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Topic: internet of things

Github Link:

Why Is IoT so Important?

Over the past few years, IoT has become one of the most important technologies of the 21st century. Now that we can connect everyday objects—kitchen appliances, cars, thermostats, baby monitors—to the internet via embedded devices, seamless communication is possible between people, processes, and things.

What Technologies Have Made IoT Possible?

While the idea of IoT has been in existence for a long time, a collection of recent advances in a number of different technologies has made it practical.

- **Access to low-cost, low-power sensor technology.** Affordable and reliable sensors are making IoT technology possible for more manufacturers.
- **Connectivity.** A host of network protocols for the internet has made it easy to connect sensors to the cloud and to other "things" for efficient data transfer.
- **Cloud computing platforms.** The increase in the availability of cloud platforms enables both businesses and consumers to access the infrastructure they need to scale up without actually having to manage it all.
- **Machine learning and analytics.** With advances in machine learning and analytics, along with access to varied and vast amounts of data stored in the cloud, businesses can gather insights faster and more easily. The emergence of these allied technologies continues to push the boundaries of IoT and the data produced by IoT also feeds these technologies.

What Is Industrial IoT?

Industrial IoT (IIoT) refers to the application of IoT technology in industrial settings, especially with respect to instrumentation and control of sensors and devices that engage cloud technologies. Recently, industries have used machine-to-machine communication (M2M) to achieve wireless automation and control. But with the emergence of cloud and allied technologies (such as analytics and machine learning), industries can achieve a new automation layer and with it create new revenue and business models. IIoT is sometimes called the fourth wave of the industrial revolution, or Industry 4.0. The following are some common uses for IIoT:

- Smart manufacturing
- Preventive and predictive maintenance
- Smart power grids
- Smart cities
- Connected and smart logistics
- Smart digital supply chains

What Industries Can Benefit from IoT?

Organizations best suited for IoT are those that would benefit from using sensor devices in their business processes.

Manufacturing

Manufacturers can gain a competitive advantage by using production-line monitoring to enable proactive maintenance on equipment when sensors detect an impending failure. Sensors can actually measure when production output is compromised. With the help of sensor alerts, manufacturers can quickly check equipment for accuracy or remove it from production until it is repaired. This allows companies to reduce operating costs, get better uptime, and improve asset performance management.

Automotive

The automotive industry stands to realize significant advantages from the use of IoT applications. In addition to the benefits of applying IoT to production lines, sensors can detect impending equipment failure in vehicles already on the road and can alert the driver with details and recommendations. Thanks to aggregated information gathered by

IoT-based applications, automotive manufacturers and suppliers can learn more about how to keep cars running and car owners informed.

Retail

IoT applications allow retail companies to manage inventory, improve customer experience, optimize supply chain, and reduce operational costs. For example, smart shelves fitted with weight sensors can collect RFID-based information and send the data to the IoT platform to automatically monitor inventory and trigger alerts if items are running low. Beacons can push targeted offers and promotions to customers to provide an engaging experience.

Public Sector

The benefits of IoT in the public sector and other service-related environments are similarly wide-ranging. For example, government-owned utilities can use IoT-based applications to notify their users of mass outages and even of smaller interruptions of water, power, or sewer services. IoT applications can collect data concerning the scope of an outage and deploy resources to help utilities recover from outages with greater speed.

IoT has many applications, but today, we will cover the top 10 IoT use cases. So, let's get started and explore them one by one:

Smart Home

The number of people searching for smart homes increases every month by about 60,000 people. Another interesting thing is that the database of smart homes for IoT analytics includes 256 companies and startups. More companies are now actively involved in smart homes, as well as similar applications in the field. The estimated amount of funding for smart home startups exceeds $2.5 billion and growing at a rapid rate. The list of startups includes prominent startup company names, such as AlertMe or Nest, as well as a number of multinational corporations, like Philips, Haier, or Belkin.

Smart City

Smart cities, like its name suggests, is a big innovation and spans a wide variety of use cases, from water distribution and traffic management to waste management and environmental monitoring. The reason why it is so popular is that it tries to remove the discomfort and problems of people who live in cities. IoT solutions offered in the smart city sector solve various city-related problems, comprising of traffic, reducing air and noise pollution, and helping to make cities safer.

