SMART WATER FOUNTAIN_PHASE 3

PHASE 3

Development of Smart Water Fountain Using Raspberry Pi

A smart water fountain is a water fountain that uses technology to control the flow of water and other features. It can be controlled remotely using a smartphone app or other device. Smart water fountains are becoming more popular as they offer a number of advantages over traditional water fountains.

Advantages of Smart Water Fountains

- Water conservation: Smart water fountains can help to conserve water by only flowing water when it is needed. This can be done by using sensors to detect the presence of a user or by using a timer to control the flow of water.
- Convenience: Smart water fountains can be controlled remotely, which makes them more convenient to use. For example, a user can turn on the water fountain before they arrive at the office or home, or they can turn it off when they leave.
- Safety: Smart water fountains can be made safer by using sensors to detect leaks or by using a timer to shut off the water flow after a certain period of time.

To build a smart water fountain using Raspberry Pi, you will need the following components:

- Raspberry Pi
- Relay board
- Water pump
- Solenoid valve
- Water level sensor
- Power supply
- Enclosure

Once you have all of the necessary components, you can follow these steps to build your smart water fountain:

1. Connect the relay board to the Raspberry Pi.
2. Connect the water pump to the relay board.
3. Connect the solenoid valve to the relay board.
4. Connect the water level sensor to the Raspberry Pi.
5. Connect the power supply to the Raspberry Pi and the relay board.
6. Place all of the components in the enclosure.

Once the smart water fountain is assembled, you can write a program to control it. The program should read the water level sensor and turn on the water pump when the water level is low. The program should also turn off the water pump when the water level is high.

Here is a simple example of a Python program to control a smart water fountain:

```
import RPi.GPIO as GPIO
GPIO.setmode(GPIO.BCM)
# Set up the relay board
relay_pin = 18
GPIO.setup(relay_pin, GPIO.OUT)
# Set up the water level sensor
water_level_pin = 17
GPIO.setup(water_level_pin, GPIO.IN)
# Turn off the water pump
GPIO.output(relay_pin, GPIO.LOW)
# Loop forever
while True:
# Read the water level sensor
water_level = GPIO.input(water_level_pin)
# If the water level is low, turn on the water pump
if water_level == GPIO.LOW:
GPIO.output(relay_pin, GPIO.HIGH)
 # If the water level is high, turn off the water pump
 elif water_level == GPIO.HIGH:
 GPIO.output(relay_pin, GPIO.LOW)
```

we can also add additional features to your smart water fountain, such as the ability to control it remotely using a smartphone app or other device. You can also add sensors to detect the presence of a user or to monitor the water quality.