SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade(CycleIII)
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

SMART IOT APPLICATIONS

III YEAR/ V SEMESTER

UNIT 1 –BASIC APPLICATIONS

TOPIC-2 SMART CITIES: APPLICATIONS AND CASE STUDIES

SMART CITIES : SMART PARKING

❑ **Definition:**

A smart city uses digital technology to improve performance, well-being, and reduce costs and resource consumption.

❑ **Components:**

Smart infrastructure, IoT, data analytics.

❑ **Objective:**

To enhance the quality of urban living through technology.

SMART CITIES : SMART PARKING

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IMPORTANCE OF SMART PARKING

❑ **Urban Challenges:**

Congestion, pollution, time wastage.

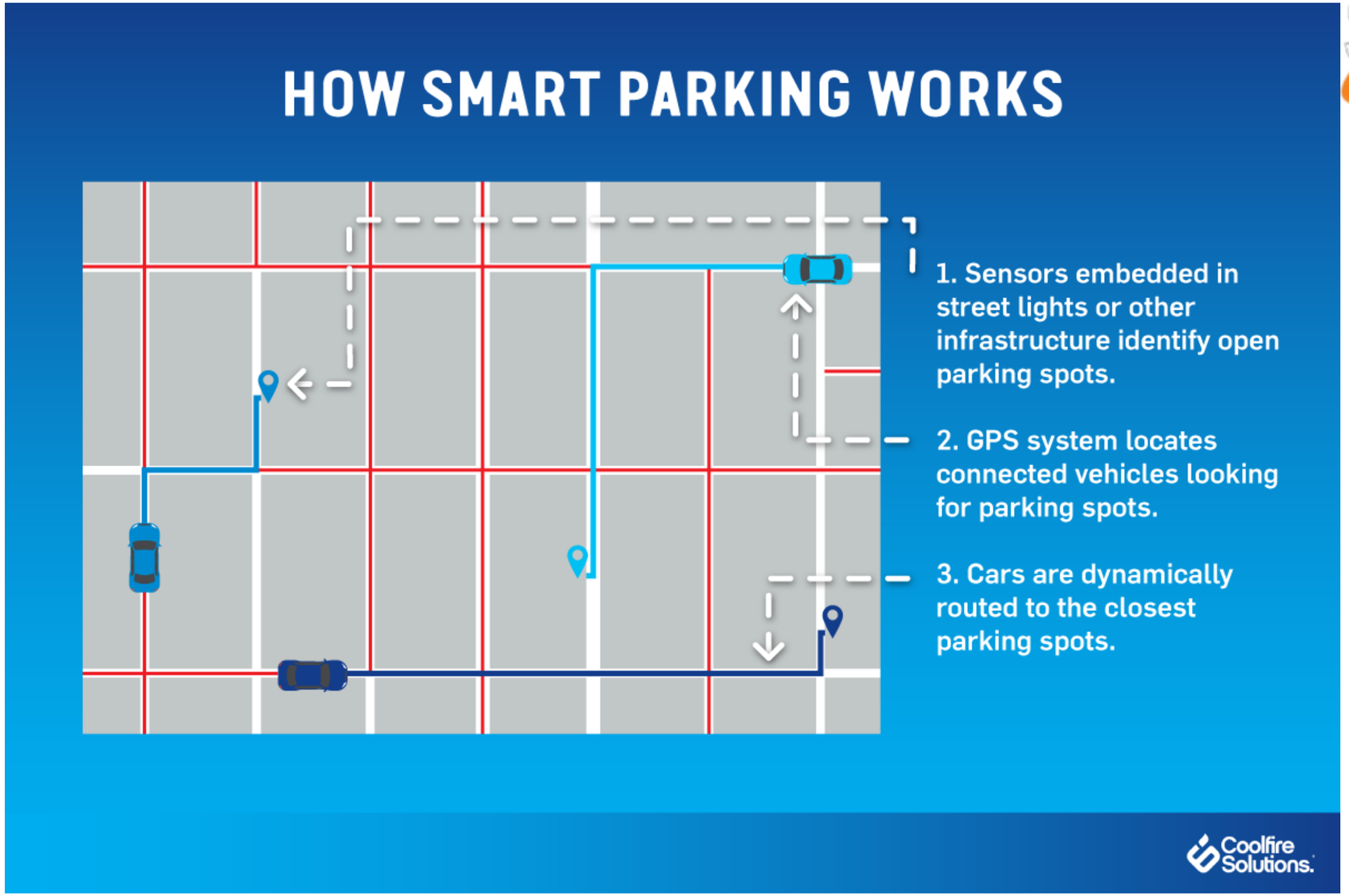
❑ **Benefits of Smart Parking:**

Improved traffic management, reduced emissions, convenience for drivers, efficient use of resources.

