Date

Smart Water

Fountain

# **Objective:**

# *Fountains wirelessly communicate with base stations. Base stations collect and transmit usage, filter, and system health information to the cloud via Ethernet. Wireless communications use a low-power unlicensed band for improved security and power savings.*

# **Iot control in water flow:**

# *The IoT water valve, embedded within the IoT water distribution system, lets you control the water flow remotely. A complete water quality monitoring solution, which provides various water quality measures. The IoT water sensors ingest the water quality data and transmit it to the cloud through gateways.*

# *In this Internet of Things based water level controller system the level of water is controlled by using a microcontroller. Main components are ATmega328 microcontroller, sensor, motor, etc. The proposed system works making use of ultrasonic sensor to detect the level of water in a tank.*

# **Using iot sensors:**

# *IoT helps authorities check the quality of water, while sensors measure its conductivity, turbidity, temperature, and thermometry.*

# **Iot sensors system:**

# **1.Tempreature sensor**

*Temperature sensors measure the amount of heat generated from an area or an object. They detect a temperature change and convert the findings to data. Temperature sensors are used in various industries, including manufacturing, healthcare, and agriculture. Some examples are thermistors, thermocouples, and resistor temperature detectors (RTD).*

**2. Proximity sensor**

*Proximity sensors detect the presence or absence of objects near the sensor without physical contact. They often emit a beam of radiation like infrared or an electromagnetic field. They can be used for process monitoring and control, object counting, assembly lines, and determining available space. Proximity sensors are common in retail settings, industrial complexes, and parking lots. Some examples are photoelectric, magnetic, capacitive, inductive, and ultrasonic.*

**3. Pressure sensor**

*These sensors detect changes in a gas or liquid. When the pressure range is beyond a set threshold, pressure sensors alert to the problem. They are used for leak testing, water systems, vehicles, and aircraft. For example, the BMP180 is a digital pressure sensor found in cell phones and GPS navigation devices. And some vehicles use a tire pressure monitoring system (TPMS) to alert when tire pressure is low and Potentially unsafe.*

**4. Water quality sensor**

*As you’d expect, water quality sensors monitor the quality of water. They are often used in water distribution systems, but they function in a variety of industries. There are different kinds of water sensors, including residual chlorine sensors, turbidity sensors, pH sensors, and total organic carbon sensors.*

**5. Infrared sensor**

*Some sensors either detect or emit infrared radiation to sense characteristics and changes in the surrounding area. They’re useful for measuring heat emissions from an object. Infrared sensors are used in remote controls, healthcare settings, and even by art historians authenticating artwork.*

**Developing The Water Fountain:**

*Aquatic facilities, and water fountains, in particular, are integral to urban development and innovation. They can completely transform the appearance and atmosphere of a space, to enrich the built environment for a much more enjoyable experience.*

*In many cities across the world, there has sometimes been a rush to quickly develop urban areas, with the main focus on creating as much office and retail space as possible. In this situation, the overall goal has often been to generate maximum financial profit.*

*However, city planners these days are now much more aware of other issues, such as the need to also consider and promote the wellbeing of city residents and visitors. So, thankfully, the focus is increasingly turning toward the quality of this urban space, rather than just the quantity.*

*This article explains the top 3 benefits of aquatic facilities such as urban fountains when they are incorporated within urban innovation and development projects.*

*The main benefits of using fountains in urban development can be grouped into three categories: beautification of the space, cooling effects, and promoting tourism. Each of these categories is discussed in more detail below.*

*The use of one or more fountains can help to create a natural atmosphere in parks and public gardens. This comes from the sound and visual aesthetic of using one of nature’s most precious resources: water.*

*Fountains come in all shapes and sizes, from a small ornamental fountain and the magnificent Trevi fountain in Rome to a dry deck fountain (funsquare) with numerous high-speed, interactive vertical water jets for play or display. These fountains might also include visually exciting lights, which can be choreographed for a show or used regularly as night lighting.*

*In this way, the beautification of space can massively rehabilitate public squares, roundabouts, or municipal zones, for example, so that they meet the needs of modern society.*

**Using IOT Technology And Python:**

*The last reason to use IoT with Python is because it is a great tool for data analysis and visualization, this is important in IoT applications where data is a key component. Python provides libraries such as Pandas, NumPy, and Matplotlib, which make it easy to process and visualize data from IoT sensors and devices.*

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*Python provides libraries such as Pandas, NumPy, and Matplotlib, which make it easy to process and visualize data from IoT sensors and devices.*

1. *Python is commonly used with Raspberry Pi, ESP32, among other options. As we mentioned above, there are several benefits of creating python IoT projects, and we want to give you some examples of the things that can be done by combining IoT with Python.*
2. *For instance, imagine being able to use Raspberry Pi and python to create a home system that can interact with all IoT devices at home, and from there, being able to control their different functions*
3. *Another case would be to create a smart lights system with LEDs, Python, and Raspberry Pi. Thanks to this programming language, you could simply turn on or off these lights.*
4. *If you are using temperature and humidity sensors in your IoT device, you could use Python language to read all data from the sensors, and send it over the internet to an application for further analysis.*
5. *These were some examples of what you can do with IoT and Python. You probably have more ideas that you want to develop, whether you need electronics product design, or a good IoT hardware development company, we can provide you with a great consultation for taking your IoT idea or product to a whole new level.*

**Integration With Iot :**

*It’s the process of connecting sensors and objects with one another and with your applications and databases. Once connected, you can implement end-to-end automations that help you make full use of your equipment.*

*IoT integration is all about APIs, the logical connectors that allow applications to communicate with each manufacturer’s IoT devices. APIs expose data that enables those devices to transmit data to your applications, acting as a data interface.*

**Integration Of Python:**

*Python is simple and provides accessible solutions for integration as compared to relational database tools like Postgres, MySQL, and SQLite which presents information in rows and table forms or non-relational databases like MongoDB which stores data as a series of JSON files.*