BEYOND SMART CITIES

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SMART CITIES & THE INTERNET OF THINGS
IOT - TECHNOLOGY

ONLINE TRAINING

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BEYOND SMART CITIES

Online Course

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

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02

What Is a Smart City?

SECTION - IOT AND SMART CITIES

What Is a Smart City?

- However, a smart city is usually defined as a city that uses IoT and ICT (information and communications technology) to enhance infrastructure and services provided to citizens and businesses.
- In addition, a smart city project aims to streamline a city's day-to-day operations.
- IoT is the key to turning a city into a smart city.
- An IoT smart city also utilizes edge computing, creating an edge computing smart city.

Key characteristics of a smart city or IoT smart city are:

SMART CITY INFRA BASED ON ADV TECH

ENVIRONMENTAL FRIENDLY INITIATIVES

SMART PUBLIC TRANSPORT SYSTEM

INTEGRATED URBAN PLANNING

IOT and Smart Cities

IoT is the key to turning a city into a smart city. IoT is a system of several connected devices, such as sensors, vehicles, and home appliances. IoT devices can communicate and transfer data via the internet without any human intervention. An IoT smart city also utilizes edge computing, creating an edge computing smart city. Edge computing brings compute power closer to an IoT device to save bandwidth and reduce latency.

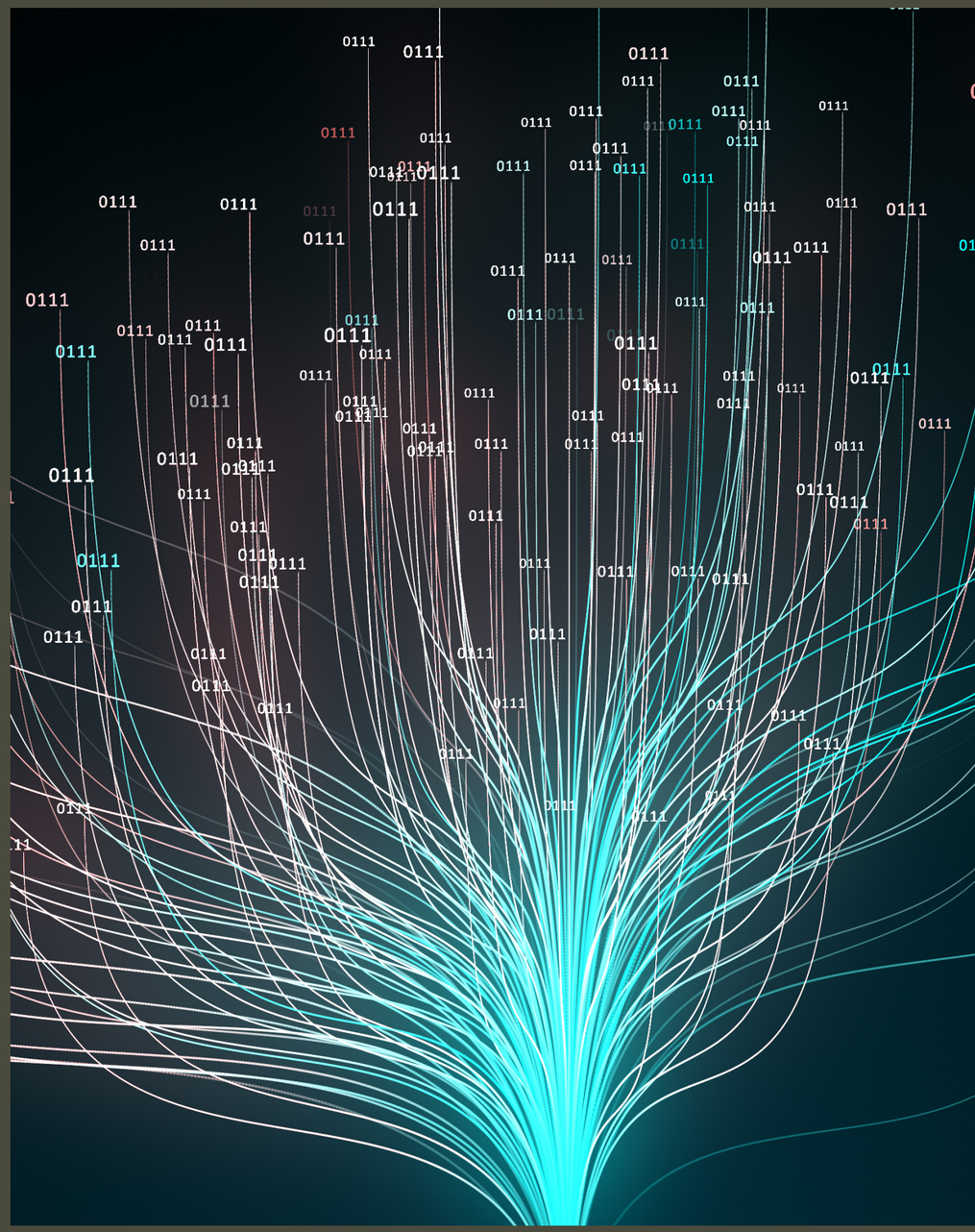
PEOPLE ABLE TO LIVE AND WORK WITHIN THE CITY, USING ITS RESOURCES

CONFIDENT AND PROGRESSIVE CITY PLANS

EFFECTIVE AND HIGHLY FUNCTIONAL PUBLIC TRANSPORTATION

Smart City Technologies

- The success of a smart city relies on the relationship between the public and private sectors as much of the work to create and maintain a data-driven environment falls outside the local government remit.
- For example, smart surveillance cameras may need input and technology from several companies.
- Aside from the technology used by a smart city, there is also the need for data analysts to assess the information provided by the smart city systems so that any problems can be addressed and improvements found.
- Smart cities use a variety of software, user interfaces and communication networks alongside the Internet of Things (IoT) to deliver connected solutions for the public.
- Of these, the IoT is the most important.
- The IoT is a network of connected devices that communicate and exchange data.
- Many of the IoT devices use edge computing, which ensures that only the most relevant and important data is delivered over the communication network.
- In addition, a security system is implemented to protect, monitor and control the transmission of data from the smart city network and prevent unauthorised access to the IoT network of city's data platform.



