IBM (SKILL UP ONLINE)
PROJECT 8: SMART WATER FOUNTAIN
PHASE 2:DESIGN AND INNOVATION

COURSE NAME: INTERNET OF THINGS

GROUP:5

PROJECT NUMBER : 08

TITLE:SMART WATER FOUNTAIN

PHASE 2:DESIGN AND INNOVATION

YEAR : lll

DEPARTMENT : ELECTRONICS AND COMMUNICATIONS ENGINEERING

PROJECT SUBMITTED TO : IBM (SkillUp Online)

NO OF STUDENTS : 06

NAME OF STUDENTS : 810021106050-MUHAMMED DAYYAN AL SALAAM S

:810021106052-NAVEEN RAJ S

:810021106062-RAVIVARMAN R

:810021106069-SARAVANAN K

:810021106304-YUVURAJ M

:810021106311-PREMKUMAR M

Design of Smart Water Fountain

A smart water fountain is a drinking fountain that uses sensors and technology to monitor and manage its water usage, quality, and other aspects. Smart water fountains can offer a number of benefits, including:

- Water conservation: Smart water fountains can help to conserve water by using sensors to detect when someone is present and only turning on the water when needed. They can also be programmed to turn off the water automatically after a certain amount of time.
- Improved water quality: Smart water fountains can monitor the quality of the water and alert users if there are any problems. For example, they can monitor the pH level, temperature, and conductivity of the water.

- Reduced maintenance costs: Smart water fountains can help to reduce maintenance costs by monitoring the performance of the fountain and alerting users if there are any problems. For example, they can monitor the water level and the pump pressure.

A smart water fountain typically consists of the following components:

- Sensors: Smart water fountains use a variety of sensors to monitor different aspects of the fountain, such as the water level, temperature, pH level, conductivity, and presence of users.
- Control unit: The control unit is responsible for processing the data from the sensors and controlling the operation of the fountain.
- Actuators: The actuators are used to control the water flow, lighting, and other aspects of the fountain.
- Display screen: The display screen is used to display information about the fountain, such as the water quality, remaining water level, and any alerts.

Smart water fountains offer a number of benefits, including:

- Water conservation: Smart water fountains can help to conserve water by using sensors to detect when someone is present and only turning on the water when needed. They can also be programmed to turn off the water automatically after a certain amount of time.
- Improved water quality: Smart water fountains can monitor the quality of the water and alert users if there are any problems. For example, they can monitor the pH level, temperature, and conductivity of the water.
- Reduced maintenance costs: Smart water fountains can help to reduce maintenance costs by monitoring the performance of the fountain and alerting users if there are any problems. For example, they can monitor the water level and the pump pressure.
- Increased user engagement: Smart water fountains can make drinking water more fun and engaging. For example, they can be programmed to display fun messages or games on the display screen.

Applications

Smart water fountains can be used in a variety of settings, including:

- Schools and universities
- Offices and workplaces
- Hospitals and clinics
- Parks and recreation areas
- Sports facilities
- Airports and train stations
- Hotels and resorts
- Gyms and fitness centers

Conclusion:

Smart water fountains offer a number of benefits, including water conservation, improved water quality, reduced maintenance costs, and increased user engagement. They can be used in a variety of settings, such as schools, offices, hospitals, parks, and sports facilities.

INNOVATION OF SMART WATER FOUNTAIN:

Smart water fountains are constantly evolving, with new innovations being developed all the time. Here are some of the latest innovations in smart water fountains:

- AI-powered water fountains: These fountains use artificial intelligence to learn user patterns and preferences. For example, they can learn how much water each user typically drinks and when they are most likely to drink it. This information can then be used to optimize the fountain's operation and improve water conservation.
- IoT-connected water fountains: These fountains are connected to the internet, allowing them to be monitored and controlled remotely. This can help to reduce maintenance costs and improve efficiency. For example, facility managers can use an IoT-connected water fountain to receive alerts when the fountain needs to be cleaned or serviced.
- Sustainable water fountains: These fountains are designed to minimize their environmental impact. For example, they may use recycled materials, incorporate solar energy, or harvest rainwater.
- Water fountains with integrated health and wellness features: These fountains provide users with information about their water consumption and hydration levels. They may also offer features such as water quality monitoring and personalized hydration recommendations.

