KG REDDY College of Engineering & Technology

Engineering India's Changemakers

KG Reddy College of Engineering & Technology

(Approved by AICTE, New Delhi, Affiliated to JNTUH, Hyderabad)

Chilkur (Village), Moinabad (Mandal), R. R Dist, TS-501504

Report

On

"A Four Week Advanced Course onInternet of Things"

As a part of

Emerging Technology course

Under

Engineering for Sustainable Development Program

19-06-2021 to 10-07-2021

Organized by

IoT CLUB

IoT Club, Department of Electronics and Communication Engineering

In association with

H&S Department

At

KG Reddy College of Engineering & Technology

Submitted by

Mr. Angotu Saida, Assistant professor,

Department of Electronics and Communication Engineering

Head of the Department

Head of the Department
Humanities & Sciences
K.G. Reddy College of Engg. & Tech.
Chilkur, Moinabad, R.R. Dist. T.S.

Principal

PRINCIPAL
KG Reddy College of Engineering & Technology
Chilkur (V), Moinabad (M),
R.R. Dist. Telangana.

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1. Course introduction

Course Name: A Four Week Advanced Course on Internet of Things

Course duration: 4 - weeks

Organized Department: Department of Electronics and Communication Engineering

Collaborations:H & S dept., Center for Innovation and Social Transformation

Course offered by – Data Science club, dept. of Computer Science and Engineering.

Venue: T-405 ECE classRoomKG Reddy College of Engineering and Technology, Hyderabad

Coordinator: Mr.Angotu Saida, Assistant. Professor, Department of Electronics and Communication Engineering, KGReddy College of Engineering and Technology Hyderabad

Resources Persons:

1. Mr. Angotu Saida
2. Mr. Vijaya Bhasker Reddy
3. Mr. D. Lakshminarayana
4. Mrs. B N Jyothi
5. Mr. Tejeswara Kumar

2.Objective of the Course

The objectives of the course are as follows

- Studentswillbeexploredtotheinterconnectionandintegrationofthephysicalworldandtheindustries.
- Students will be Acquires the design&develop the application of IOT

Course Outcomes:

- Compare and contrast various IOT communication protocols
- Explain the Market perspective of IoT.
- Implement IoTapplication using Raspberry PI with python scripting
- Illustrate the application of IOT

3. Introduction of IoT Club

The IoT Clubhas formed in the year of 2020 in our institution KG Reddy College of Engineering and Technology, Hyderabad, as a great leadership taken by the Department of Electronics and Communication Engineering.

1. Mr.Angotu Saida, Assistant Professor, Department of Electronics and Communication Engineering

Brochure for the 1st week course

KG REDDY College of Engineering & Technology
Engineering India's Changemakers

NAAC A+ ACCREDITED WITH GRADE

Engineering for Sustainable Development

INSTITUTION'S INNOVATION COUNCIL
(Ministry fo Education Initiative)

IOT CLUB

FOUR WEEKS ADVANCED COURSE ON IOT

IOT USE CASES THROUGH PYTHON & RASPBERRY PI

Organized by
Institutions Innovation Council

In Association with
Department of Humanities and Science, Centre for innovation and Social Transformation, Centre for Faculty and Students Professional Development

MR A VIJAYA BHASKER REDDY
Assistant Professor,
Dept. of ECE
KG REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

KG REDDY College of Engineering & Technology
Engineering India's Changemakers

26th June 2021

09:00 AM TO 11:00 AM

Webinar Link :

https://kgrcet7.swecha.org/b/uma-org-vmr-ryc

Brochure for the 2nd week course

KG REDDY College of Engineering & Technology
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Engineering for Sustainable Development

INSTITUTION'S INNOVATION COUNCIL
(Ministry fo Education Initiative)

IOT CLUB

ADVANCE COURSE ON
IOT USE CASES THROUGH PYTHON & RASPBERRY PI

Organized by
Institutions Innovation Council

In Association with
Department of Humanities and Science, Centre for innovation and Social Transformation, Centre for Faculty and Students Professional Development

MR D LAKSHINARAYANA,
Assistant Professor
Dept. of ECE
KG REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

KG REDDY College of Engineering & Technology
Engineering India's Changemakers

19th June 2021
09:00 AM TO 10:00 AM

Webinar Link :
https://kgrcet7.swecha.org/b/uma-org-vmr-ryc

Brochure for the 1st week course

KG REDDY College of Engineering & Technology
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Engineering for Sustainable Development

INSTITUTION'S INNOVATION COUNCIL
(Ministry fo Education Initiative)

IOT CLUB

FOUR WEEKS ADVANCED COURSE ON IOT

IOT USE CASES THROUGH PYTHON & RASPBERRY PI

MRS B N JYOTHI
Assistant Professor,
Dept. of CSE
KG REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

Organized by
Institutions Innovation Council

In Association with
Department of Humanities and Science, Centre for innovation and Social Transformation, Centre for Faculty and Students Professional Development

KG REDDY College of Engineering & Technology
Engineering India's Changemakers

3rd July 2021

09:00 AM TO 11:00 AM

Webinar Link :

https://kgrcet7.swecha.org/b/uma-org-vmr-ryc

Brochure for the 3rd week course

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INSTITUTION'S INNOVATION COUNCIL
(Ministry fo Education Initiative)

IOT CLUB

FOUR WEEKS ADVANCED COURSE ON IOT

IOT USE CASES THROUGH PYTHON & RASPBERRY PI

Organized by
Institutions Innovation Council

In Association with
Department of Humanities and Science, Centre for innovation and Social Transformation, Centre for Faculty and Students Professional Development

MR TEJESWARA KUMAR
Assistant Professor,
Dept. of ECE
KG REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

KG REDDY College of Engineering & Technology
Engineering India's Changemakers

10th July 2021

09:00 AM TO 11:00 AM

Webinar Link :

https://kgrcet7.swecha.org/b/uma-org-vmr-ryc

Brochure for the 4th week course

4. Four Weeks Content Delivery Description

Week – 1: "Physical Design of IoT – IoT Protocols, IoT communication models,Application, Advantages & Disadvantages.

On the Frist week of the Session Mr Angotu Saida have gave an overview on the Definition and Characteristics of IoT, Applications of IoT, basic modules use to design in IoTso that students will get an idea on IoTand the club activities.Later on Mr D Lakshminarayanahas continued the next session on IoT Communication APIs,IoT enabled Technologies – Wireless Sensor Networks, Cloud Computing, Big data analytics. They are explained about the following topics.

