PRAGATI ENGINEERING COLLEGE
(AUTONOMOUS)
DEPARTMENT OF INFORMATION TECHNOLOGY

Date:17-07-23

CIRCULAR

It is hereby informed to all the Students of II & III B.Tech.that "CLOUD COMPUTING" club of IT Department in association with Career Guidance cell organizing a seminar on "**EDGE COMPUTING**" on 22-07-2023. The students who are interested should register through the following link:

Registration link for the session:
https://forms.gle/Pp4FyiARsgkiEMY97

Mode: Offline

Time: 11 AM to 12 PM

Venue: S23

FACULTY CO-ORDINATOR

HoD-IT

PRAGATI ENGINEERING COLLEGE
(AUTONOMOUS)
DEPARTMENT OF INFORMATION TECHNOLOGY

Date: 22-07-2023
Day: Saturday
Venue: S-23

"CLOUD COMPUTING CLUB" of IT Department in association with Career Guidance cell organized a seminar on "EDGE COMPUTING"

Registration link for the session:-
https://forms.gle/Pp4FyiARsgkiEMY97

PRAGATI ENGINEERING COLLEGE
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DEPARTMENT OF INFORMATION TECHNOLOGY

List of students from II & III year have been registered for the Seminar.
Branch wise report is as follows:-

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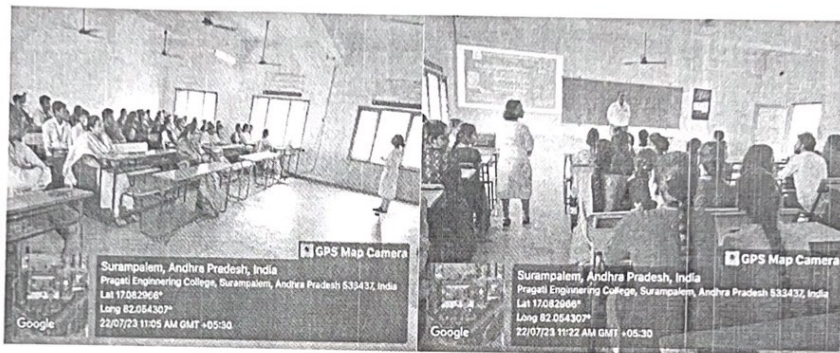|				
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The session **"EDGE COMPUTING"** was taught by P.Honey Susila(21A31A1260).

