirements:

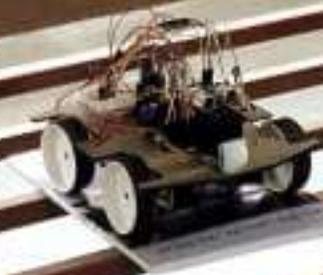
- Arduino IDE
- Android Studio
- VS Code

### Applications

- This voice controlled car can be used for entertainment.
- It can be used as a fire alarm system by using smoke sensors.
- The robot is used to give voice commands for opening doors.

### Scope

- To make this voice control technology can be used in many other applications like in the field of agriculture and in the field of medicine.
- It can be used to make a car that can move in any direction.
- It can be used to make a car that can move in any direction.





NEW KEY TO GENETICS

Grab New Opportunities Daily

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# SUSTAINABLE ECONOMIC DEVELOPMENT AND CLIMATE CHANGE

CATEGORY-UG



Natural Disasters In 2019

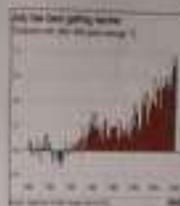
Understanding other than above climate change...  
to know your climate change impact...  
to know your climate change impact...



Understanding other than above climate change...  
to know your climate change impact...  
to know your climate change impact...



Green house emission by country



## SUSTAINABILITY IN ECONOMICS

Sustainable economic growth is growth that meets the needs of the present without compromising the ability of future generations to meet their own needs. It includes economic, social, and environmental aspects.

## What is climate change?

Climate change is a significant and long-term change in weather patterns and atmospheric conditions. Climate change makes the weather less predictable.

Causes of climate change

Climate change is being caused by the greenhouse effect. Greenhouse gases in the atmosphere trap heat, making the planet warmer. Climate change is causing sea level rise, drought, and other problems.

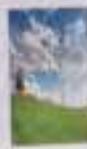
## What is sustainable development?

Sustainable Development is the development that meets the needs of the present without compromising the ability of future generations.

## GREEN TOURISM



## WATER



## SUSTAINABILITY IN CONSTRUCTION



## WATER



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**14th Inter-Collegiate/Institute/Department Avishkar  
Research Convention  
AY-2019-20**

College: Pillai HOC College of Arts, Science and Commerce, Rasayani  
(CODE: 5-07)

**Zone: Raigad District  
Consolidated Entry Form-I (for Research Project Fees)**

Sr.No	Category	Level	No. of Research Projects	Total No. of Participants	Entry Fees per Research Project	Amount
1	<b>Humanities, Languages and Fine Arts</b>	UG			50	0
		PG			50	0
		PPG			50	0
		TH			50	0
2	<b>Commerce, Management and Law</b>	UG	2	2	50	100
		PG			50	0
		PPG			50	0
		TH			50	0
3	<b>Pure Sciences</b>	UG	6	20	50	300
		PG			50	0
		PPG			50	0
		TH			50	0
4	<b>Agriculture and Animal Husbandry</b>	UG			50	0
		PG			50	0
		PPG			50	0
		TH			50	0
5	<b>Engineering and Technology</b>	UG			50	0
		PG			50	0
		PPG			50	0
		TH			50	0
6	<b>Medicine and Pharmacy</b>	UG			50	0
		PG			50	0
		PPG			50	0
		TH			50	0
Grand Total			8	22		400



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Research Convention  
AY-2019-20**

---

College: Pillai HOC College of Arts, Science and Commerce, Rasayani  
(**CODE: 5-07**)

**Zone: Raigad District  
Consolidated Entry Form-I (for Research Project Fees)**

Teacher Coordinator

College Seal

Principal

Date:

Place:



University of Mumbai  
Department of Students' Development

**14th Inter-Collegiate/Institute/Department Avishkar  
Research Convention  
AY-2019-20**

College: Pillai HOC College of Arts, Science and Commerce, Rasayani (**CODE: 5-07**)  
( **Zone: Raigad District** )

**Consolidated Entry Form-II (for Registration of Research Project)**

**Category: Commerce, Management and Law**

**Level: UG**

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
1	A STUDY ON ENTREPRENEURIAL CHALLENGES & DEVELOPMENT	Mahato Prema Ramvilas (Presenter)	20/10/2000	Sy baf	N.a.	38	
2	Sustainable Economic Development and climate change	Kushwaha Priyanka Subhash (Presenter)	01/07/1999	Ty baf	N.a.	24	