- Introduction to IOT
- Definition and Characteristics of IoT
- Applications of IoT
- Microprocessor/microcontroller
- Sensors and Actuators
- IOT – Advantages & Disadvantages

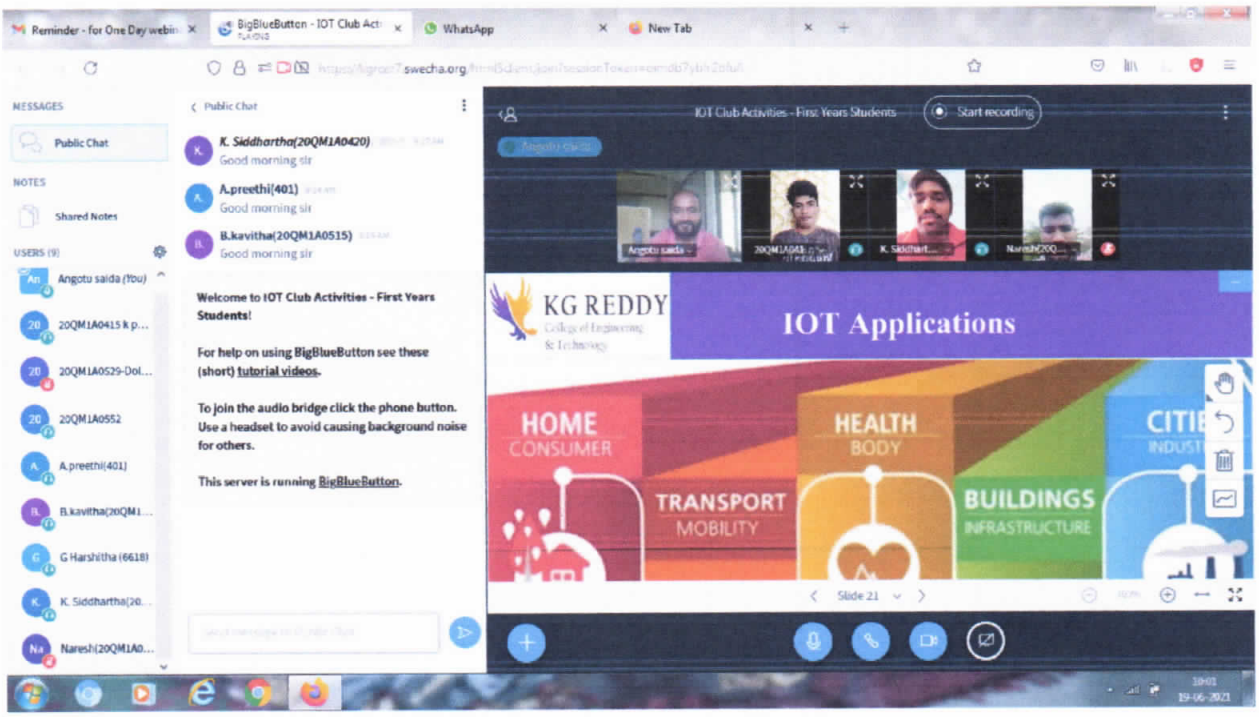


Fig1: Screen Shots of the Week 1 Session1 by MrAngotu Saida explaining Physical Design of IoT – IoT Protocols, IoT communication models,Application, Advantages & Disadvantages

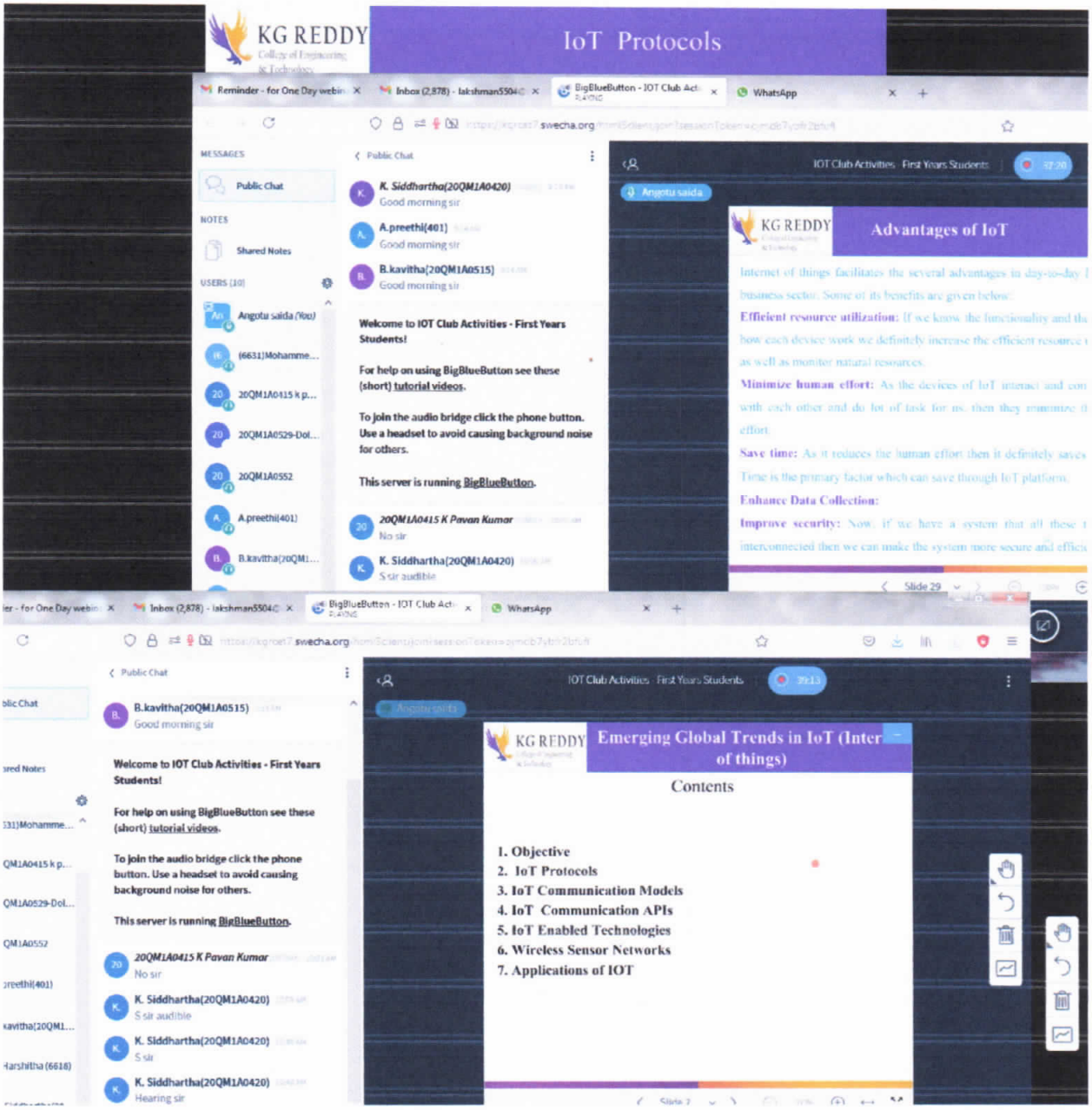


Fig2: Screen Shots of the Week 1 Session2 by Mr Mr D Lakshminarayanaexplaining Wireless Sensor Networks, Cloud Computing, Big data analytics

