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IOT

1) Smart monitoring system.

Smart monitoring system data for planning and optimizing the low voltage grid. Smart meters are new electricity usage measurement devices, which will be installed in households over the next years. A smart meter can measure electricity usage every 15 minutes and will send this data is only usefull for end users but also for network operators to plan and optimize the low voltage electricity distribution grid. George works for an electricity supplier and is responsible for planning the modernization of the low voltage grid. George is able to localize the cause of communication breakdowns and replace the corresponding network controllers on a daily basis, the application that perform simulations and load flow calculations in an automated manner. By using the data of smart meters errors can be diagnosed more accurately.

Step 1: purpose & requirement specification

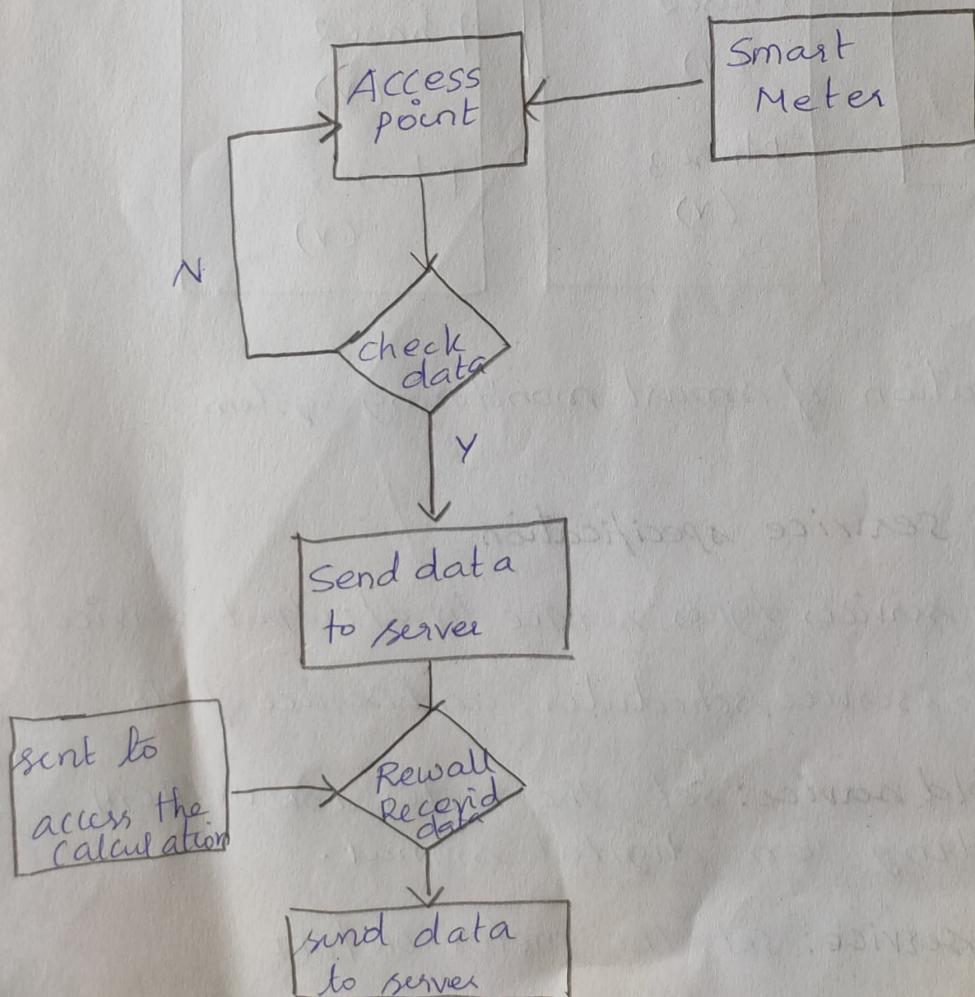
Purpose: Smart monitoring system, The smart meter is used in lots of electrical appliances in the home, office etc for finding the level of usage, exceed points etc.

Behavior: system should monitor the electricity amount in the home appliances

System Management requirements: system should remotely provide metering & control function.

Step 2: process specification

Define the process with help of use cases
circle denotes a state or an attribute.



