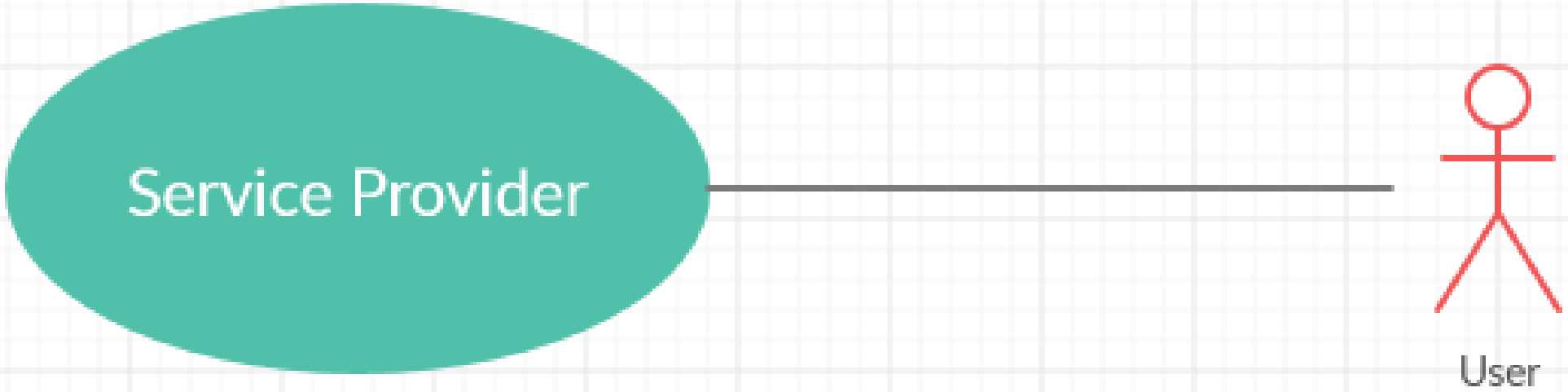
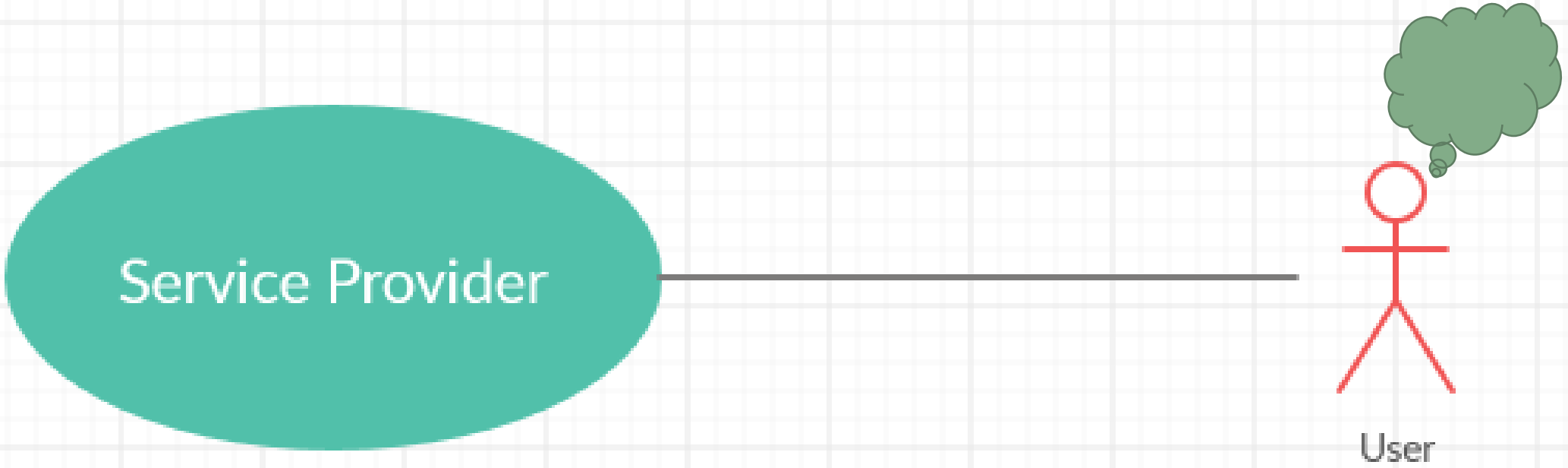