Reference: https://3.bp.blogspot.com/-JXt0jTBzAVI/XFLdzmR4itI/AAAAAAAAAaE/fEzAPmHiZTkFFq8GZbpZ_9sS8_vOL5ubwCLcBGAs/w1200-h630-p-k-no-nu/42_smart_parking.jpg

HOW SMART PARKING WORKS

- **Sensors:**
  IoT sensors detect available parking spaces.
- **Connectivity:**
  Data transmission through wireless networks.
- **Data Processing:**
  Real-time data analysis provides information on available parking.
- **User Interface:**
  Apps or digital displays guide drivers to available spots.

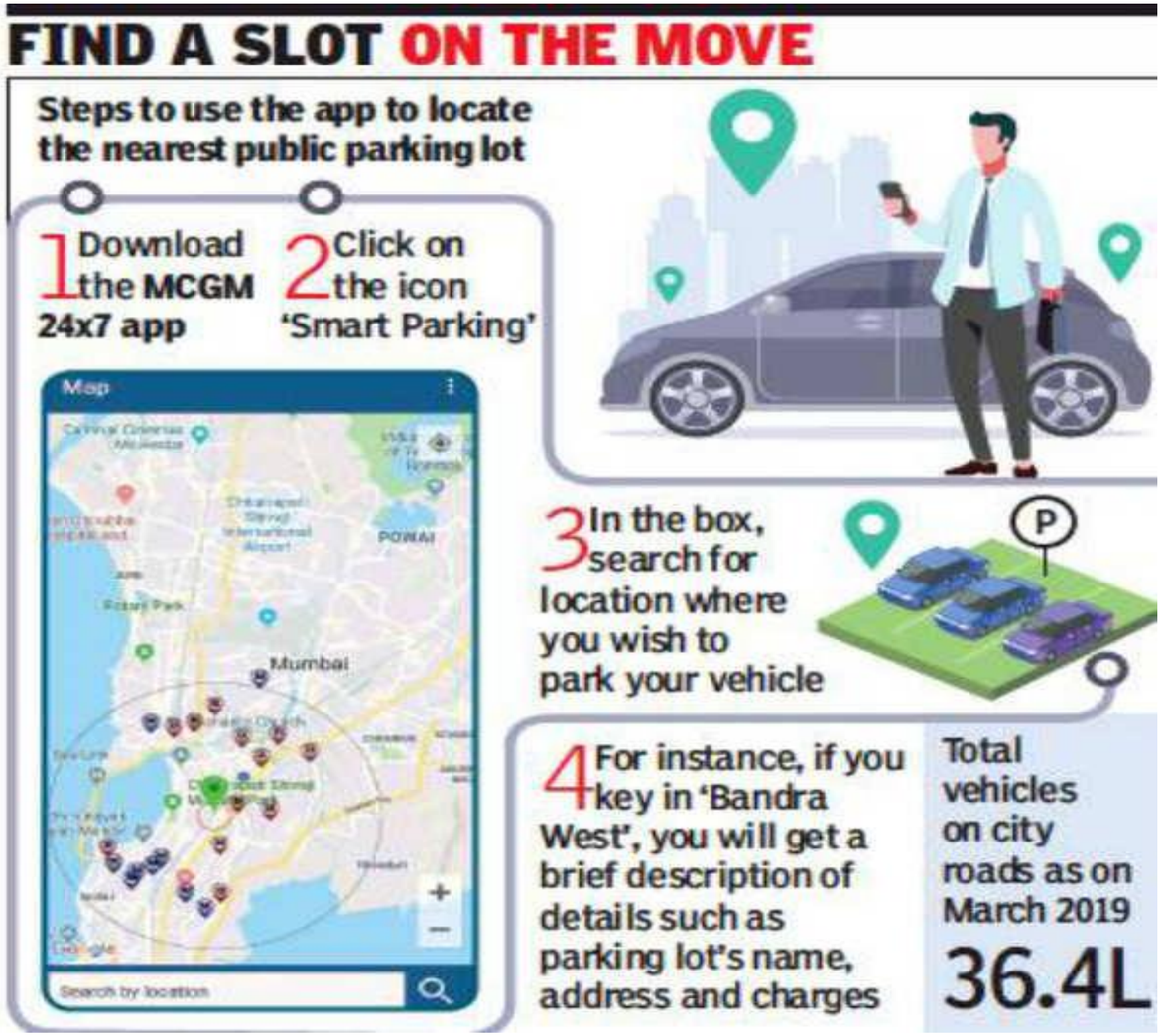


Reference :https://www.coolfiresolutions.com/wp-content/uploads/2019/01/CFS_Smart-Parking_v1.1.png

