

Continue building the project by developing the water fountain status platform.

Objectives

A well-designed fountain adds freshness to any public space, boosting it both socially and economically by attracting more tourists and also local residents. In this way, people from near and far will have a place for leisure, fun, or just simple relaxation.

Building the Fountain

1. Step 1: Seal Off the Drainage Holes. Place the 19-1/4-inch glazed ceramic outdoor pot facedown. ...
2. Step 2: Install the Water Pump. ...
3. Step 3: Thread the Pump's Cord. ...
4. Step 4: Seal Off the Power Cord. ...
5. Step 5: Set the Pot and Pump. ...
6. Step 6: Fill the Fountain Pot. ...
7. Step 7: Fill the Fountain.

Use web technologies development

There are three main languages we use to build websites are HTML, CSS, and JavaScript. JavaScript is the programming language, we use HTML to structure the site, and we use CSS to design and layout the web page. These days, CSS has become more than just a design language



How To Create A Layout And Build A Website Using HTML And CSS

1. Step 1: Create a Layout. ...
2. Step 2: Set up the boiler code. ...
3. Step 3: Create major elements in the layout. ...
4. Step 4: Create the HTML content. ...
5. Step 5: Create CSS for the layout. ...
6. Step 6: Create CSS to style individual elements. ...
7. Step 7: Add background color and style.

HTML

HTML stands for **H**yper **T**ext **M**arkup **L**anguage

HTML is the **standard markup** language for Web pages

elements are the building blocks of HTML pages HTML elements are represented by **<> tags**.

HTML example:

```
<!DOCTYPE html>

<html>

<head>

  <title>Smart Water Fountain Control</title>

  <link rel="stylesheet" type="text/css" href="styles.css">

</head>

<body>

  <h1>Smart Water Fountain Control</h1>

  <div id="waterLevel">Water Level: <span id="level">...</span></div>

  <button id="startButton">Start Fountain</button>

  <button id="stopButton">Stop Fountain</button>

  <script src="script.js"></script>

</body>

</html>
```

CSS

CSS is the language we use to style an HTML document.

CSS describes how HTML elements should be displayed. This tutorial will teach you CSS from basic to advanced.

CSS example:

```
body {  
    font-family: Arial, sans-serif;  
    text-align: center;  
  
}  
  
h1 {  
    color: #007ACC;  
}  
  
button {  
    background-color: #007ACC; color: white;  
    padding: 10px 20px;  
    margin: 10px; border:  
    none; cursor: pointer;  
}  
  
#waterLevel { font-  
    size: 20px;  
}
```

JAVASCRIPT

JavaScript is the world's most popular programming language.

JavaScript is the programming language of the Web. JavaScript is easy to learn.

This tutorial will teach you JavaScript from basic to advanced.

Javascript example: `document.addEventListener("DOMContentLoaded", function() {
 const waterLevelDisplay = document.getElementById("level"); const startButton =
 document.getElementById("startButton");`

```

const stopButton = document.getElementById("stopButton");

// Simulated water level (replace with real data)let waterLevel =
50;

// Update the water level displayfunction
updateWaterLevel() {
    waterLevelDisplay.textContent = waterLevel + "%";
}

// Event listeners for buttons startButton.addEventListener("click",
function() {
    // Add code to start the fountain
    // For example: send a request to your hardware to turn on the pump
});

stopButton.addEventListener("click", function() {
    // Add code to stop the fountain
    // For example: send a request to your hardware to turn off the pump
});

// Update the water level periodically (replace with real data)setInterval(function() {
    // Simulated change in water level
    waterLevel = Math.floor(Math.random() * 101);updateWaterLevel();
}, 5000); // Update every 5 seconds

});

```

Design Process & Guidelines

1. Determine the effect desired.

- Consider the size of the effect in relation to the size of the pool, the site and surroundings.
- Most fountain pools are 18" deep, so be sure to provide a sufficient volume of water to produce the satisfactory effect.