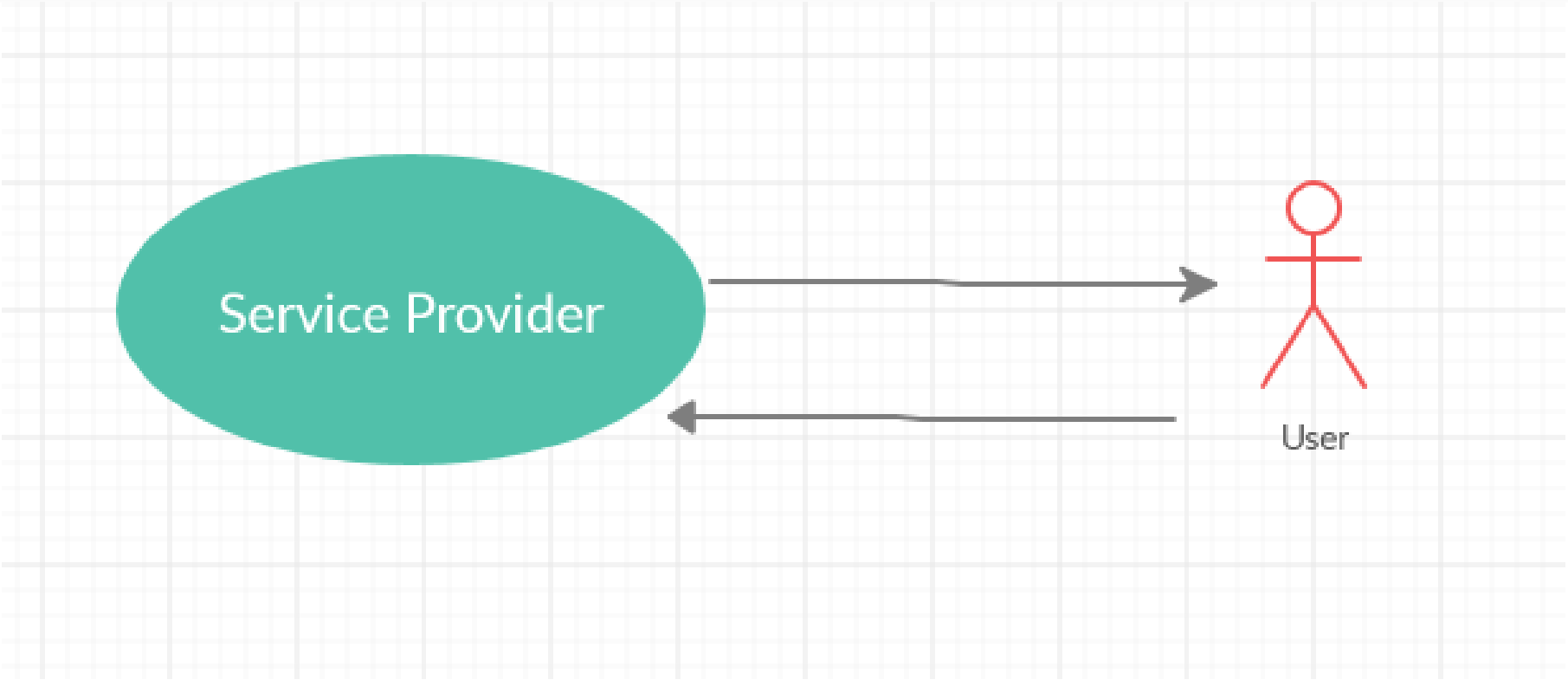
# Smart Water Usage and Billing using Internet of Things


Service Provider
User

# Overexploitation



# Feedback system

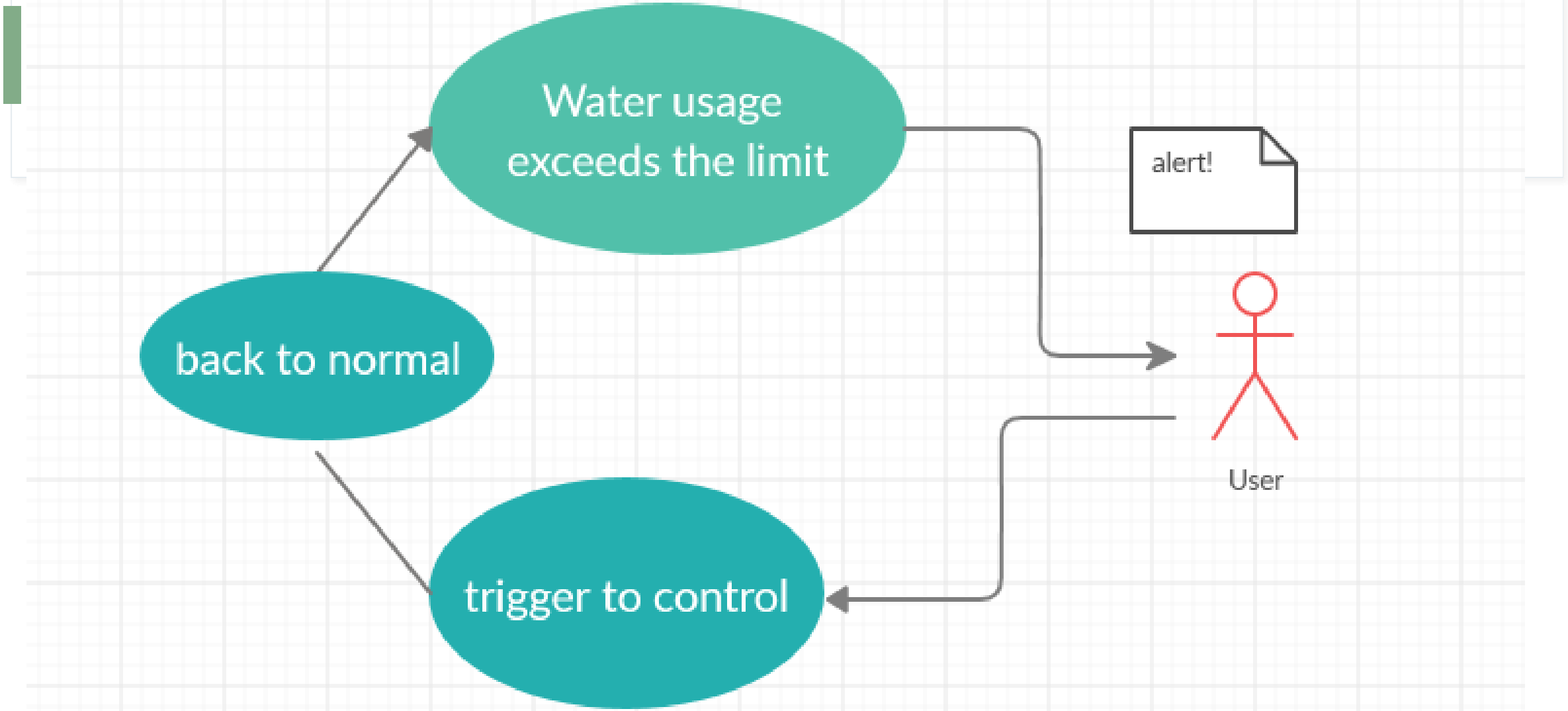


# Problem Statement

One of the crucial challenges of water management as well as conservation in a city is to determine the amount of water that any particular city is going to utilize during the next day, figuring out the right amount of water that must be present in the reservoirs and overhead tanks during any particular point of time.

# Solution

- The purpose of this project is to have a smarter way of water management in order to conserve water resources and energy.
- Proper maintenance of water outlets, their proper scheduling of repairing is must in order to reduce the water losses to leakages and breakages.
- Optimize the energy consumption requirement for pumping water.


Water usage
exceeds the limit
alert!
back to normal
User
trigger to control

# Sensors

- The Ultrasonic sensor checks the available amount of water in the storage tank.
- Flow rate sensor Is linked with water outlet to calculate flow rate when water outlet is running.
- If sensor detects a high value in flow rate and pressure change then sends an alarm of possible leakages in the water outlet.

# Explanation

- If a consumer starts a water outlet, its being checked first if water is present in the Rainwater Tank, water outlet gets water from the rainwater tank.
- If water is below level sensor, then it switches to main storage tank for consumption.
- Throughout the running of water outlet its being sensed with the flow rate and possible leakage is found if flow rate.

# Consumer View

- The user gets know the Real time level of water in the tanks and usage using IOT platform like Ubidots.
- Depending on the level of water in tank, i.e if the level of water is much lower the motor is switched on.
- If there is a problem with the availability of water a trigger is sent to the water authorities.
- And at the end of each Month the user gets a bill of the amount of water used in that particular period.
- If there is a leakage, a message is sent to the user and the water connection to that pipe is shut.

# Business point of view

- Income based on the selling of the products we provide
- Payment gateway service charge

# Future scopes

- Presence in house can be detected using iBeacon
- Personalized water treatment suggestions for each clients using ML
- Analysis and prediction of future bills
- One app for controlling the usage of water as well as electricity