**Category: Pure Sciences**

**Level: UG**

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
3	Use of an azo dye as basic pH indicator	Parmar Sonalben Bhagwansingh (Presenter)	14/07/1999	Tybsc che	N.a.	26	2017016401840405
4	Use of an azo dye as basic pH indicator	Agiwale Meenakshi Mangesh	29/06/2000	Tybsc chem	N.a.	01	2017016401440416
5	Use of an azo dye as basic pH indicator	Bhoir Sayali Bhaskar	16/03/1999	Tybsc chem	N.a.	05	2017016401440625
6	ElectIt-A new indigenous software for online Voting process	Kazhanchikunnel Akhil Shaji (Presenter)	09/02/2000	Tybsc it	N.a.	31	2017016400976085
7	ElectIt-A new indigenous software for online Voting process	Dukare Rohan Chandrakant	01/06/2000	Ty bsc it	N.a.	12	2017016400978583
8	Look 360 - Grab New Opportunities Daily	Sonawane Prathamesh Ramdas	24/01/2000	Tybsc it	N.a.	63	2017016400977452



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AY-2019-20**

College: Pillai HOC College of Arts, Science and Commerce, Rasayani (**CODE: 5-07**)  
( **Zone: Raigad District** )

**Consolidated Entry Form-II (for Registration of Research Project)**

9	Look 360 - Grab New Opportunities Daily	Rawat Deepak Umesh (Presenter)	29/12/1999	Ty bsc it	N.a.	55	2017016400976576
10	Concentrated Solar Power: A modified non-conventional and efficient energy solution model	Thorat Pratik Devidas (Presenter)	26/10/1999	Ty bsc ph	N.a.	07	2017016402669325
11	Concentrated Solar Power: A modified non-conventional and efficient energy solution model	Rajbhar Arjun Chediram	05/03/1998	Tybsc chem	N.a.	33	2017016401440374
12	Concentrated Solar Power: A modified non-conventional and efficient energy solution model	Mhatre Sagar Manohar	16/06/2000	Tybsc phys	N.a.	01	2017016401440745
13	Concentrated Solar Power: A modified non-conventional and efficient energy solution model	Mhatre Rohan Kamlakar	07/03/1999	Tybsc chem	N.a.	07	
14	Concentrated Solar Power: A modified non-conventional and efficient energy solution model	Panchal Shreekrushna Bharat	17/08/1999	Ty bsc che	N.a.	06	
15	Determination of Heavy metal content in water by Sensor	Prasad Ashish Kumar (Presenter)	07/08/1998	Tybsc che	N.a.	03	2017016401440672
16	Determination of Heavy metal content in water by Sensor	Verma Neha Baldevsingh	24/07/1999	Tybsc chem	N.a.	40	
17	Determination of Heavy metal content in water by Sensor	Koli Pooja Manoj	28/02/2000	Tybsc phys	N.a.	03	2017016401440664
18	Determination of Heavy metal content in water by Sensor	Rathod Shital Bharat	15/12/1999	Tybsc phys	N.a.	05	2017016401794065



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( **Zone: Raigad District** )

**Consolidated Entry Form-II (for Registration of Research Project)**

19	VOICE CONTROLLED CAR USING ARDUINO	Vishwakarma Pradeep Chotelal (Presenter)	15/04/1999	Tybsc cs	N.a.	33	2017016401440896
20	VOICE CONTROLLED CAR USING ARDUINO	Patil Sujit Ravindra	22/02/2000	Ty bsc it	N.a.	30	2017016400978552
21	VOICE CONTROLLED CAR USING ARDUINO	Solanki Viveksingh Mukesh	23/09/1999	Tybsc it	N.a.	63	2017016401866163
22	VOICE CONTROLLED CAR USING ARDUINO	Deshpande Atharv Prashant	27/06/1999	Tybsc it	N.a.	9	2017016400978544

The information given above is authentic and correct as per our record

Teacher Coordinator

College Seal

Principal

Date:

Place: