

Are you dry? - A controllable floor drain device to prevent virus intrusion

Are you dry? — 一種可防可控的地漏裝置



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Are you Dry?

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Background



Background



- Since the outbreak of the Covid-19 in 2020, there has been a growing awareness of infectious diseases.
- There are one area that is often overlooked is the intercepting trap.
- Under the floor drain is connected to the intercepting trap.
- The use of the intercepting trap is to stop odors, bacteria, viruses or other gases from entering your home through the sewerage.

Are you Dry?

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Motivation



02

Motivation

01

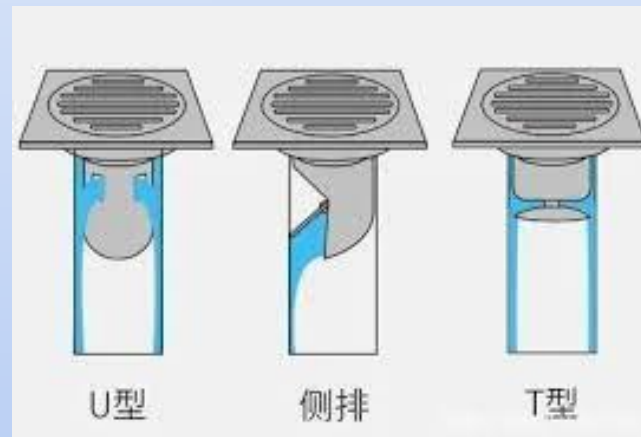
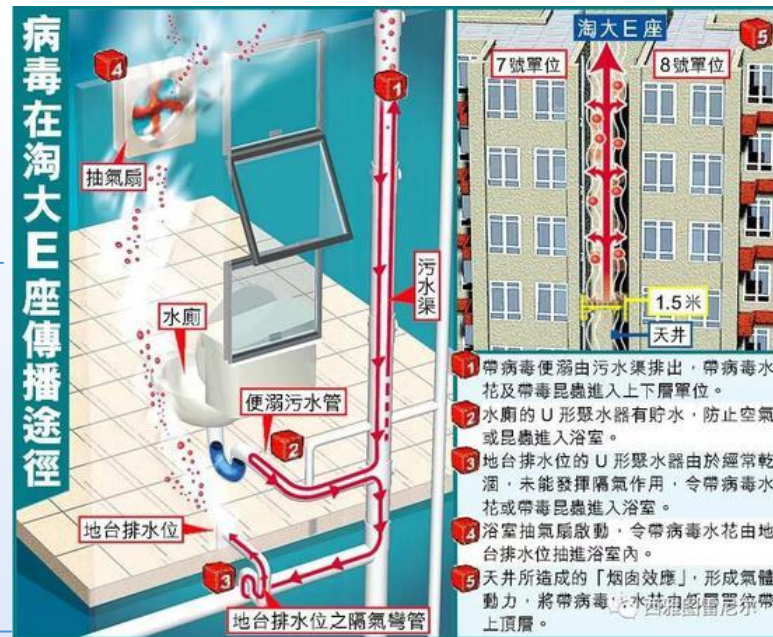
In 2003, there was an outbreak of SARS in Amoy Gardens in Hong Kong. After investigation, experts found that the water in most of the U-pipes in the building had dried up, causing the air barrier to fail and allowing the virus to spread rapidly through the air barrier pipes to all residents' homes.

02

In the questionnaire survey we conducted, nearly 75% of the respondents said that they had been troubled by the odor in their homes, and the main reason of it was that they did not regularly pour water into the intercepting trap.

03

It is very important to fill the trap regularly, so we decided to take precautions by inventing a device to alert users when the water in the trap is about to dry up.



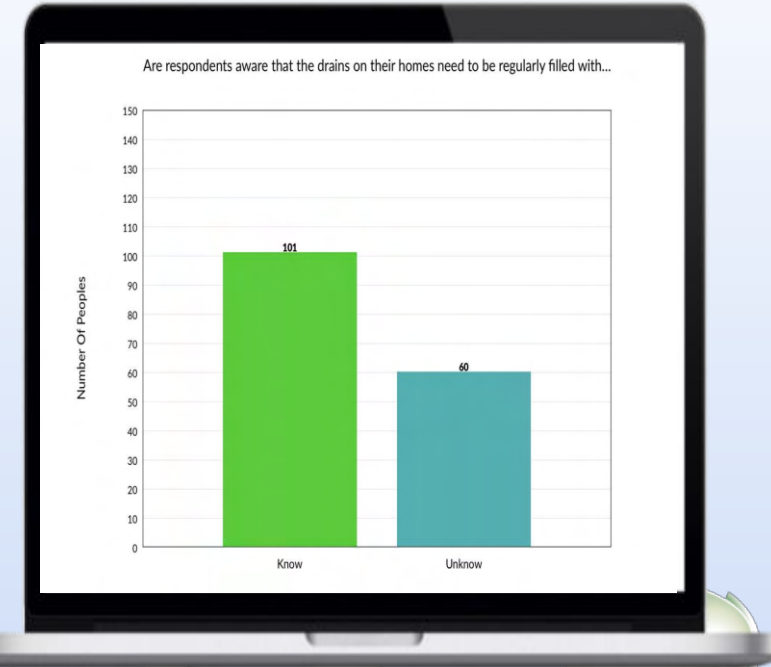
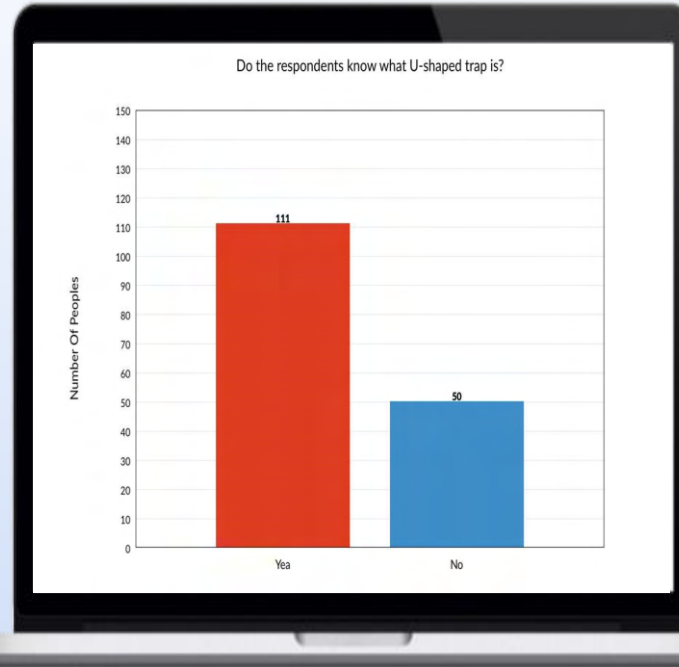
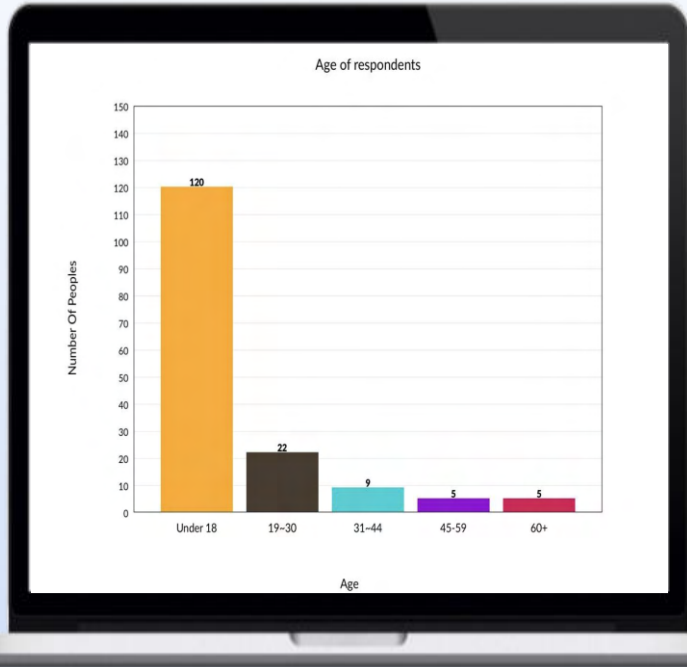
Are you Dry?

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**Questionnaire
& Results**



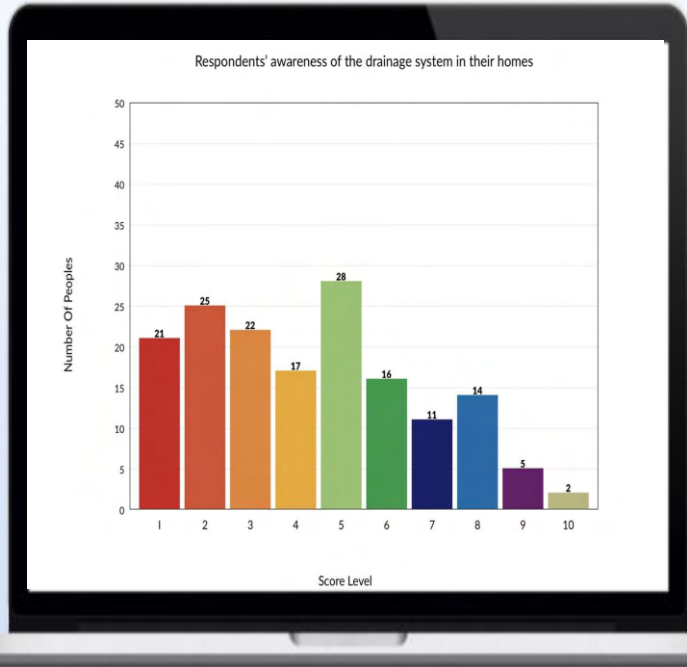
Questionnaire & Results



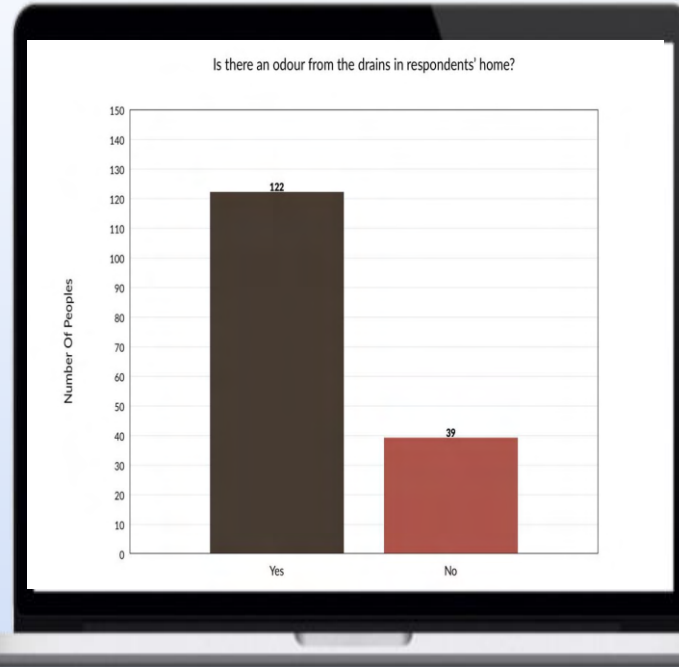
A total of 161 people participated in the survey, with the majority of the respondents being young people aged 18 or below.

Most of the respondents knew about the U-pipe and the drainage outlet in their homes should be filled with water regularly.

