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SMART CITIES

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WELCOME TO SMART CITIES & THE INTERNET OF THINGS IOT - TECHNOLOGY

ONLINE TRAINING

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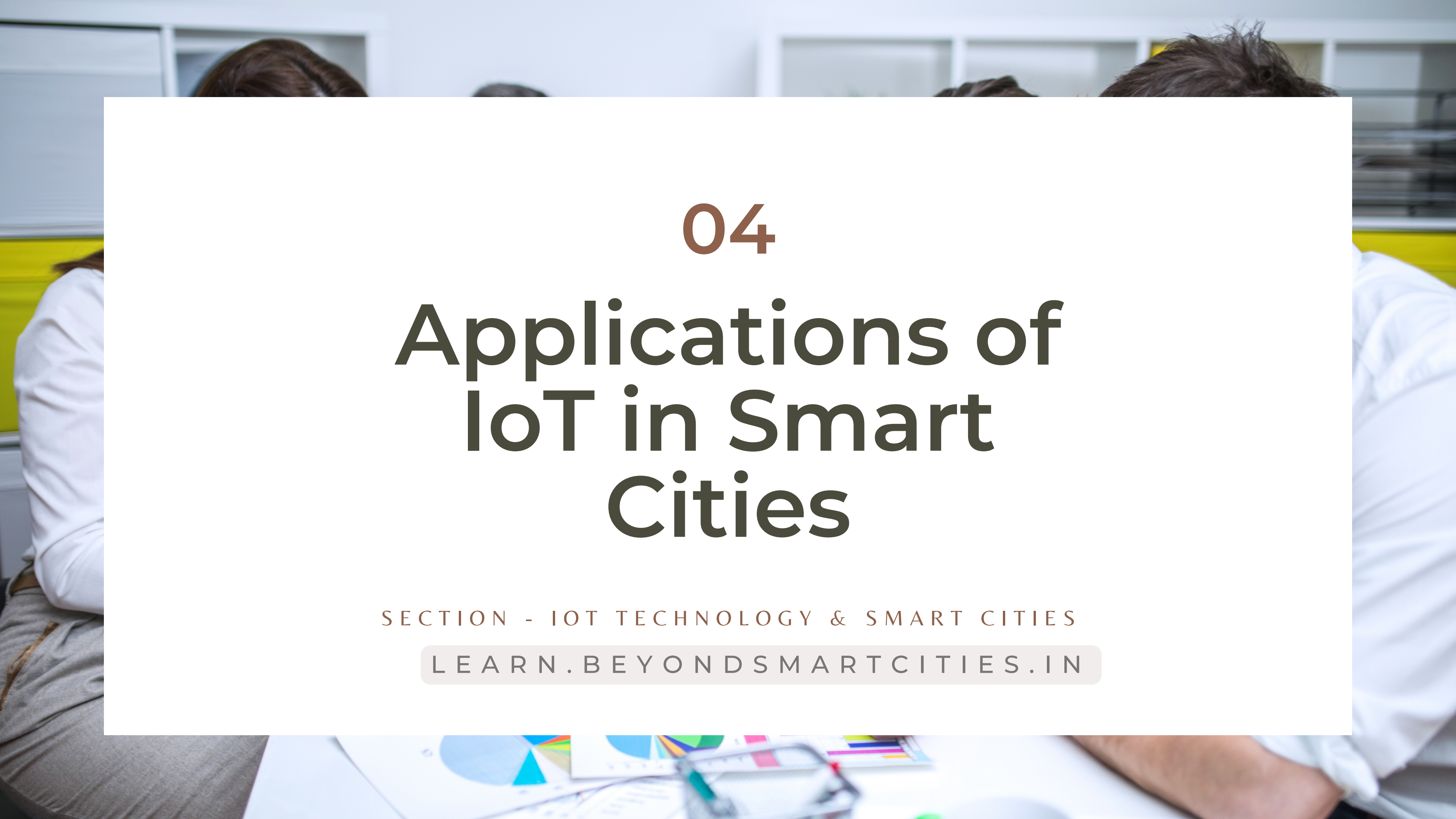


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SMART CITIES

Online Course

BEYOND SMART CITIES & THE
INTERNET OF THINGS (IOT)
TECHNOLOGY

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04

Applications of IoT in Smart Cities

SECTION - IOT TECHNOLOGY & SMART CITIES

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Applications of IoT in Smart Cities



04.

WHAT YOU WILL LEARN

- IoT applications run on IoT devices and can be created to be specific to almost every industry and vertical, including healthcare, industrial automation, smart homes and buildings, automotive, and wearable technology.
- Advantages of IoT Solutions for Smart Cities
- Disadvantages of IoT Solutions for Smart Cities
- Smart City Cloud Computing and IoT

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How IoT is used in Smart Cities

- IoT Analytics says that Internet of Things technology is getting a lot of attention in a number of interesting ways in smart cities.
- The study looked at how leaders in some of the best smart cities in the world were using IoT to make cities more efficient and improve the quality of life for their citizens.
- The study found that city governments should focus on the following areas:
 - 1.Public transportation that works (74%).
 - 2.Keeping an eye on and managing traffic (72%).
 - 3.Keeping an eye on water level and floods (72%).
 - 4.Video monitoring and data analysis (72%).
 - 5.Streetlights that work (68%)
 - 6.Weather monitoring (68%)
 - 7.Watching the air quality and pollution level (68%)
 - 8.Smart metering – water (66%)
 - 9.Fire / Smoke detection (66%)
 - 10.Watching the quality of the water (64%)

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Applications

01/06



SYSTEM FOR SMART LIGHTING

IoT-based smart city implementation models can improve a city's lighting system by connecting it to new sensors and communication channels, saving money and energy.

02/06



SMART WAYS TO HANDLE TRAFFIC

Smart cities control traffic through internet-connected traffic signals and sensors. These sensors can be installed in bridges and highways to monitor their status and alter green lights when there are many automobiles on the road.

03/06



SMART LIGHTING SYSTEMS

IoT-based smart city implementation models can improve a city's lighting system by connecting it to new sensors and communication channels. This helps cities run more efficiently and save money and energy.

Applications

04/06



SMART TRAFFIC MANAGEMENT

It can install IoT-based smart traffic lights and sensors that automatically sense large traffic volumes and change green light durations, as well as sensors in bridges and roads to monitor their condition and repair them promptly.

05/06



IOT-BASED SMART WASTE MANAGEMENT

IoT sensors can improve waste disposal and water management in smart cities by remotely monitoring trash cans and water levels, tank pressure, and pipe quality. Fixing faulty pipes and tank pressure quickly with sensor data helps cities save water.

06/06



IOT-BASED TRANSPORT & HEALTHCARE

IoT (Internet of Things) is playing an important role in smart cities by providing connected vehicles that can track public transportation and optimise public transportation routes. It can also help improve health care through micro bots and remote patient monitoring.