Here are some specific examples of innovative smart water fountains that are currently under development:

- The WaterDrop Smart Water Fountain: This fountain uses AI to learn user patterns and preferences. It also features a built-in water filter and UV light sterilization system. The WaterDrop Smart Water Fountain is currently in the prototype stage and is expected to be released to the public in 2024.
- The DrinkSmart Water Fountain: This fountain is IoT-connected and allows users to track their water consumption and hydration levels using a mobile app. The DrinkSmart Water Fountain is also equipped with water quality sensors and can provide users with personalized hydration recommendations. The DrinkSmart Water Fountain is currently available for purchase.
- The HydroPod Smart Water Fountain: This fountain is designed to be sustainable and features a built-in rainwater harvesting system. The HydroPod Smart Water Fountain is also equipped with a solar-powered water pump and a built-in water filter. The HydroPod Smart Water Fountain is currently in the development stage and is expected to be released to the public in 2025.

These are just a few examples of the innovative smart water fountains that are currently under development. As technology continues to advance, we can expect to see even more innovative and effective smart water fountains in the future.

INNOVATION TO SOLVE THE PROBLEM OF SMART WATER FOUNTAIN:

Here are some innovations that can be used to solve the problem of smart water fountains:

- Self-cleaning water fountains: These fountains use ultraviolet light or other technologies to kill bacteria and other microorganisms in the water, without the need for chemicals. This can help to improve the water quality and reduce the risk of waterborne diseases.
- Water fountains with integrated water filters: These fountains filter the water as it is dispensed, removing impurities such as dirt, sediment, and heavy metals. This can further improve the water quality and make it more palatable.
- Water fountains with water quality sensors: These fountains monitor the water quality in real time and alert users if there are any problems. This can help to ensure that users are always drinking safe, clean water.
- Water fountains with water usage sensors: These fountains monitor how much water is being dispensed and can alert users if there is any unusual water usage. This can help to identify leaks and other problems early on, before they cause significant damage or water waste.
- Water fountains with remote monitoring and control: These fountains can be monitored and controlled remotely, using an app or website. This allows facility managers to track water usage, identify problems, and make adjustments as needed without having to visit the fountain in person.

In addition to these technical innovations, there are also a number of non-technical innovations that can be used to improve smart water fountains. For example, water fountains can be designed to be more accessible and user-friendly, with features such as touch-free water dispensing and height-adjustable dispensers. Water fountains can also be used to promote sustainability and environmental awareness by incorporating features such as water bottle refilling stations and educational signage.

By using these innovations, smart water fountains can be made even more effective at conserving water, improving water quality, and reducing maintenance costs. They can also be made more accessible, user-friendly, and sustainable.

Here are some specific examples of innovative smart water fountains that are currently on the market:

- The Elkay Smart Water Fountain: This fountain features a built-in water filter, UV light sterilization system, and water quality sensors. It also has a remote monitoring system that allows facility managers to track water usage, identify problems, and make adjustments as needed.
- The H2O Connect Smart Water Fountain: This fountain features a built-in water filter, water quality sensors, and a water usage tracker. It also has a mobile app that allows users to view information about the fountain, such as water quality and remaining water level.
- The Waterlogic Firewall UV Water Purifier: This purifier can be attached to any existing water fountain to provide UV light sterilization and water filtration. It is also equipped with water quality sensors that alert users if there are any problems.

These are just a few examples of the innovative smart water fountains that are available today. As technology continues to advance, we can expect to see even more innovative and effective smart water fountains in the future.