Tide Clock

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Goals:

For this project, the goal was to emulate the changing tides of the ocean.

Technical Write up:

From a technical point of view emulating the changing tides of the ocean would be accomplished through a series of components working in tandem to inform the appropriate action. At the heart of this project is an Arduino Uno. To solve the issue of finding the appropriate tide, a Real-Time Clock module or RTC would be used to retrieve accurate times that inform what the correct tide is. To maintain the correct water level, a water level resistor was used. Values generated from the water level resistor would set the appropriate value each tide should be at. The final component used is a peristaltic pump. The pump is controlled via an H Bridge so it can run in both forward and reverse. The pump is activated by comparing the current level in the tank versus the desired water level for the current tide.

Parts list:

Arduino Uno

https://www.arduino.cc/en/main/arduinoBoardUno

Prototyping shield

http://www.jameco.com/z/A000077-Arduino-Arduino-UNO-Proto-Shield-Rev-3-assembled\_2152391.html?CID=GOOG&gclid=CP7t4ue439MCFYVbfgodP18KdQ

H Bridge

https://www.adafruit.com/product/807

Peristaltic Pump

https://www.adafruit.com/product/1150

RTC module

https://www.amazon.com/DS1307-AT24C32-Clock-Module-Arduino/dp/B017EAY4VY/ref=sr\_1\_48?ie=UTF8&qid=1494217626&sr=8-48&keywords=real+time+clock

Water level resistor

https://www.adafruit.com/product/463

560k resistor