IoT for smart parking

NATURAL DISASTER MANAGEMENT

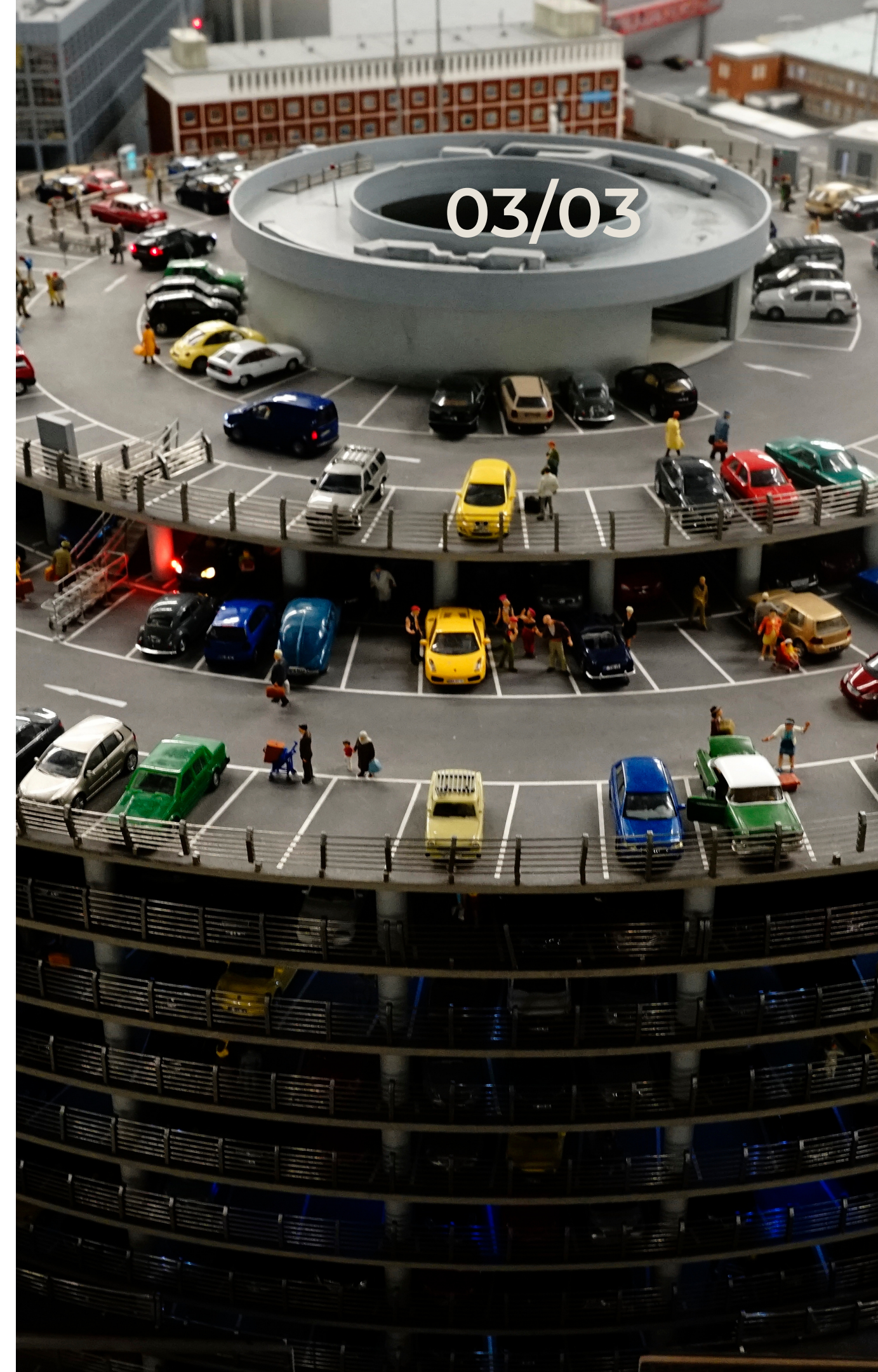
INFRASTRUCTURE

BUILDINGS

AIR POLLUTION

- Large cities have parking issues. IoT sensors can fix this in smart cities.
- Sensors display nearby empty parking spaces. This sensor data can also help city managers track traffic congestion caused by fewer parking places and unoccupied spaces. They can optimise parking to save citizens time.
- IoT is versatile. If used widely, deployed, and controlled, IoT, urban data platforms, big data, and AI can make our cities smarter, more sustainable, and more efficient. . Data and real-world solutions will make smart cities smarter.

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Advantages of IoT Solutions for Smart Cities

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SPECIALISTS

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Smart cities offer many benefits over less connected public spaces. Some of the biggest ways smart solutions can help to improve city operations include public safety, reduced environmental footprint, and operational efficiency, all of which can contribute to cost savings

Enhanced Efficiency and Effectiveness

- One of the key advantages of IoT for smart cities is that it gives government officials access to a massive amount of valuable information.
- By properly analysing this information and data, city officials can make more effective decisions to improve the city and the lives of its citizens.
- With IoT and cloud-based big data analytics for smart cities of the future, cities will be better able to find high-risk areas and send police there.
- In the same way, city officials can find out what people want and need and serve them better.