Here are the pictures of our meeting that we've conducted:-

What is Edge Computing?
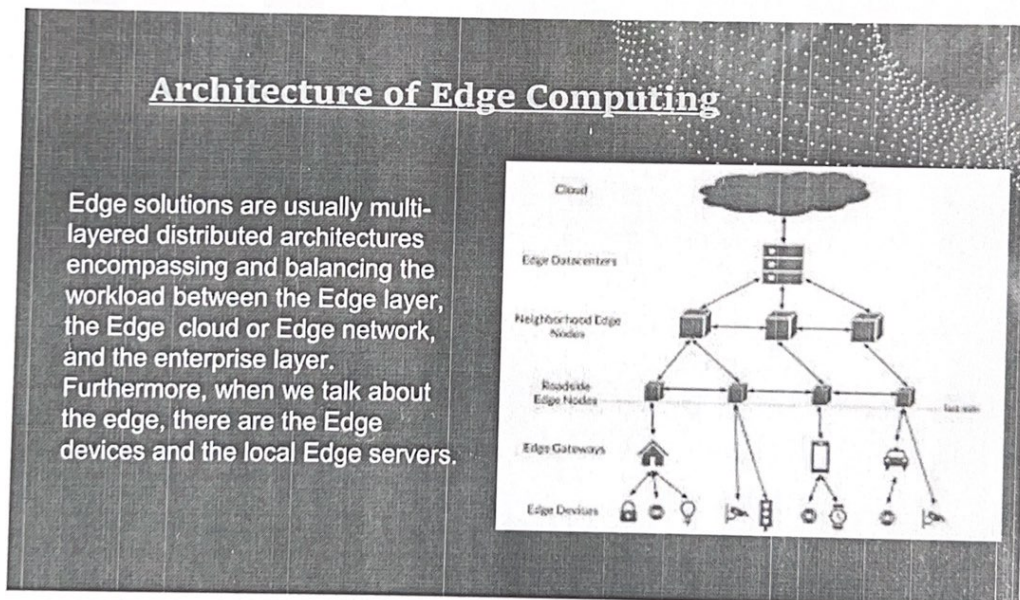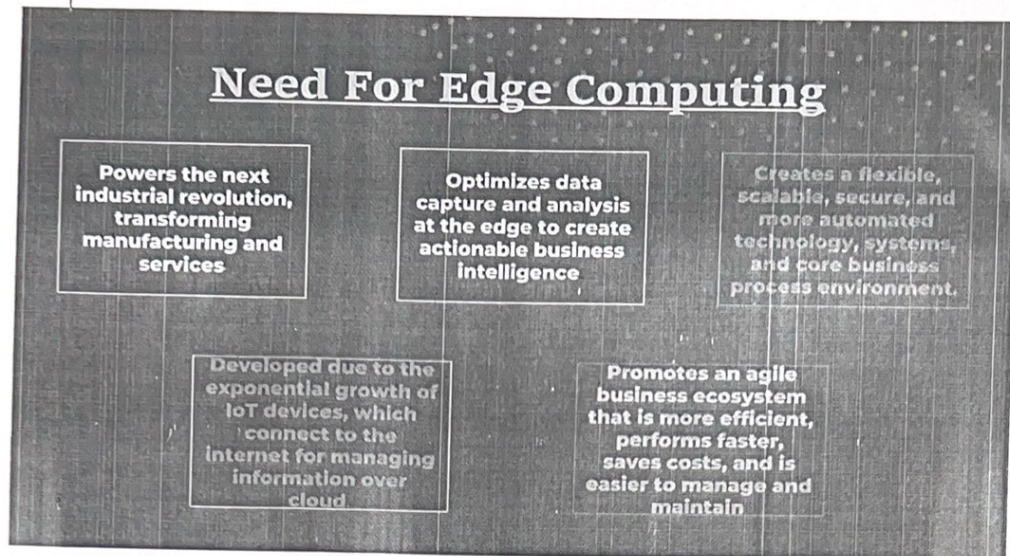
Edge computing is a distributed information technology (IT) architecture in which client data is processed at the periphery of the network, as close to the originating source as possible.
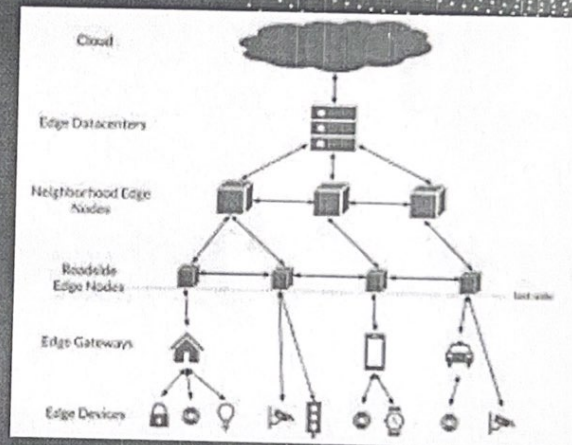
Need For Edge Computing

Powers the next industrial revolution, transforming manufacturing and services

Optimizes data capture and analysis at the edge to create actionable business intelligence

Creates a flexible, scalable, secure, and more automated technology, systems, and core business process environment.

Developed due to the exponential growth of IoT devices, which connect to the internet for managing information over cloud

Promotes an agile business ecosystem that is more efficient, performs faster, saves costs, and is easier to manage and maintain

Architecture of Edge Computing

Edge solutions are usually multi-layered distributed architectures encompassing and balancing the workload between the Edge layer, the Edge cloud or Edge network, and the enterprise layer. Furthermore, when we talk about the edge, there are the Edge devices and the local Edge servers.