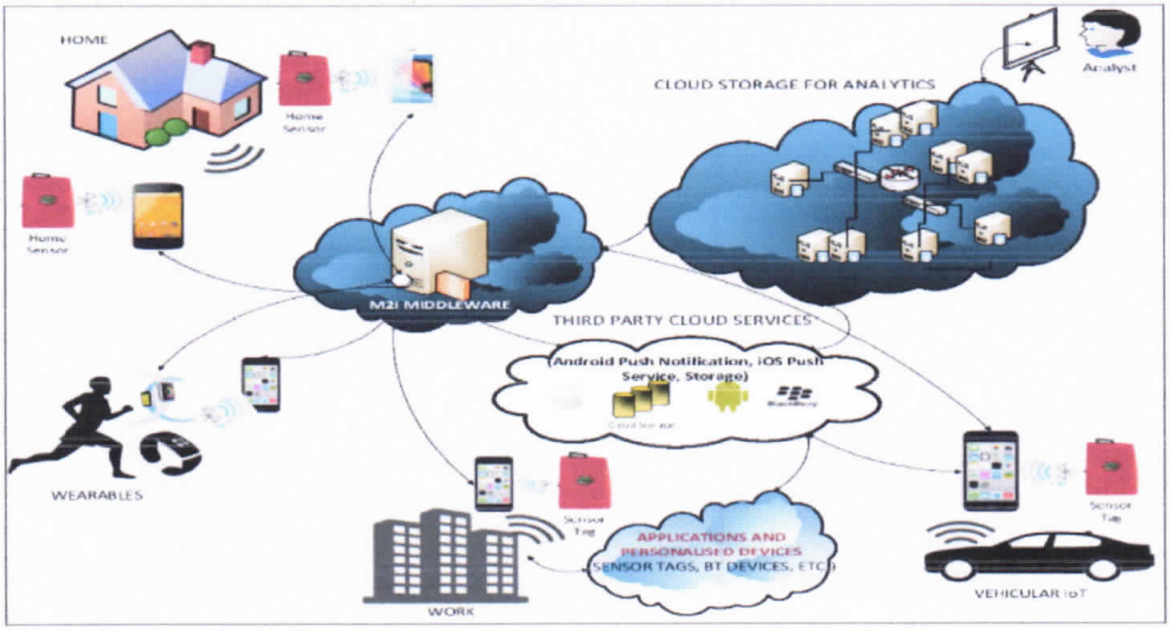


Fig3: how IoT work and connect the people

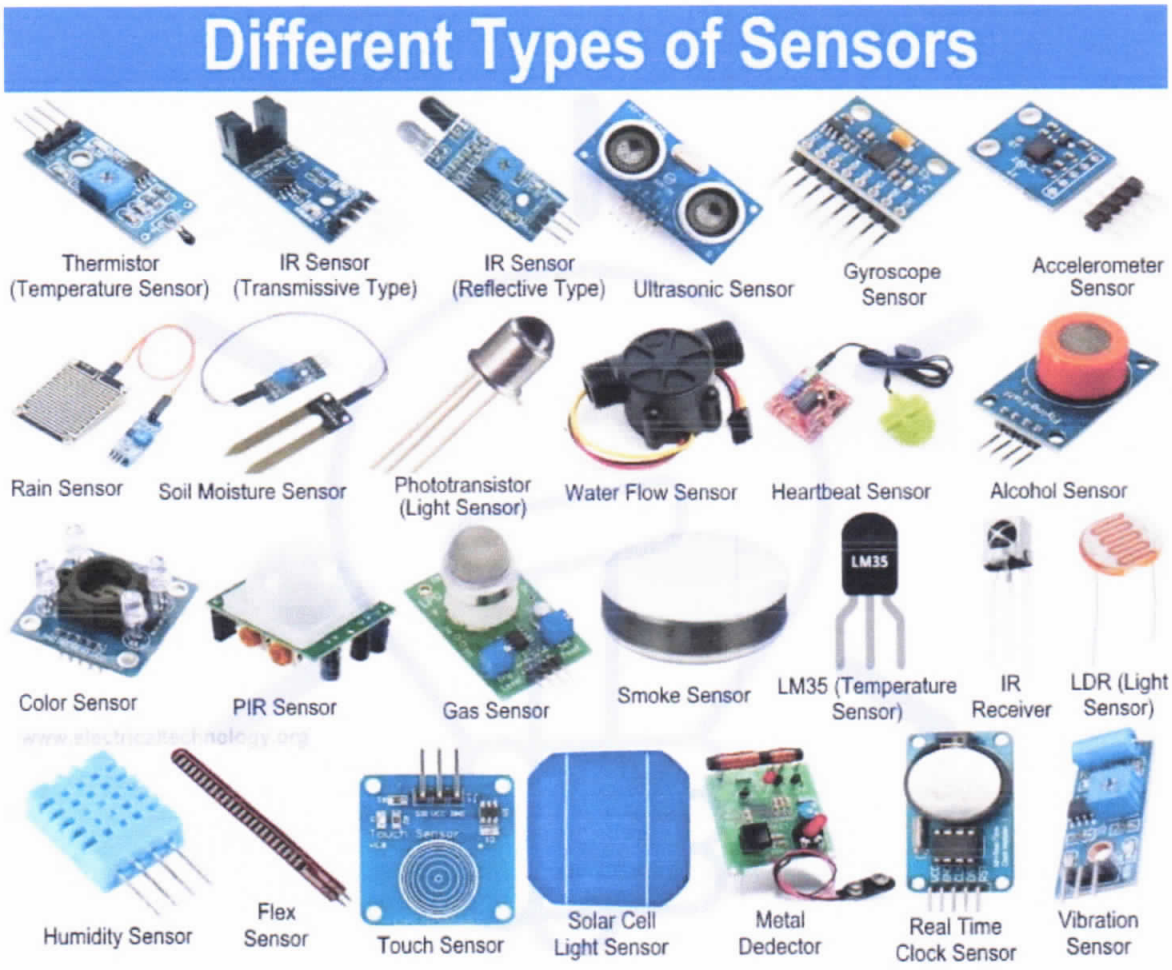


Fig4: how IoT work and connect the people

Week – 2: "Communication protocols, Embedded SystemsKey Features"

On the Second Week we had two Resource persons Mr A Vijaya Bhasker Reddy and Mr Tejeswara Kumar sir have Explain the IoT – Advantages & Disadvantages, Internet of Things – Hardware, Internet of Things – Software, Domain Specific IoT"s – Home, City, Environment, Energy, Retail, Logistics, Agriculture, Industry, health and Lifestyle

- Tools used for hardware & software of IoT
- Introduction to Aurdino
- Internal structure and pin diagram of Aurdino
- Hands on -blinking an LED