Smart City Features

- Combining automation, machine learning and the IoT is allowing for the adoption of smart city technologies for a variety of applications.
- Such smart grid technologies can improve everything from operations to maintenance and planning to power supplies.
- Aside from services, smart cities allow for the provision of safety measures such as monitoring areas of high crime or using sensors to enable an early warning for incidents like floods, landslides, hurricanes or droughts.
- In addition, smart city technology can improve the efficiency of manufacturing, urban farming, energy use, and more.
- Smart cities can connect all manner of services to provide joined up solutions for citizens.

How Smart Cities Work

Smart cities follow four steps to improve the quality of life and enable economic growth through a network of connected IoT devices and other technologies. These steps are as follows:

1. Collection – Smart sensors gather real-time data
2. Analysis – The data is analysed to gain insights into the operation of city services and operations
3. Communication – The results of the data analysis are communicated to decision makers
4. Action – Action is taken to improve operations, manage assets and improve the quality of city life for the residents.

- The ICT framework brings together real time data from connected assets, objects and machines to improve decision making.
- However, in addition, citizens are able to engage and interact with smart city ecosystems through mobile devices and connected vehicles and buildings.
- By pairing devices with data and the infrastructure of the city, it is possible to cut costs, improve sustainability and streamline factors such as energy distribution and refuse collection, as well as offering reduced traffic congestion, and improve air quality.

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Are Smart Cities Sustainable?

- Sustainability is an important aspect of smart cities as they seek to improve efficiencies in urban areas and improve citizen welfare.

- Cities offer many environmental advantages, such as smaller geographical footprints, but they also have some negative impacts, including the use of fossil fuels to power them.

- However, smart technologies could help alleviate these negative effects, such as through the implementation of an electric transport system to reduce emissions.

- Such sustainable transport options should also see a reduction in the number of cars in urban areas as autonomous vehicles are expected to reduce the need for car ownership amongst the population.

- Creating such sustainable solutions could deliver environmental and societal benefits.

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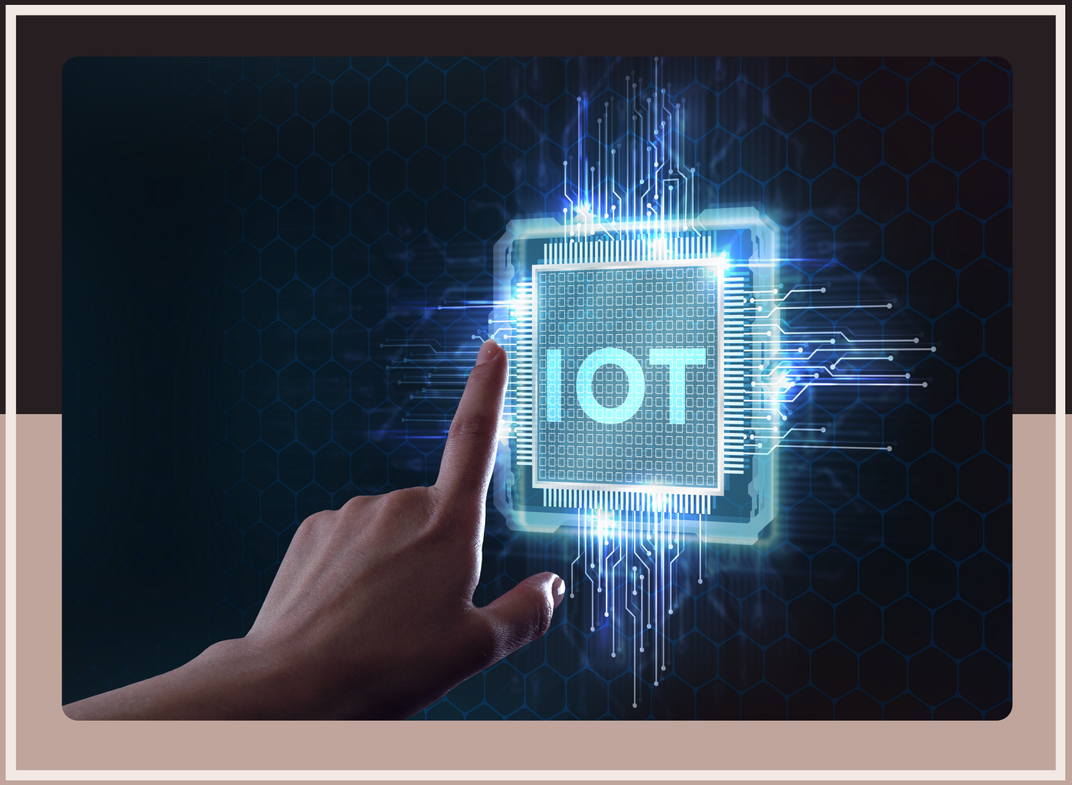
DAILY QUOTE

“Smart cities do not mean creating jungles of concretes or sophisticated cities of glasses with HiFi technologies. But a smart city means a city, where humans, trees, birds and other animals can grow with all their glories, imperfections, freedom and creativity.”

Amit Ray



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