2. Define size, shape & depth of your pool. ...

- This planning should involve such factors as the pool configuration most suitable for the site.
- Pool location and orientation.
- Materials you wish to use.
- Available water supply, etc.

3. Choose the proper pump and piping. ...

- The nature of the effect, elevations, piping distances, fittings and valves will determine the size of the pump required.
- Large fountains normally use centrifugal turbines or flooded end pumps, while less expensive, easier to install submersible pumps are specified for smaller effects.

4. Choose your filters. ...

- **Water Clarity:** Water clarity and condition are important in all fountains, and most fountains use a small recirculating pump and sand filters, with skimmers or floor drains returning with water to the filters. This action can be independent of the water effect.
- **Sand Filter:** A high-rate sand filter area for each 1000 cubic feet of pool area, is normally recommended for larger fountains, with the filter supplied by an independent pump. For filters 30" in diameter or less, this is usually included.
- **Pump Filter Screen:** Many smaller fountains rely on the pump filter screen for water clarity, and are simply drained when necessary.

- **Chemical Addition:** When chemical addition is desirable, metering pumps with hypochlorite systems may be used. A reliable pool service to monitor and maintain water clarity and chemistry is often the simplest answer to water treatment concerns.
- **Pool or Reservoir:** The size of a pool or reservoir and the size of its water effect are interrelated. The pool must contain a sufficient volume of water to meet the requirements of the effect, and be large enough to contain the splash or wave action it produces. This splash pattern will be approximately as wide as its height, so the pool's minimum diameter should be twice the height of the effect. In addition, jets, fountains and waterfalls require that both flow rates and pressures be adequate to produce the visual effect desired.
- **Waterfalls:** Waterfalls have unique flow requirements. A weir depth of 1/4" requires a flow of 10 GPM per linear foot of weir. A depth of 1/2" needs 20 GPM; and a depth of 3/4" needs 30 GPM. The total height of a weir should not exceed the distance from its base to the pool's edge.

5. Define and locate plumbing for pump and filter systems; locate sensors, lights and junction boxes to be in the pool. ...

Pumping systems often need anti-vortex plates for inlet lines, shut-off and flow control valves, and strainers.

Filter systems include antivortex plates, inlet fittings, skimmers and vacuum fittings.

The electrical systems normally include underwater junction boxes, low water cut-off sensors, water make-up and wind sensors, times and lighting fixtures.

6. Determine your lighting requirements.

- Lighting may provide overall pool lighting, illuminate key elements and create visual contrast between elements.
- Underwater units should be located about 2" below the water surface, and may up-light jets, spray rings, cascades, etc.
- Flood lights accent above-water elements or provide safe area illumination.





Water flow rate

If water flow is non-existent, or extremely low, check for an air lock in the supply. If one supply is blocked, it will result in the flow being not only too low, but also too hot or cold. During a brand new installation, it is not at all uncommon for scale, debris and grit to work their way into your new valve.

The volume of water moving past a particular point during a given time period. Discharge or flow (either term is acceptable) applies to rivers and streams and is reported as cubic feet per second (cfs) or cubic meters per second (cms).

HOW TO CALCULATE WATER FLOW RATE


BUCKET


TIMER

Get your timer ready and run the tap until the bucket or measuring jug is completely full.

Use the following formula:

$$\frac{\text{Volume of container}}{\text{Time to fill in seconds}} \times 3600 = \text{litres per hour (LPH)}$$

A water fountain or drinking fountain is designed to provide drinking water and has a basin arrangement with either continuously running water or a tap. The drinker bends down to the stream of water and swallows water directly from the stream.

Conclusion

The conclusion from the observation that a fountain of water is created at the leaking joint of pipes of the main water supply line that the pressure exerted on the small hole of the pipe of main water supply that makes the water move out of the pipe through the pressure and hence form a fountain.