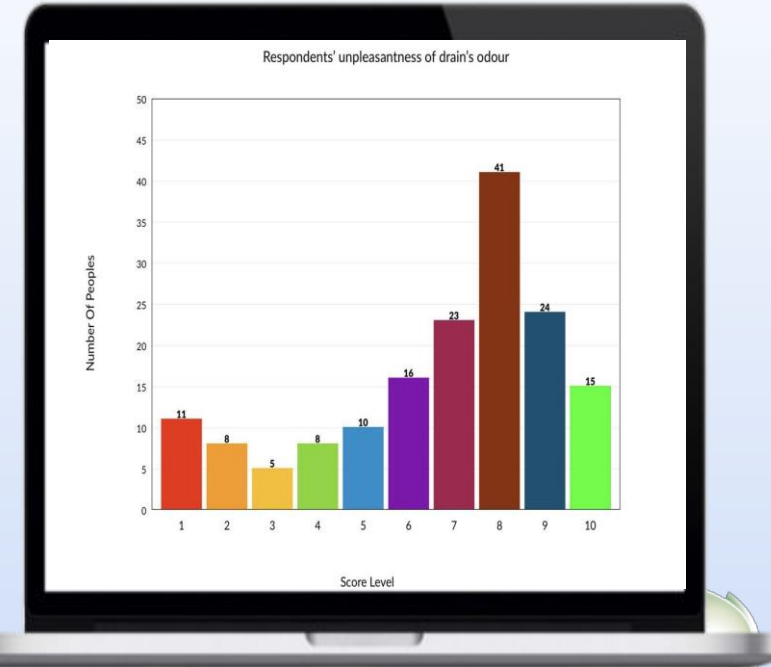
Questionnaire & Results



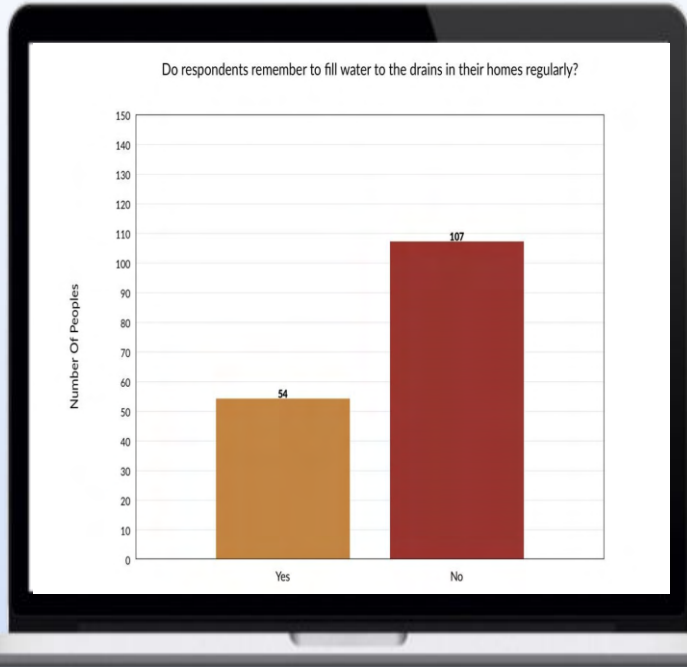
This figure indicates most respondents' knowledge of the drainage system in their home is relatively low.



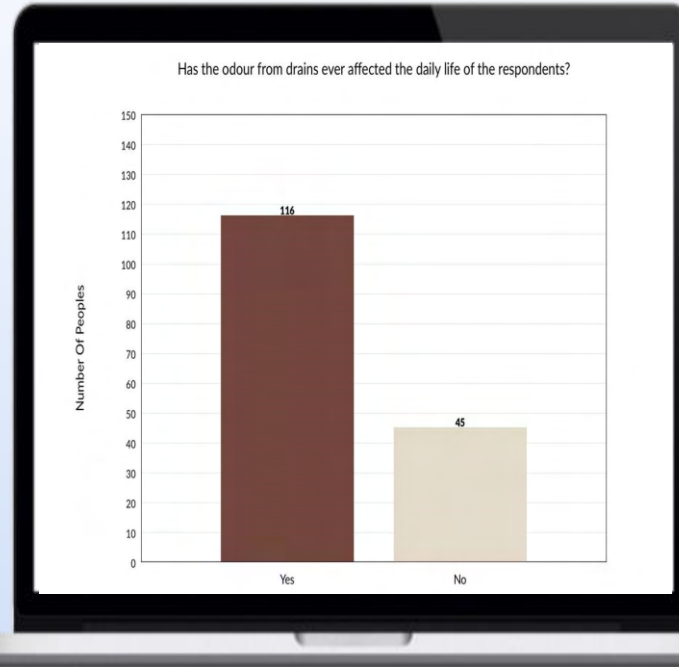
These figure shows that the majority of respondents (122 people) had or currently had odors in their drains and the number of people graded with 6 points or above was 119.



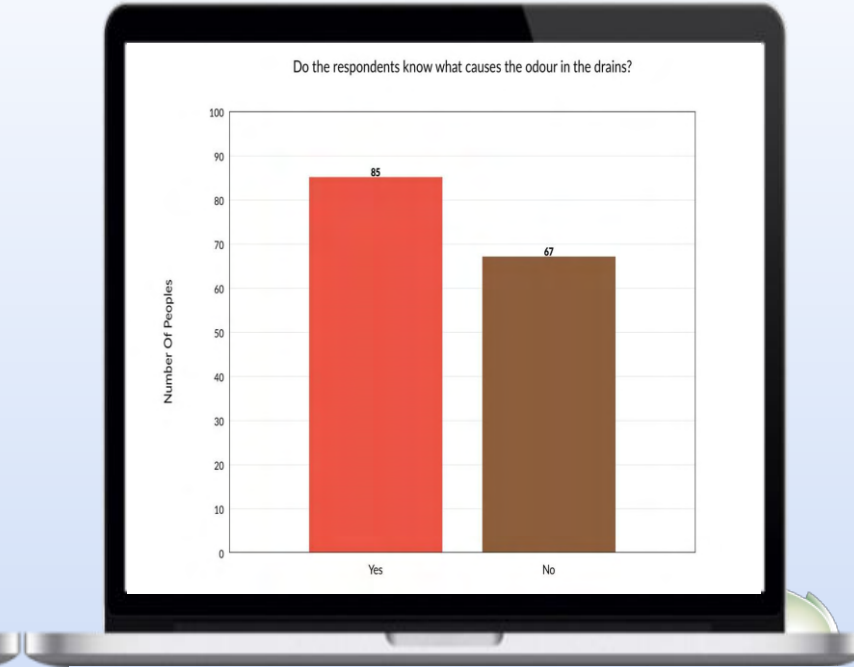
Questionnaire & Results



This figure also shows that 66% of the respondents do not regularly fill their drains with water.