Step 3: Domain Model Specification

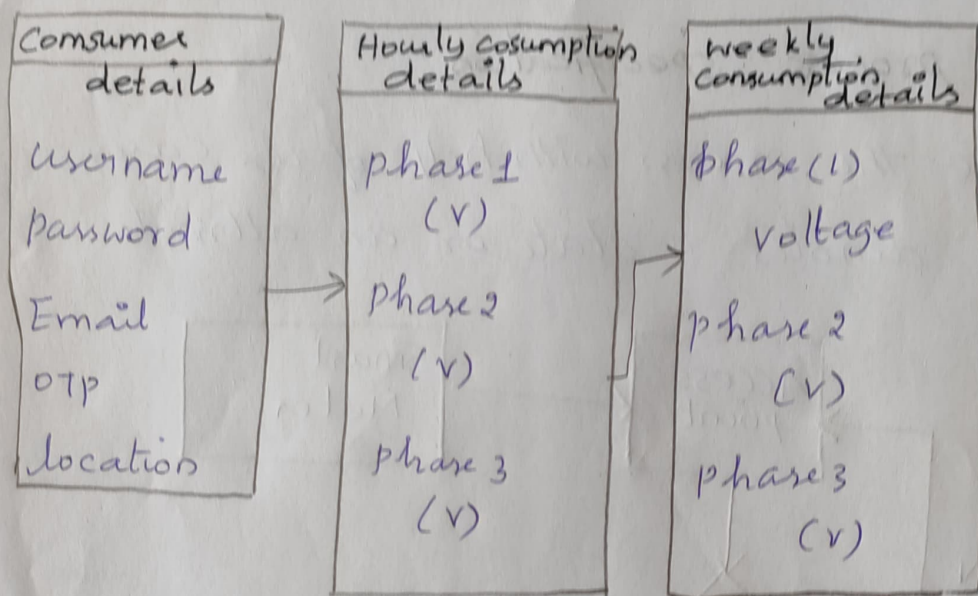
Describes the main concepts, entities, and objects in the domain of IoT system to be designed

Physical entity: Meter, system, device, wires

Virtual entity: OS

Device: Meter, sensor.

Step 4: Information Model Specification.



Information of smart monitoring system.