ACTIVITY

Design a basic smart parking system for your city

CASE STUDY :Mumbai: Now, locate a public parking lot on the MCGM 24x7 app



BENEFITS OF SMART PARKING

❖ **Efficiency:**

Faster parking, reduced search time.

❖ **Environmental Impact:**

Lower CO2 emissions.

❖ **Economic Benefits:**

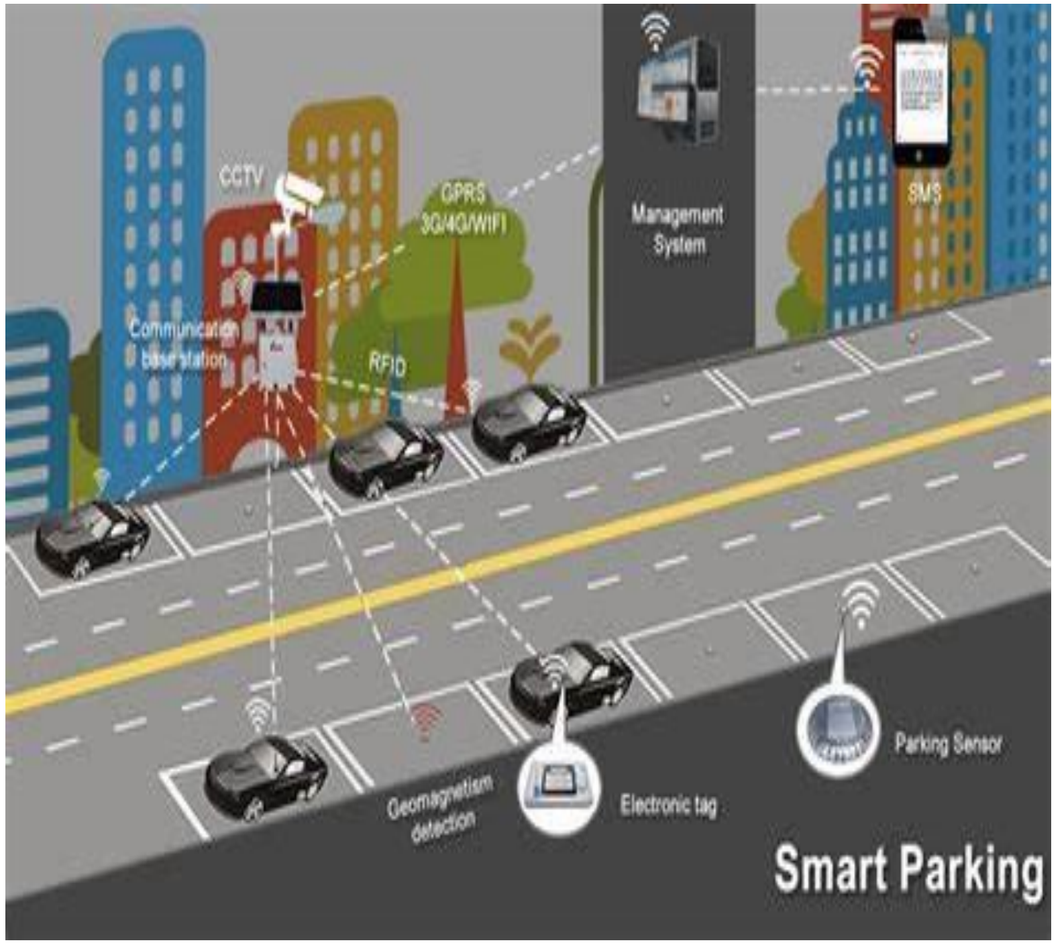
Increased revenue from optimized space usage.

❖ **User Experience:**

Enhanced convenience and satisfaction.