Most of the interviewees thought that the odor from the floor drain affected their daily lives, accounting for 116 of them.



A large number of respondents knew exactly what caused the odor in the drains, accounting for 85 of them.

Are you Dry?

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Purposes



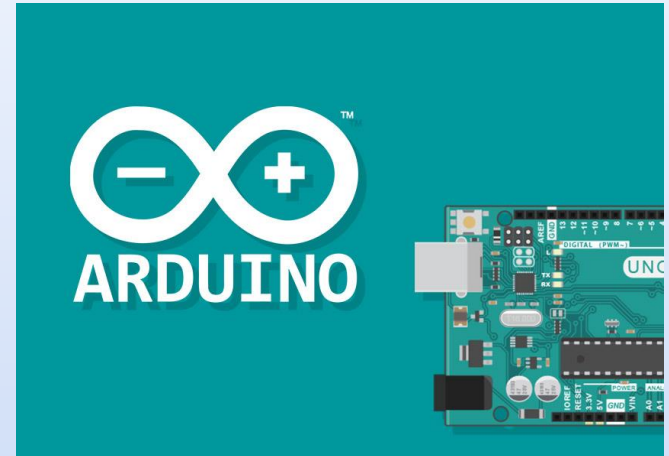
Purposes

01

Since there is no device on the market that can effectively remind people to fill the intercepting traps regularly. So although people are aware of the need to fill the traps with water, they have no way of knowing when the traps will dry up.

02

We decided to make a product using arduino mechanical module. We hope that this device will help people understand more about U-bends and prevent tragedies from happening early.