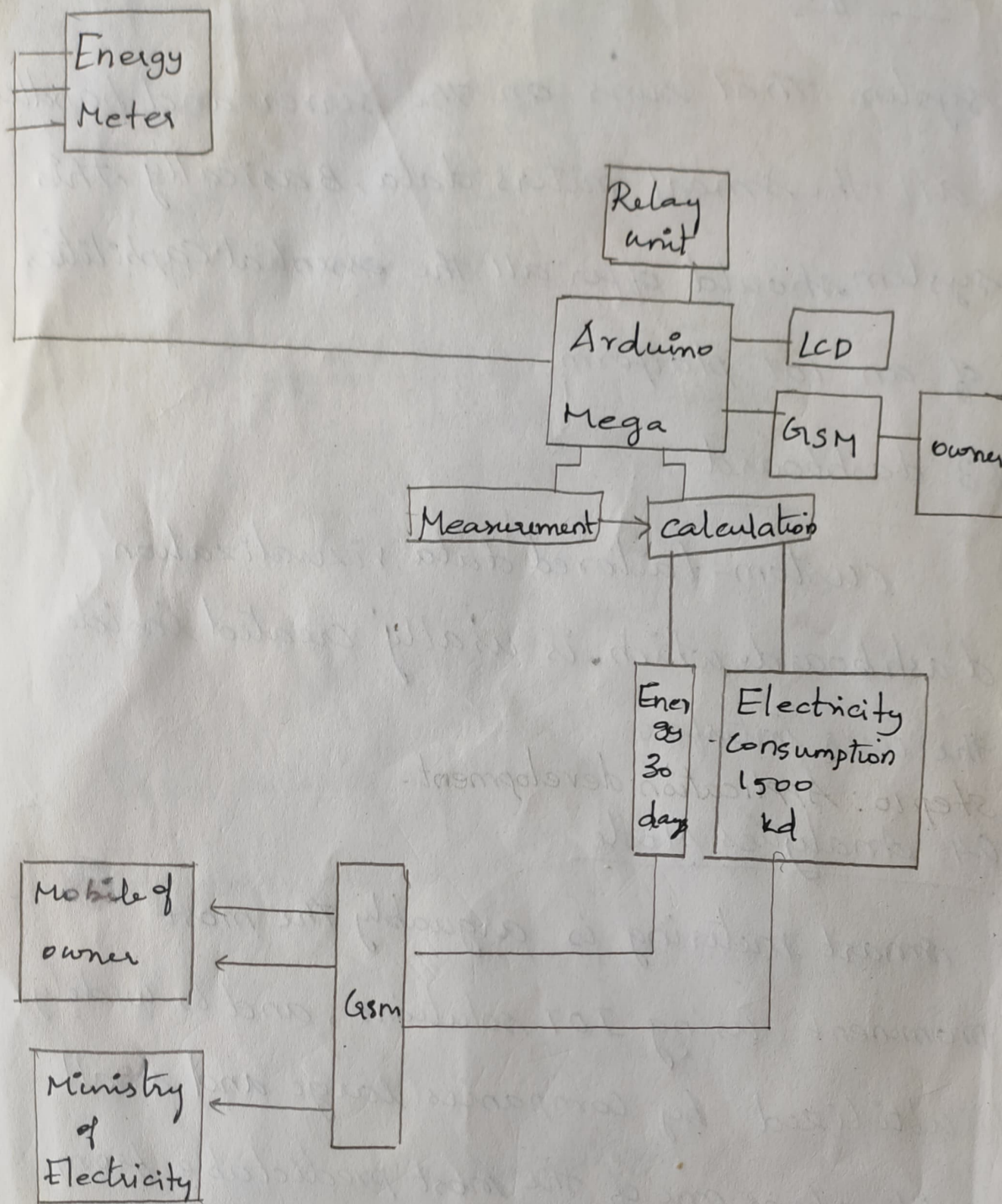
Step 5: Service Specification

Defines services types, service input/output, service endpoints, service schedules, and service effects

Threshold service: Set the Meter LOW or HIGH depending on digital signal.

State service: Set the meter ON/OFF

Step 6: IoT level specification

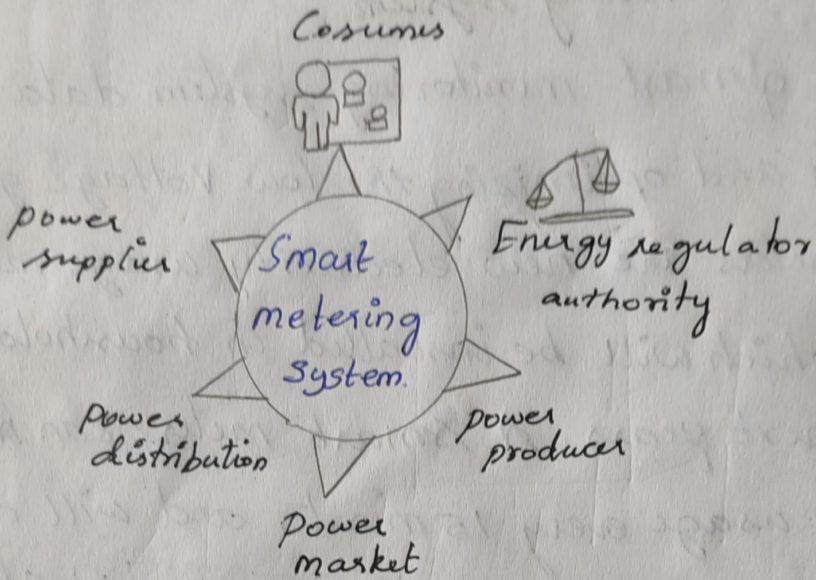


01 Smart meters

Smart meters, which collection consumption data and periodically sent it to be a central server for processing. The server can be located at a company's own data center.

Step 7: functional view specification.

Smart metering is the monitoring of resource consumption, such as energy, water, gas, etc, through modern monitoring devices connected to the internet via IoT Technology.



These metering devices are typically referred to as smart meters. While there's a huge variety of them available on the market daily, the biggest challenge is integrating various devices into a meaningful smart metering solution for a specific company's use case. Smart metering is typically used for accurate energy accounting and billing, but it can be also used for many other real-life cases.

Step 9: device & component integration.

02 system

system that runs on the server and handles all the smart meters data. Basically, this system should offer all the essential capabilities of an IoT platform.

03 dashboard

custom-tailored data visualization dashboard which is usually created inside the user interface.

Step 10: Application development.

04 Analytics Mode

smart metering is arguably the most prominent using IOT solutions, and is widely utilized by companies large and small. it also one of the most predictable from a ROI perspective, so it only natural for business first experience with IoT technologies to begin smart monitoring,