TECHNOLOGY BEHIND SMART PARKING

- **IoT Devices:-** Role in smart parking.
- **Data Analytics**:- Importance of big data and real-time analytics.
- **Machine Learning**:- Predictive analysis for better parking management.



Reference: https://th.bing.com/th/id/OIP.bhvXhvmnxbG4QHuPmfhmQwAAAA?rs=1&pid=ImgDetMain

CHALLENGES IN IMPLEMENTING SMART PARKING

- **Cost:**

High initial investment.

- **Maintenance:**

Regular upkeep of sensors and networks.

- **Data Privacy:**

Ensuring user data protection.

- **Integration:**

Compatibility with existing infrastructure.

FUTURE OF SMART PARKING

- **Advancements:**

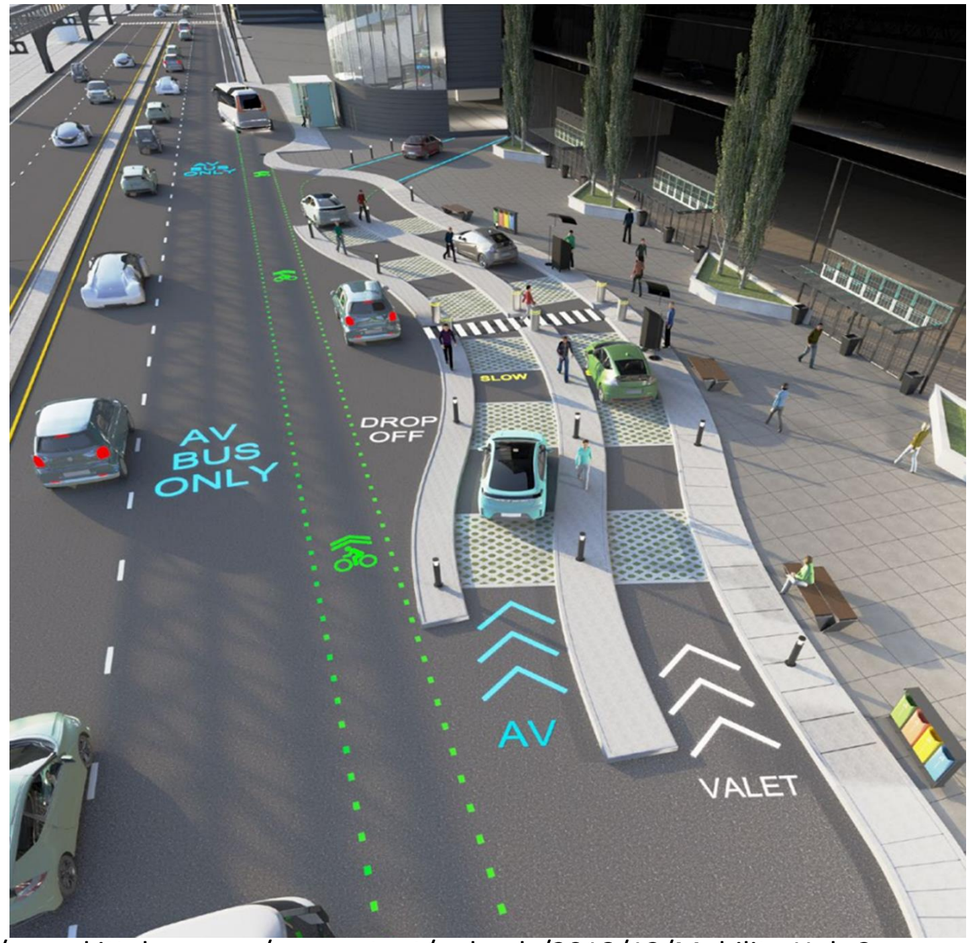
Emerging technologies (AI, 5G).

- **Integration:**

Part of a larger smart city ecosystem.

- **Sustainability:**

Long-term environmental and social benefits.



Reference: https://www.kittelson.com/wp-content/uploads/2018/12/Mobility-Hub-2.png

Assessment

1.Define Smart City

2.Benefits of smart parking

3.Technology behind smart parking

References

1. https://www.kittelson.com/wp-content/uploads/2018/12/Mobility-Hub-2.png.

2.https://th.bing.com/th/id/OIP.bhvXhvmnxbG4QHuPmfhmQwAAAA?rs=1&pid=ImgDetMain.

3. https://www.coolfiresolutions.com/wp-content/uploads/2019/01/CFS_Smart-Parking_v1.1.png

THANK YOU