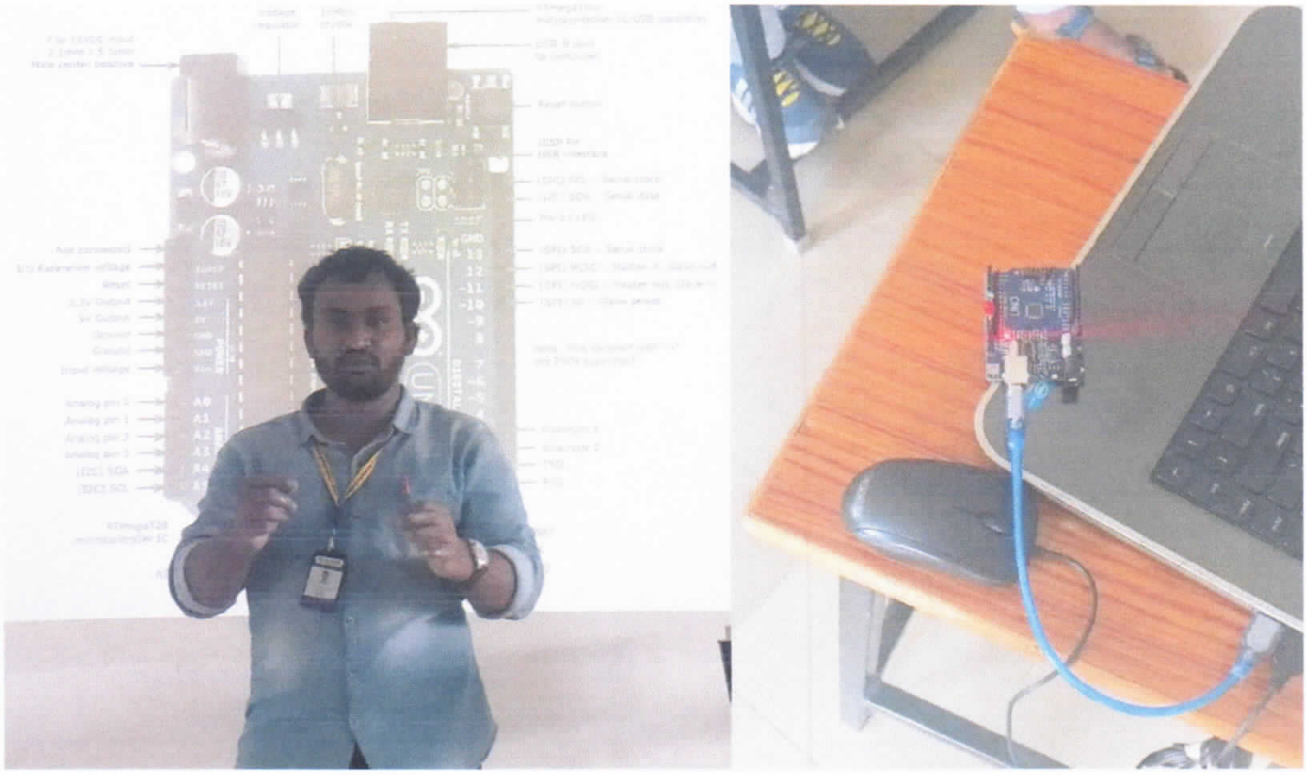


Fig5: Screen Shots of the Week 2 Sessionby Mr Tejeswara Kumar explaining Introduction to Aurdino: internal structure and pin diagram of Aurdino and hands on -blinking an LED

Second Resource Person Mr A Vijaya Bhasker Reddy has explained about the concepts of Domain Specific IoT"s – Home, City, Environment, Energy, Retail, Logistics, Agriculture, Industry, health and Lifestyle. So, that student will get an idea on how we will createand write the program.

Week – 3:"Introduction to Python: - Language features of Python"

On the Third Week we had Resource personsMrs.B N Jyothi Assistant Professor, Department of Computer Science and Engineering. Madam has explained the Data types, data structures, IOT application using Raspberry PI. So, those Students will get the basic concepts of hands on experience. Madam has explained the about the following topics.

- Language features of Python
- Data types
- data structures
- IOT application using Raspberry PI

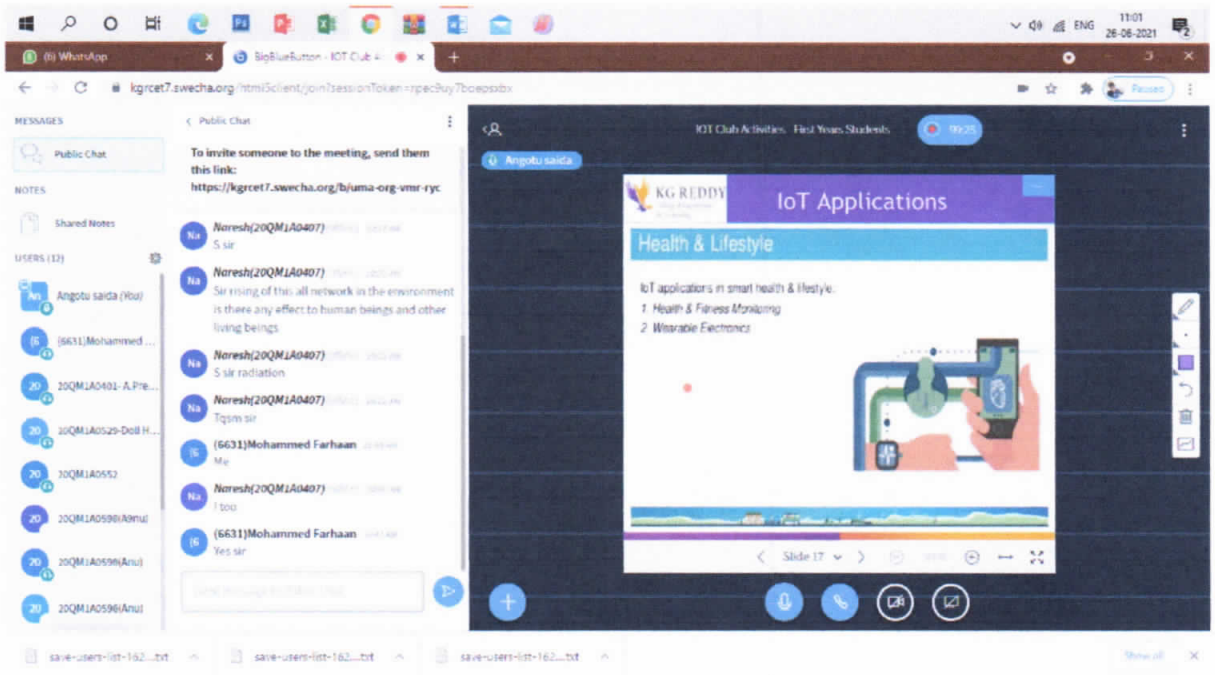


Fig6: Screen Shots of the Week 3 Session by Mrs. B N Jyothi Assistant Professor, Department of Computer Science and EngineeringData types, data structures, IOT application using Raspberry PI.

Week – 4: **"**IoT Physical Devices, GP I/O pins in Raspberry PI and Introduction to Raspberry PI, Student's presentation: poster presentation, project expo**"**

On the Fourth Week we had Resource persons Mr Tejeswara Kumar;Sir,has explained the, implementation of python programing in Raspberry PI. So, those Students will get the basic concepts of hands on experience. Sir, has explained the about the following topics.

- IoT Physical Devices
- GP I/O pins in Raspberry
- PI and Introduction to Raspberry PI
- implementation of python programing in Raspberry PI

Fig7: Screen Shots of the Week 4 Session by Mr Angotu Saida and Mr Vijaya Bhasker reddy has visited the students' project expo.

Finally,to understand the student level of the Course,after completion of the four week ESD program we have conducted the online quiz. Based on their performance students are awarded the course completion certificate.

5. Scope of the course

The Internet of Things (IoT) consists of several technological layers which all play a role in the route from simply connecting 'things' and devices to building applications that serve a clear goal, whether it's for consumer applications (CIoT), enterprise IoT, connected communities such as smart cities, specific use cases in vertical industries or Industrial IoT.

IoT technology should really be IoT technologies as there are several of course and the ones that matter depend on the goal. However, they fit in this IoT technology stack that has various layers, starting with IoT devices, and myriad technologies per layer. Moreover, IoT solutions typically leverage other technologies such as cloud computing, edge computing, artificial intelligence (AI), etc.

KG REDDY College of Engineering & Technology
Engineering India's Changemakers

Department of Electronics and Communication Engineering

KGRCET/ECE/IOT CLUB/2020-21/SEM-II/Ref No: 105/1 Date: 11/06/2021

Circular

It is here by informed to all the students of I B.Tech II SEM. The department of Electronics and Communication Engineering is organising the A Four Week Advanced Course on Internet of Things, as a part of Emerging Technology course, Under Engineering for Sustainable Development Program, organised by IoT club from 19th June to 10th July 2021.

Coordinator 11/06/2021.