Application: Use Cases

- **Manufacturing:** An industrial manufacturer deployed edge computing to monitor manufacturing, enabling real-time analytics and machine learning at the edge to find production errors and improve product manufacturing quality.
- **Farming:** Using sensors enables the business to track water use, nutrient density and determine optimal harvest. Data is collected and analyzed to find the effects of environmental factors and therefore produce good yield.
- **Improved healthcare:** The healthcare industry has dramatically expanded the amount of patient data collected from devices, sensors and other medical equipment. That enormous data volume requires edge computing to apply automation and machine learning to access the data.
- **Traffic Management:** Edge computing can enable more effective city traffic management. Examples of this include optimizing bus frequency given fluctuations in demand, managing the opening and closing of extra lanes, and, in future, managing autonomous car flows.
- **Smart Homes:** Smart homes rely on IoT devices collecting and processing data from around the house. As an example, the time taken for voice-based assistant devices such as Amazon's Alexa to respond would be much faster.

Architecture of Edge Computing

Edge solutions are usually multi-layered distributed architectures encompassing and balancing the workload between the Edge layer, the Edge cloud or Edge network, and the enterprise layer. Furthermore, when we talk about the edge, there are the Edge devices and the local Edge servers.

Advantages:

- Speed:Edge computing has the capability to increase network speed by reducing latency. It greatly reduces the distance it should travel by processing data closer to the source of information.
- Security:The information present on the cloud has the tendency to get hacked easily. Since the edge computing only sends the relevant information to the cloud this can be prevented.
- Scalability:The edge can be used to scale your own IoT network without needing to worry about the storage requirements.
- Reliability:Edge computing handles reliability part very well. Since most at times the edge computing does not depend on internet connection and servers it offers an uninterruptible service.
- Cost Effectivenes:Using edge computing for IoT allows users to reduce the bandwidth and data storage requirement and replace datacenters with device solutions. So, overall cost gets reduced.

Disadvantages:

- Security: Due to the fact that data processing takes place at the outside edge of the network there are often risks of identity theft and cyber security breaches.
- Incomplete data: Edge computing only process and analyze partial sets of information. The rest of the data is just discarded.
- More Storage Space: Edge computinghigher storage space on your device does take a considerably.
- Investment Cost: Implementing an edge infrastructure can be costly and complex. This is due to their complexity which needs additional equipment and resources.
- Maintenance: In edge Computing there are more various network combinations with several computing nodes. This requires higher maintenance cost than a centralized infrastructure.

Conclusion:

- Edge Computing is very promising and has found many useful applications
- Bringing computation to the network's edge minimizes the amount of long-distance communication that has to happen between a client and server.
- However, there are still many challenges faced by the community, ranging from fundamental technologies to novel application scenarios and potential business models
- Edge computing gained notice with the rise of lot and the sudden glut of data such devices produce. But with IoT technologies still in relative infancy, the evolution of IoT devices will also have an impact on the future development of edge computing.

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We've provided a feedback link to the participants and the feedback given by them is as follows:

Link : https://forms.gle/DtAk8UyZHmcqtLX36

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Feedback Analysis Report:

We collected feedback from all the students via online. We have designed a feedback form for this. Student's feedback on the event is presented below:

FEEDBACK	NO OF STUDENTS
Excellent	15
Good	13
Average	0
Total	38

PRAGATI ENGINEERING COLLEGE
(AUTONOMOUS)
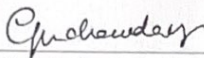### DEPARTMENT OF INFORMATION TECHNOLOGY

Participation certificates issued to all the participants and the sample certificate is as follows:
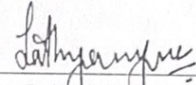
PRAGATI ENGINEERING COLLEGE
(AUTONOMOUS)
INDUSTRY 4.0 CLUB
Certificate of Participation
This is to certiy that

Mr./Ms. _____

has Participated in the

"Seminar on Edge Computing" held on 26th April 2023 Organized by **Cloud Computing Club** of Pragati Engineering College(Autonomous), Surampalem.

Mr. Satya Mohan Chowdary G
Faculty Co-Ordinator

CCC

Dr. K. Satyanarayana
Principal