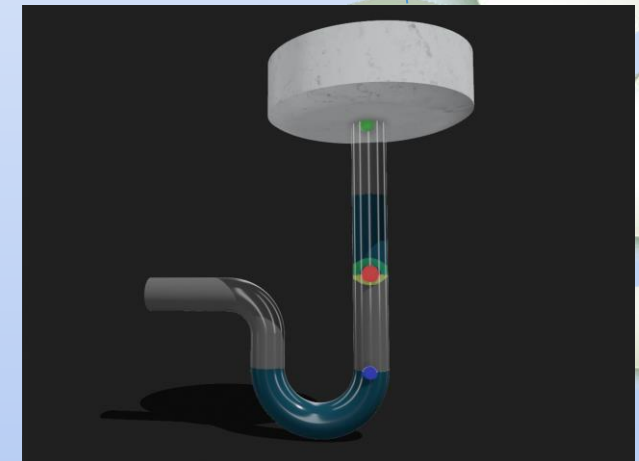
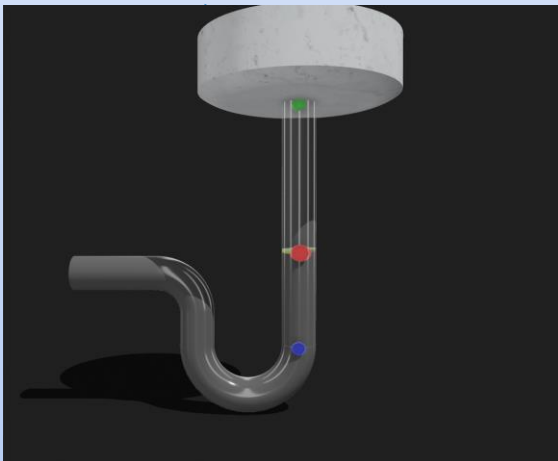
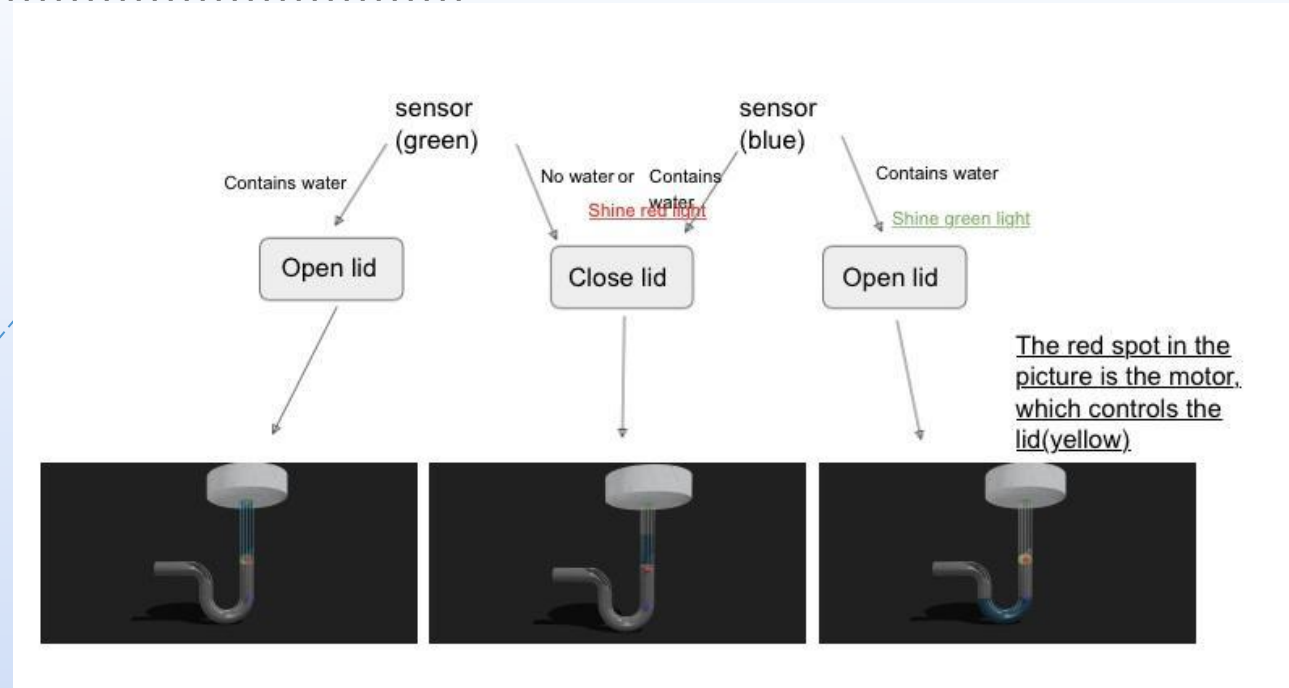
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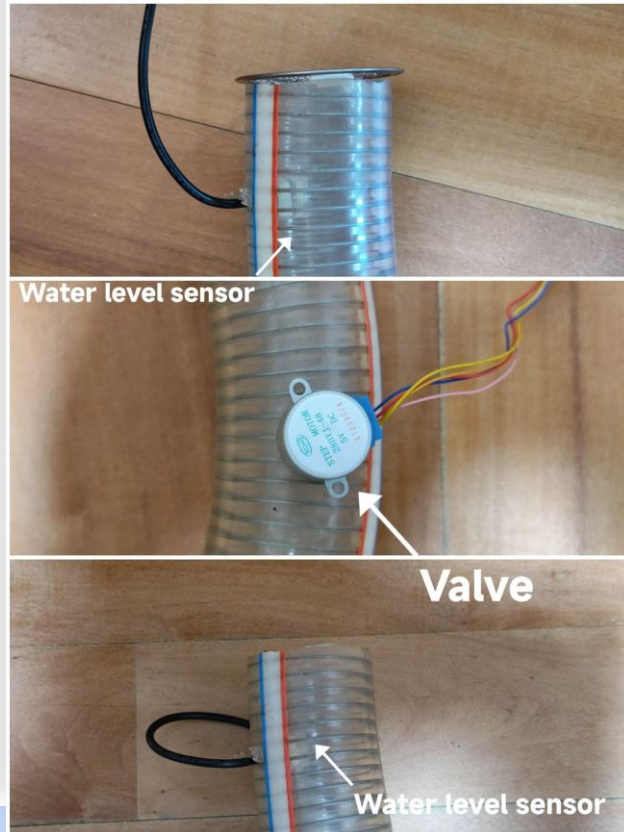
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**Product
Images**



Product Images





This device can be used to detect the amount of water in the water storage bend. When the water is not enough, the device will remind the residents to fill the trap with water.





Thanks You

Thank
you 