Smart Retail

Retailers have started adopting IoT solutions and using IoT embedded systems across a number of applications that improve store operations, increasing purchases, reducing theft, enabling inventory management, and enhancing the consumer's shopping experience. Through IoT physical retailers can compete against online challengers more strongly. They can regain their lost market share and attract consumers into the store, thus making it easier for them to buy more while saving money.

Smart Farming

Smart farming is an often overlooked in IoT applications. However, because the number of farming operations is usually remote and the large number of livestock that farmers work on, all of this can be monitored by the Internet of Things and can revolutionize the way farmers operate day to day. But, this idea is yet to reach a large-scale attention. Nevertheless, it still remains one of the IoT applications that should not be underestimated. Smart farming has the potential to become an important application field, specifically in the agricultural-product exporting countries.

Source Code:

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        .first
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                position: relative;
                left: 400px;
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            }

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                height: 300px;
            }

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            }
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</head>
<body>
    <h1>The Internet of Things</h1>

    <!--navbar-->

    <div class="navbar">
        <ul>
            <li><a href="Home.html">Home</a></li>
            <li><a href="Uses of programming languages.html">Applications</a></li>
            <li><a href="Windows Application.html">Technologies </a></li>
            <li><a href="Web.html">industries</a></li>
            <li><a href="About Common Programming Languages.html">importance</a></li>
        </ul>
    </div>


    <!--Windows Application-->


    <h2>
        <i><a name="windows"> Industries Can Benefit from IoT</a></i>
    </h2>

    <div>

        <p style="font-size: larger;">
Organizations best suited for IoT are those that would benefit from using sensor devices in their business processes.
 </p>
```

The Internet of Things

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Transportation and Logistics:
Transportation and logistical systems benefit from a variety of IoT applications. Fleets of cars, trucks, ships, and trains that carry inventory can be rerouted based on weather conditions, vehicle availability, or driver availability, thanks to IoT sensor data. The inventory itself could also be equipped with sensors for track-and-trace and temperature-control monitoring. The food and beverage, flower, and pharmaceutical industries often carry temperature-sensitive inventory that would benefit greatly from IoT monitoring applications that send alerts when temperatures rise or fall to a level that threatens the product.

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The increase in the availability of cloud platforms enables both businesses and consumers to access the infrastructure they need to scale up without actually having to manage it all.

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IoT so Important

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By means of low-cost computing, the cloud, big data, analytics, and mobile technologies, physical things can share and collect data with minimal human intervention. In this hyperconnected world, digital systems can record, monitor, and adjust each interaction between connected things. The physical world meets the digital world—and they cooperate

The internet of things, also known as IoT, like it or not—understand it or not—has, in recent years, successfully disrupted our daily lives to the point that even the non-technologically inclined have started to buy into the convenience, the comfort, and the valuable insights that it offers.

From connected home hubs, smart thermostats, remote door locks, and all the various app-controlled appliances, chances are, you already know how helpful IoT is in your everyday life.

The truth is, IoT is growing in importance, both for industrial use and everyday use. It is making our lives better in so many ways, and it will likely continue to do so. Along with the problems we know we have, it is solving problems we didn't even realize were a problem – that is until the solution magically appeared.

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Application:

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Whenever we think of IoT systems, the most important and efficient application that stands out is the smart home, ranking the highest IoT application on all channels. The number of people searching for smart homes increases every month by about 60,000 people. Another interesting thing is that the database of smart homes for IoT analytics includes 256 companies and startups. More companies are now actively involved in smart homes, as well as similar applications in the field. The estimated amount of funding for smart home startups exceeds $2.5 billion and growing at a rapid rate. The list of startups includes prominent startup company names, such as AlertMe or Nest, as well as a number of multinational corporations, like Philips, Haier, or Belkin.

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```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title> home  </title>
        <style>
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                font-size: 17px;
                background-color: rgb(225, 225, 225);
                margin: 0 30px 0 30px ;
                padding-bottom: 20px;
                }

            .navbar
                {
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                    bottom: 25px;
                }

            li a
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                    text-align: center;
                    text-decoration: none;
                    margin-right: 40px;
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                    transition: all 0.5s ease-in-out;
                }

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                    padding-left: 80px;
                    background-color: rgb(83, 78, 79);
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                }

            div ul li:hover
                {
                    background-color: white;
                }

            div ul li:hover a
                {
                    color: black;
                }
```