Chairman

Copy to

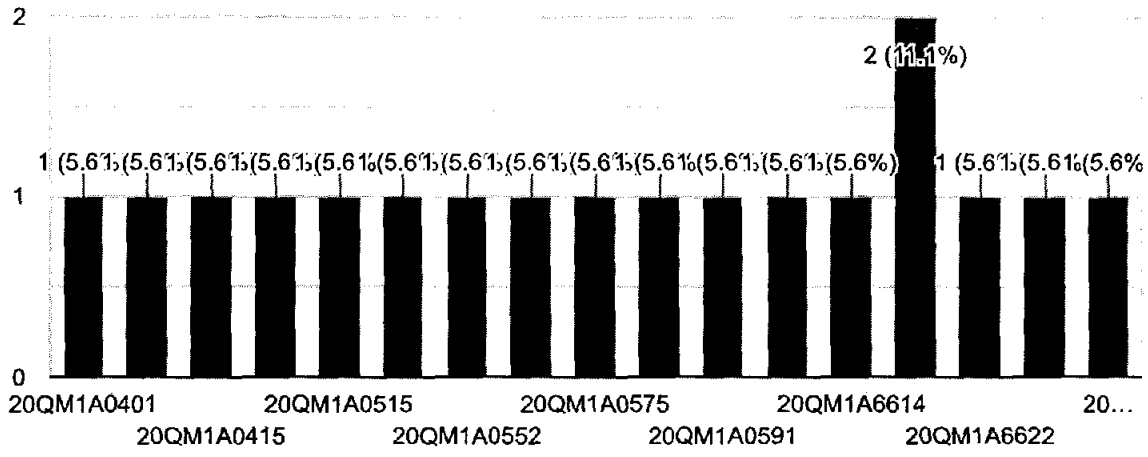
- Principal
- Dept. H&S
- All the Staff of ECE
- Dean Academic
- Notice Board
- IQAC
- CEED

IOT CLUB: Advanced Course on IOT Online Quiz A. Y: 2020-21

18 responses

Roll No(TEN DIGITS)

18 responses



Name of the student:

18 responses

Sathwika Dimmiti

K pavan kumar

GADE HARSHITHA

KOTYADA SAI PRANEETH

Mohammed Farhaan Bhikba

Rajitha

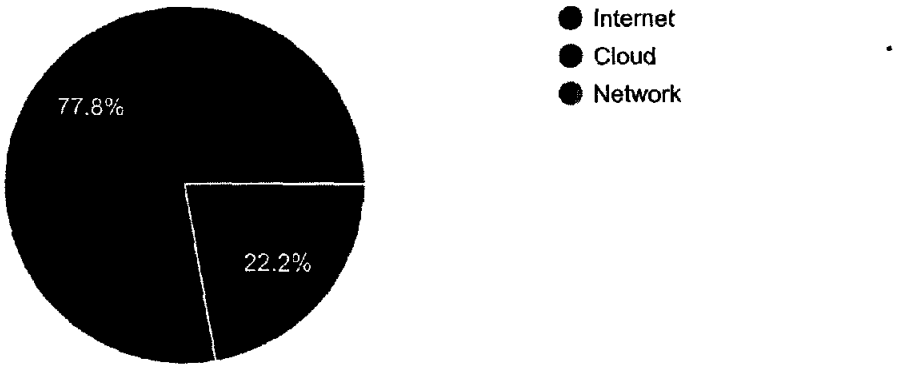
G. Harshitha

P GOVARDHAN REDDY

Naresh Eppaturi

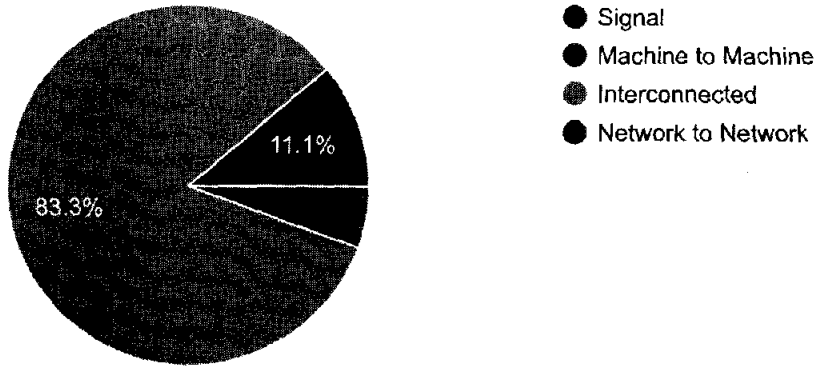
1. Which of the following is the way in which an IoT device is associated with data?

18 responses



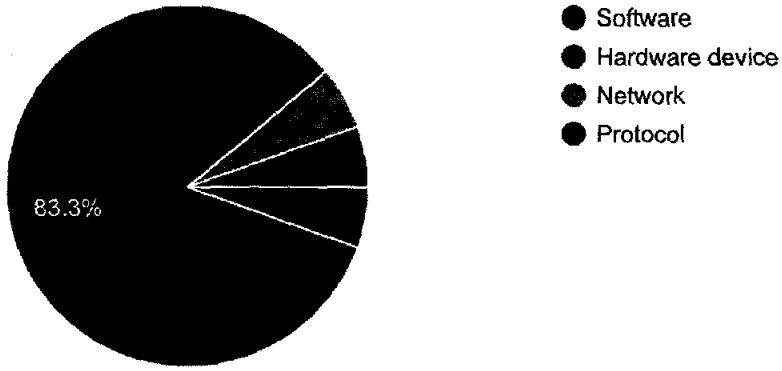
2. An IoT network is a collection of _____ devices.

18 responses



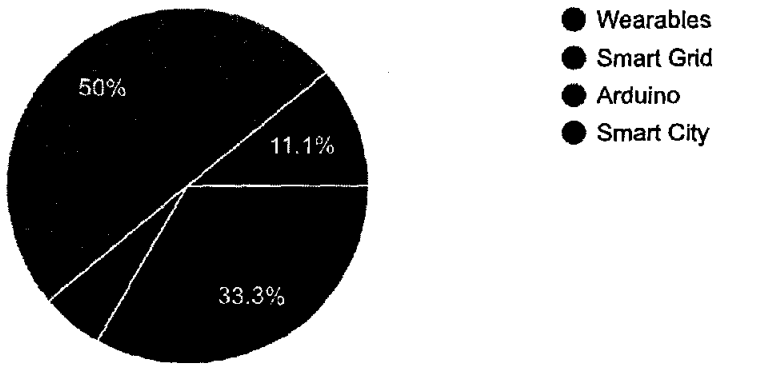
3. What is the Arduino UNO?

18 responses



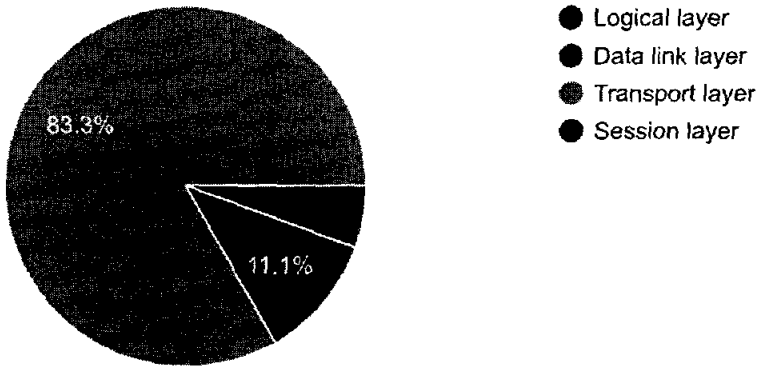
4. Which of the following is not an application of IoT?

