Assignment

Smart -Bridge

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Question : List out 20 use cases of the Internet of Things.

1. Motion Detection

Motion detection technology is useful in detecting activity in high-security areas. In case any motion is detected, the user will immediately get a notification alongside a live feed of the area. Motion detection takes place using IoT cameras or IR sensors.

2. Fleet Tracking

The logistics application of IoT involves tracking fleets of large trucks and containers using sensors fitted in them. It also allows the tracking of speeds and conditions of the trucks and small ships close to the coast and monitoring the condition of the goods kept in them.

3. Platooning

Platooning is a transportation method in which a line of trucks follows a truck in the front at high speed. In such cases, the risk of accidents is always high since the trucks can crash into each other, even if one of the trucks comes to a sudden halt. IoT sensors fitted inside these trucks can be used to inform the whole line if even one truck needs to stop or increase speed to mitigate this risk.

4. Flood Alert

IoT devices can help coastal areas be alerted in case of incoming floods. Sensors deployed at a distance from the shore can detect tides and check if they are abnormally high, sending signals to emergency services in case they are.

5. Sports

Sports such as tennis use IoT-enables racquets to determine the force of every shot and tailor the technique of the player accordingly. Cricket and badminton have also begun to use similar technologies.

6. Industrial Process Automation/Optimisation

This may be considered the most important one among the internet of things examples in an industrial setup. Most industrial processes can be automated remotely without having to be anywhere close to the actual machines. Devices fitted with IoT sensors detect signals over wireless networks and get to work on precisely the task that has been assigned.

7. Energy Management

Among the primary Internet of Things examples across several fields is the management of the power consumed by devices, especially in the manufacturing industry, where massive amounts of power is utilised. When used aptly, IoT devices can help predict individual devices' power utilisation and help reduce over-utilisation by using them judiciously or in a power-saving mode.

8. Outdoor Surveillance

This is among the primary internet of things examples in daily life. If your outdoor camera is IoT enabled, you can get information about whether there is an intrusion in your house or if someone is at the door. More advanced IoT devices will also be able to predict who is at the door and inform you through face-mapping technology.

9. Smart Lighting

This is another one of the Internet of Things examples that have gradually been coming into common usage. Bulbs and battens connected to Wifi can be turned on and off remotely. Schedule for usage can be set for these devices along with their brightnesses controlled and their power consumption monitored. Using other IoT devices, smart lighting devices can also be turned on and off by voice alone. The power consumption of these devices can also be easily monitored using IoT.

10. Electronic Road Toll Collection and Traffic Management

Using the data generated by cameras and other IoT devices, traffic regulators can automate the timings of traffic lights on busy roads and highways. This can go a long way in making roads safer and less susceptible to accidents. IoT devices can also be used to make road toll completely automated. This is done by detecting when a car is driven into the toll collection zone and lifting the barrier only once the toll has been paid.

11. Smart Parking

It is hard to regulate the occupancy and parking coverage in large multi-story car parking facilities. Among the many Internet of Things examples is the use of IoT in such facilities for counting the number of cars that have driven into the facility and the number that have driven out. Specific devices can also give you the exact location where you have parked your car so you are not lost.

12. Noise Monitoring

Municipal corporations of large cities struggle incessantly with factories located inside the city that produce large amounts of noise throughout the day. The application of IoT in this domain is made by fitting the premises of such facilities with sensors that continuously monitor the noise being produced by them. If noise levels are frequently above the stipulated limit, then the company is warned to comply.

13. Structural Health Monitoring

Among the many Internet of Things examples in architecture are the remote monitoring of occurrences such as vibrations and other issues with a building’s structural integrity. This data can be used to determine whether any part of the building is weak and needs

maintenance. This can also predict the likelihood of damage and help prepare plans and schedules for maintenance.

14. Waste Management

Waste management is one of the most inefficient activities carried out in a city. It is primarily because waste management tools are not standardised, and the route being followed by waste collection trucks is often not well-planned. IoT devices can help municipal waste collectors monitor the schedule of their trucks, the capacity of waste dumps, and the overall efficiency of the process.

15. Water Conservation

Homeowners, as well as industrial facilities, seldom have an understanding of the available local water levels, whether in overhead tanks or underground storage systems. A part of the Internet of Things examples in this domain is monitoring these local water levels. When the people impacted realize that the water levels are low, they are more likely to indulge in water conservation activities.

16. Smart Irrigation

It is among the innovative Internet of Things examples in agriculture, under which a sensor can determine the amount of moisture in the soil and the weather conditions. Based on these parameters, this sensor determines precisely the amount of water required by the crops. It enables farmers to save water and grow crops more healthily.

17. Leakage Management

The leakage of water in domestic and industrial water tanks, water transportation tankers, and industrial water storage systems is the reason for the wastage of millions of gallons worth of water every year. This is mitigated by using IoT sensors that inform you as soon as they detect water leakage of any kind. This doesn’t just save water but also saves users the cost of the leaked water.

18. Water Quality Management

The rules of the water constitution have become more and more stringent over recent years. However, with water supplies being privatised, these rules can be flouted by companies providing unhealthy water to citizens. IoT examples in this sector involve fitting

sensors in water supplies to continuously monitor certain levels of chemicals and check whether they are below the required threshold included in the regulations. If not, the company supplying the water can potentially be penalised.

19. Ultraviolet Radiation Monitoring

Around 10% of the sun's light includes ultraviolet radiation. These rays can be harmful to the skin and have been related to various health problems. The concentration of these rays is different during different hours of the day. IoT sensors fitted outdoors can regularly inform you of the UV levels and warn you not to step outside when levels are too high.

20. Fall Detection

Senior citizens can face the problem of falling to the ground but not having the strength to get up. To mitigate this issue, specific Internet of Things examples may come to the rescue. A product designed especially for senior citizens can detect the fall and summon local resources to help them. This way, they do not have to spend a prolonged amount of time on the ground.