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03/03

Reduced Crime

- Reduced Crime IoT-based smart city solutions create a safer environment for citizens by reducing crime rates.
- IoT technologies for smart cities, such as connected crime centres and internet-connected body cameras, help police officers be more efficient.
- In fact, many cities are already turning to smart solutions to create a safer community.

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03/03



Better Environment

- Better Environment Environmental pollution is on the rise in the form of greenhouse gases.
- However, smart cities and energy solutions, such as renewable energy sources and energy-efficient buildings, reduce the negative impact on the environment.
- This makes smart cities an even more attractive technology.
- An IoT-based smart city also reduces environmental pollution by improving air quality.
- For example, cities can collect information about sources of pollution or identify peak times for poor air quality by installing IoT air quality sensors throughout the city.
- Decision-makers can then monitor which areas of the city have the highest pollution and reroute traffic to alternate areas or use low-emission transportation options.

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Better Services

- Better services for citizens, such as transportation and healthcare systems, are also major benefits of a smart city.
- Connected vehicles, intelligent traffic signals, and smart parking help manage transportation more effectively.
- Additionally, smart healthcare technologies, such as remote monitoring, help create a better healthcare system.

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Reduced traffic congestion

- Building smart city applications using IoT and cloud-based architectures also helps reduce traffic congestion.
- City officials can place sensors in the areas that get the most traffic and reroute heavy traffic.
- Additionally, an IOT-based smart parking system can reduce traffic congestion.

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Disadvantages of IoT Solutions for Smart Cities

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Smart cities mostly offer benefits for the betterment of citizens. However, since a smart city is based on technology, there are a few drawbacks.

Drawbacks of IoT and smart cities include:

- limited privacy for citizens as city officials have access to intelligent systems and cameras to monitor activity within the city.
- Since a smart city is based on IoT technology, a slow internet connection can disrupt city operations.
- There are high costs required to upgrade cities with smart technology. Hence, it takes time to reap the full benefits of smart technology.



Smart City Cloud Computing & IoT

- We've already talked about how a smart city and IoT work together. But what is a cloud smart city, and how does it connect to the Internet of Things?
- IoT devices make a lot of information. So, they need a place to store this data, but these devices usually have limited storage, performance, and power supplies. Cloud computing helps with this.
- Networks, storage, software, and servers are just some of the things that can be shared in the cloud. IoT sensors in smart cities can send data to the cloud, where it can be stored indefinitely. Cloud services and smart city cloud platforms also let city officials embed IoT data in electronic devices that are connected to the IoT.

There are different kinds of cloud services, like the public cloud, the private cloud, and the hybrid cloud. Ridge, the cloud with the most nodes around the world, lets cloud computing reach its full potential. It gives businesses the ability to deploy applications anywhere, on any infrastructure, without latency or data residency issues.

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Smart Cities Examples

The first question that comes to mind when we talk about smart cities is, "Are there any IoT smart cities yet?" There are many examples of Internet of Things (IoT) smart cities around the world.

- There are many examples of Internet of Things (IoT) smart cities around the world.
- Paris: The Paris Smart City 2050 project has been announced.
- Pune is one of the best examples of a smart city in India.
- US cities are getting smarter New York City and San Francisco are two smart cities in the US that use IoT. New York City is working on a project called "connected vehicles" (CTV) to get rid of all traffic-related deaths and injuries.
- The traffic lights in San Francisco use smart city technology.

A blurred background image showing a person with dark hair tied back, sitting at a desk. On the desk, there is a laptop, some papers, and a glass of water. The person appears to be working or studying in a bright, indoor setting.

SMART CITY QUOTE

“Smart cities are the intelligent cities of positivity and happy-energy, not the junkyards of technologies but cities of diversity, love, life, beauty, dignity, freedom, tolerance, and equality.”

Amit Ray



THANK YOU

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