18 responses



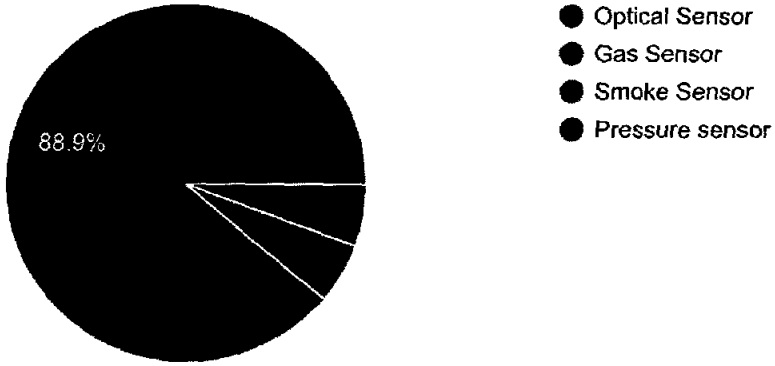
5. Which of the following layers provides end-to-end communication in IoT?

18 responses



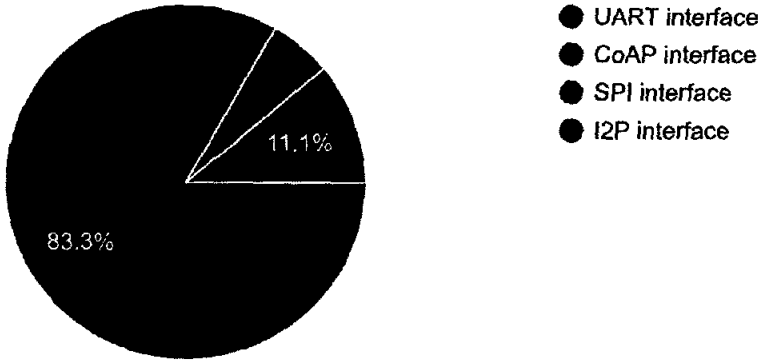
6. Which of the following devices is used to measure the gases or liquid?

18 responses



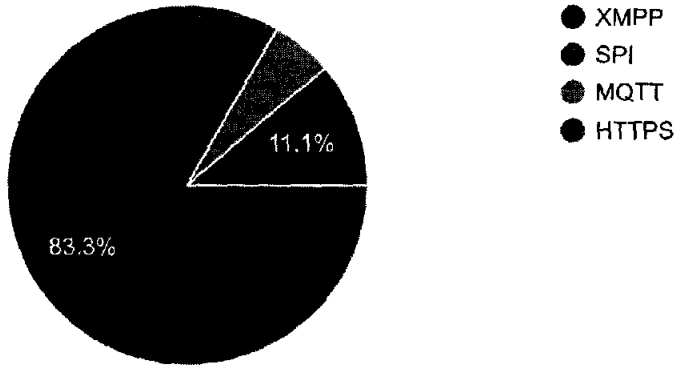
7. Which interface does the fingerprint sensor use?

18 responses



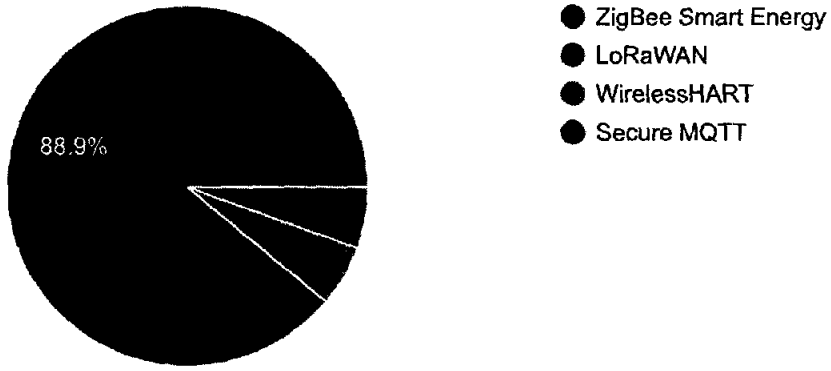
8. Which of the following protocols does the secure digital card application use?

18 responses



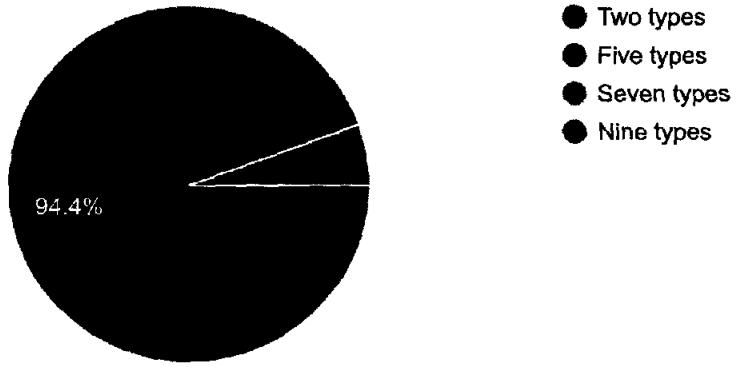
9. Which of the following protocols does not exist at the data link layer?

18 responses



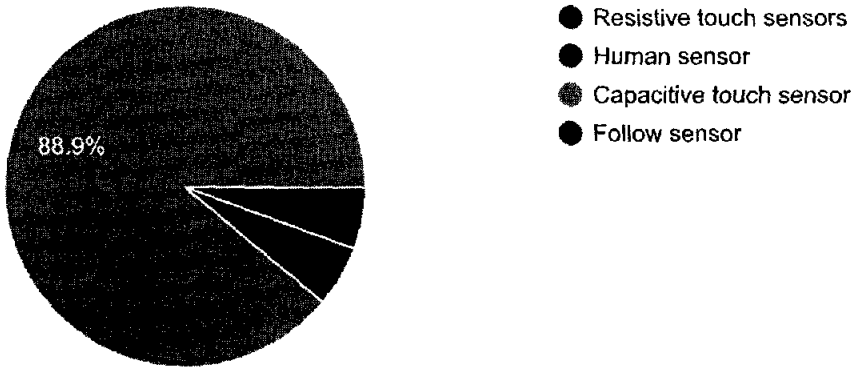
10. How many types of capacitive touch sensors in IoT?

18 responses



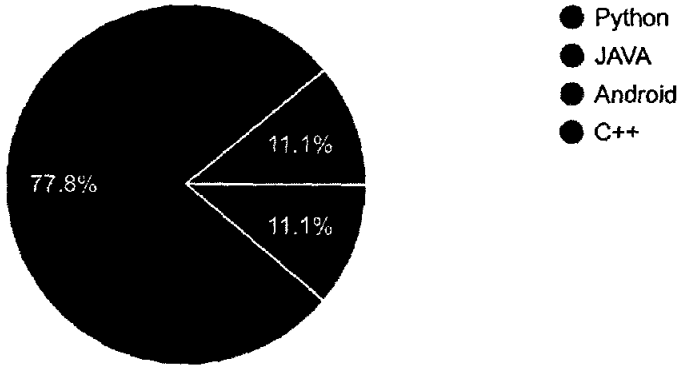
11. Which of the following touch sensors is used in a cell phone?

