Phase 1: **Smart Water Fountains**

Problem Definition:

Our goal is to design a Smart water fountain that monitor the water quality and automatically replace water when polluted or running out.

Design Thinking:

- Able to drain the polluted water and replace it with fresh water. Specifically, the polluted water will be drained by a motor-controlled valve to the “polluted water temporary storage tank” part. After completing the draining process, fresh water will be pumped from the general water supply.

- The fountain must accurately monitor the water quality, including measuring water temperature up to 48.89C and pH values between 6.5 and 8.5.

- Able to be connected to the users’ devices through WIFI. Prompt feedback from the smart water fountain to users’ interface with relevant information including the remaining water level and water quality index: ‘Good’, ‘Average’ and ‘Poor’.

- The smart water fountain can be divided into four modules, including Power Supply, Control Unit, External Control, and Mechanical Unit.