Assignment 1

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List out 20 use cases of the Internet of Things.

Use cases of IoT are:

1. IoT is used in field of **Manufacturing Industry** to build IoT-based factory automation and control projects include holistic smart factory solutions with numerous elements such as production floor monitoring, wearables and Augmented Reality on the shop-floor, remote PLC control, or automated quality control system.
2. IoT is used in **Water Management Systems** making whole process of management more agile. The system proposes sensors would be connected with each bin. If the amount of waste goes beyond the threshold, each bin will send notifications to the leading cloud program. The administrator of the city will be able to check the current condition of the waste of each section of the city.
3. IoT based applications are used in **Transportation** include telematics and fleet management solutions that connect with the local operating system within the car for vehicle diagnostic/monitoring such as battery monitoring, tire pressure monitoring, driver monitoring or simply vehicle tracking.
4. IoT in **packaging industry**: To preserve a product, the properly accurate temperature is needed. Embedded IoT sensors can change colour if the product is beyond temperature.
5. IoT is also used in **retail**, typical IoT in retail solutions include in-store digital signage, customer tracking and engagement, goods monitoring and inventory management and smart vending machines among others.
6. IoT is also used nowadays in **Smart Home systems** where appliance, fridge, air conditions, microwave oven, door home and security system, washing-machine, lightening, etc. are connected via the internet. Smart devices can control all those stuff from any part of the world.
7. **Smart City** is a great innovative example of the internet of things applications. This application consists of so many use cases like water management, traffic, and electricity management, waste management, etc.
8. IoT is used in **healthcare**, where typical healthcare IoT projects within hospitals/clinics include medical device monitoring, health team coordination, optimizing workflow operations while out-patient focused solutions include patient monitoring, assisted living, elderly care, and pain medication management among others.
9. **Supply Chain Management** using IoT applications include asset tracking, condition monitoring (e.g., cold chain, medical goods), inventory and storage management, automated guided vehicles, connected workers, among others.

10. IoT applications are changing our world, providing smart solutions. The idea of **connected factories** comprises of tools, machinery, and internet-connected sensors. It's a connected network with different tasks like schedule maintenance, the shipment of products, the flow of operation control and stop or pause a specific process.

11. IoT applications provide a solution by **GPS monitoring and RFID tag** in a product. IoT technology can solve all the problems of supply chain management.

12. IoT in **Traffic Monitoring Systems** is one of the IoT applications. Traffic control by using the internet of things gives us an intelligent solution with the use of image processing.

13. IoT can be also used in detecting and building **forest fire detection systems**. IoT application platform can offer an effective solution. Use of proper wireless sensor can detect forest fire before it spread out.

14. IoT is used in **livestock monitoring**, IoT-enabled livestock management solutions provides data on various aspects of cattle health. Using a wearable collar or tag with sensors monitor the location, temperature, blood pressure and heart rate of animals and wirelessly send the data in near-real-time to farmers' devices.

15. **Agricultural Drone**: Monitoring a massive crop field is not so easy. The agricultural drone is an aerial vehicle that can survey the massive field and reveal problems. Birds-eye view from the sky with sensors provides a clear and effective image. It can keep a great impact on agricultural business by saving time and accurate land management decisions.

16. IoT **in buildings** can be used by connected building projects that involves facility-automation and monitoring for building systems (HVAC, lighting, elevators, smoke alarms, fire extinguishers), building utilization and security (room use, access, surveillance).

17. IoT can also be used to **check portable water quality assurance**. The system sends notifications if common parameters include PH, salinity, temperature, turbidity, oxidation-reduction, and so more found one of the above danger levels.

18. **Urban Noise Detection** using IoT solution of this problem is to use of each smartphone as a sensor by embedding noise label detecting mobile apps. Data found from each location will save in the cloud, and a software program will show each zone with a high noise label.

19. IoT in **Precision Farming:** The idea of precision farming includes collecting data by field observation, vehicle monitoring, temperature and humidity measure, and so more. A core application analyses all those data and provides a decision.

20. IoT in **connected cars**. The idea of a connected car is when a car or any other vehicle can be controlled by a smartphone or any other device that is connected with the internet.