Smart Aquarium System

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• Main Components
• Main Features
• Operating Details
• Markets
• Estimated Cost
• Upgrades
Main Components

- Sensors
  - Capacitive Sensor
  - Temperature Sensor
  - Photoresistor

- Actuators
  - Water Heater
  - Water Pump
  - Servomotors
  - Power Switch
  - Temperature Dial
Main Features

Water Level
- Monitors and Sets Desired Water Level
- Maintains Desired Water Level

Water Temperature
- Controls Water Temperature
- Maintains Desired Water Temperature

Automated Food Dispenser
- Regulates Food Quantity Dispensed and Scheduling
Operating Detail

Water Heater
Operating Detail

Temperature Probe

Push Button
Operating Detail

Servomotors

- Vdd
- Pin14: White, Red, Black
- Vss

- Vdd
- Pin13: White, Red, Black
- Vss

Photoresistor

- +5 VDC
- Pin 11
- 100 ohm
- 0.01 μF
- Pin 10
- 470 Ω
- LED

Photoresistor & LED
Operating Detail

Water Pump

![Diagram](image-url)
Markets
## Estimated Cost

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board of education &amp; Basic Stamp 2</td>
<td>$100</td>
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<tr>
<td>Water Heater</td>
<td>$20</td>
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<tr>
<td>Food Dispenser</td>
<td>$40</td>
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<tr>
<td>Water Tank</td>
<td>$10</td>
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<td>Water Tank Cover</td>
<td>$5</td>
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<td>Solid State Relay</td>
<td>$15</td>
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<tr>
<td><strong>Total Expenses</strong></td>
<td><strong>$200</strong></td>
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</tbody>
</table>
Upgrades

• Higher Consistency Capacitive Sensor
• Higher Temperature Accuracy - Math processor
• Error-Checking Food Dispenser – Weight Detection
• Easier User Input - Digital Dials (LCD)
• Customized/Multiple Water sensors