18 responses



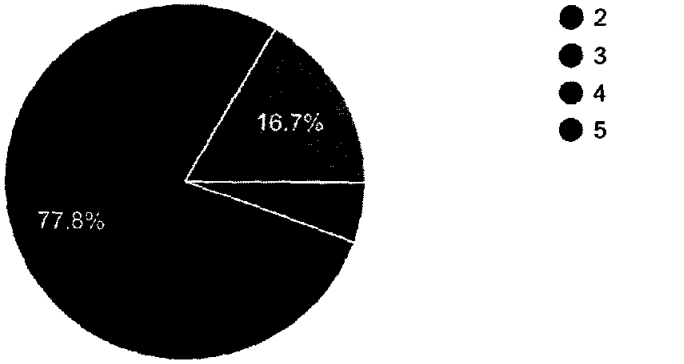
12. Which of the following languages does GSN work on?

18 responses



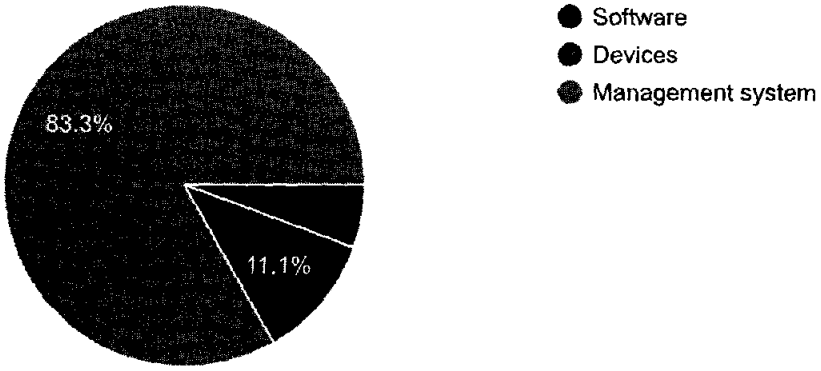
13 ..... types of voice communications are in IoT environment.

18 responses



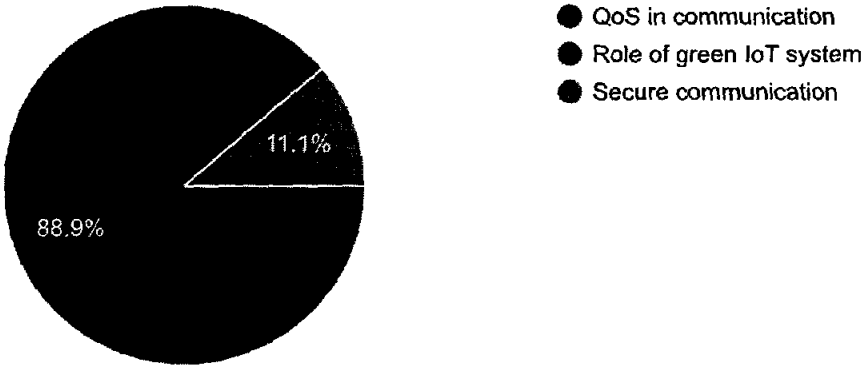
14. IoT devices can easily lead to catastrophe without .....

18 responses



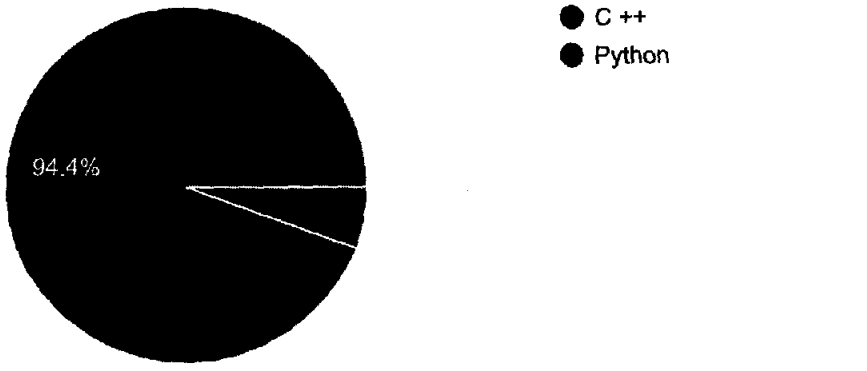
15. Which is the future application of IoT

18 responses



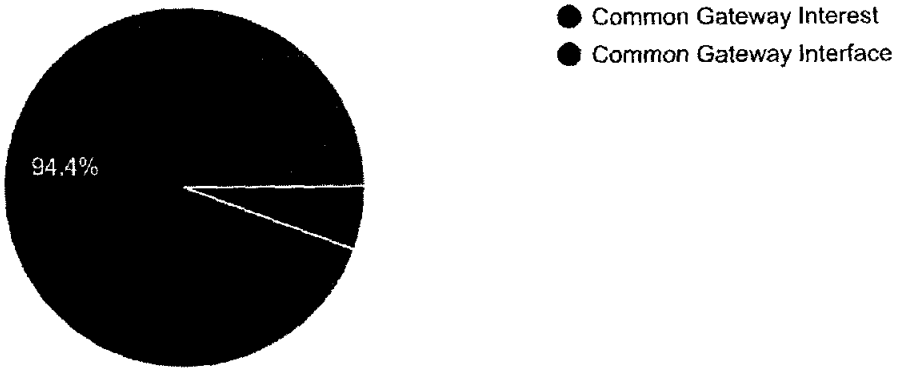
16. Which language is preferred for IoT analytics ?

18 responses



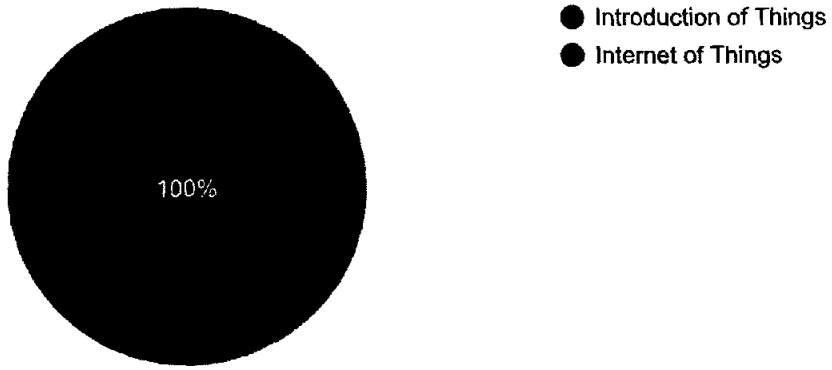
17. What does CGI stands for?

18 responses



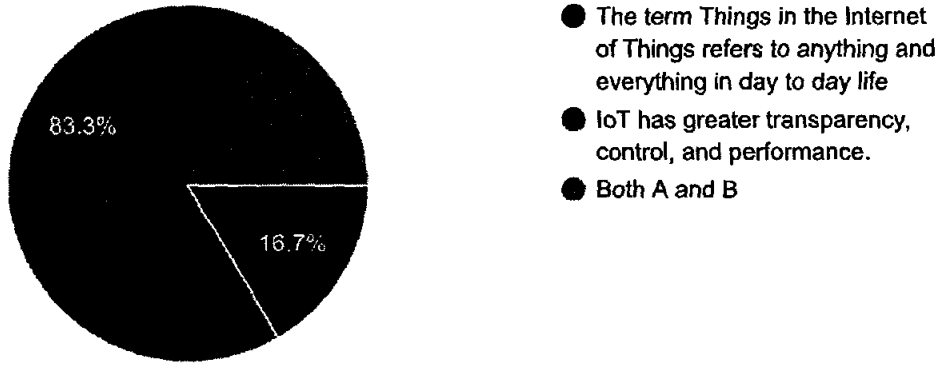
18. IoT stands for?

18 responses



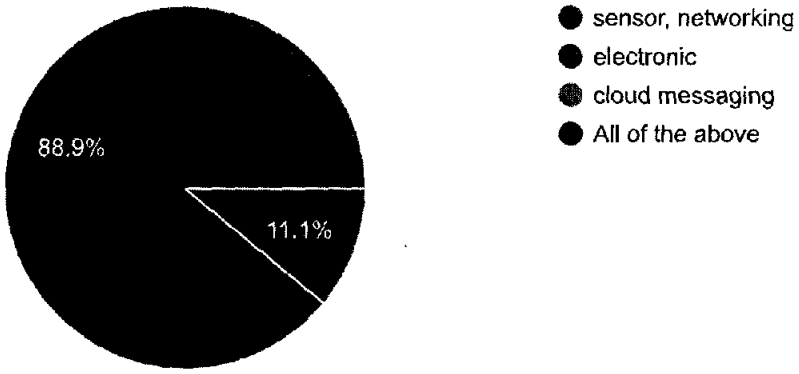
19. Which of the following is true about IoT?

18 responses



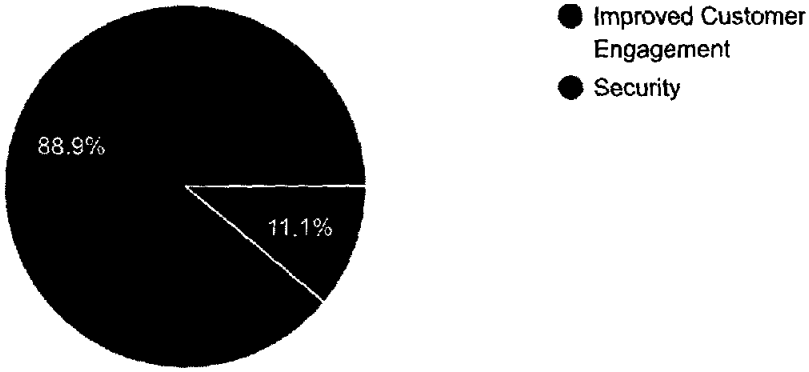
20. IoT is an advanced automation and analytics system which deals with?

18 responses



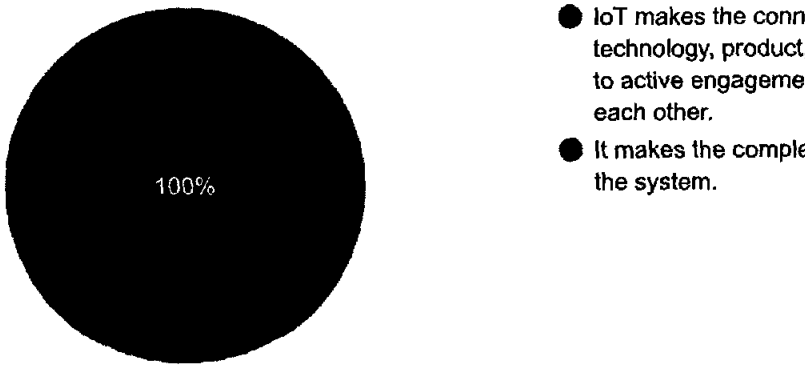
21. Which of the following is not an advantage of IoT?

18 responses



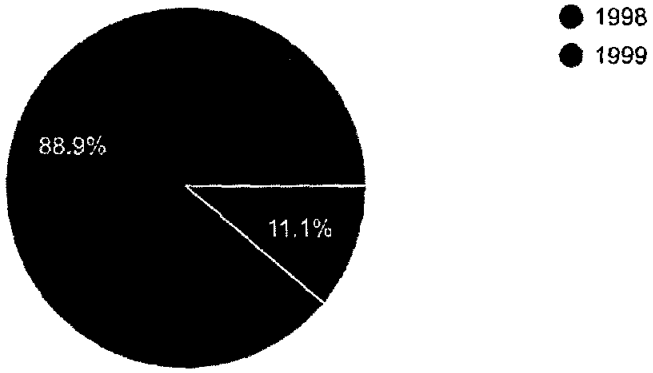
22. Active Engagement Features of IOT means?

18 responses



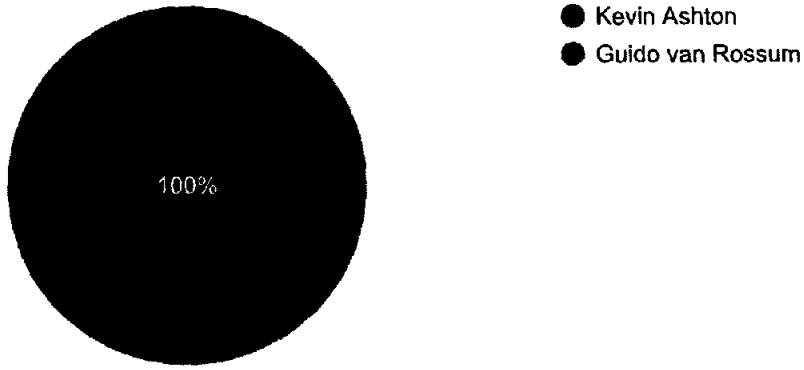
23. In Which year, the term "Internet of things" was coined?

18 responses



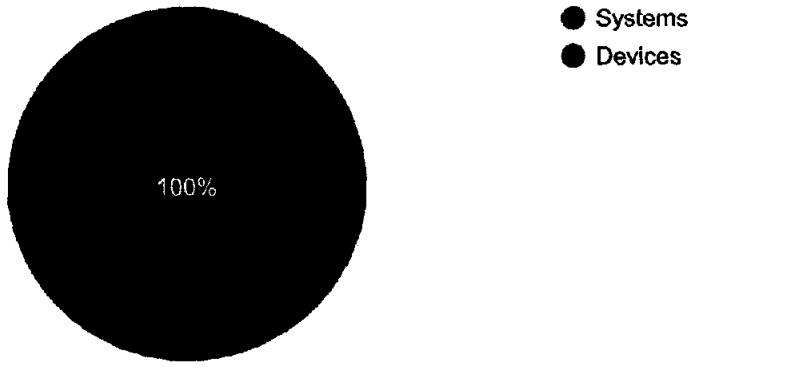
24. The term "Internet of things" was coined by?

18 responses



25. API enables services portability between _____

18 responses



IoT CLUB

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KG REDDY College of Engineering & Technology

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IoT Club, Dept. of ECE

In association with H & S Department

CERTIFICATE OF PARTICIPATION

This is to certify that Mr./Ms. Doli Harshith Tej - 20QM1A0529 has attended the

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at K G Reddy College of Engineering and Technology from 19th Jun 2021 to 10th July 2021.

As a part of Emerging Technology Course under Engineering for Sustainable Development Program.

Angotu Saida
Coordinator

M N Narsaiah
Chairman

Dr. R. S. Jahagirdar
Prinicipal

IoT CLUB

A+ NAAC

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Engineering India's Changemakers

IoT Club, Dept. of ECE

In association with H & S Department

CERTIFICATE OF PARTICIPATION

This is to certify that Mr./Ms. S. Keerthana - 20QM1A0580 *has attended the*

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Prinicipal