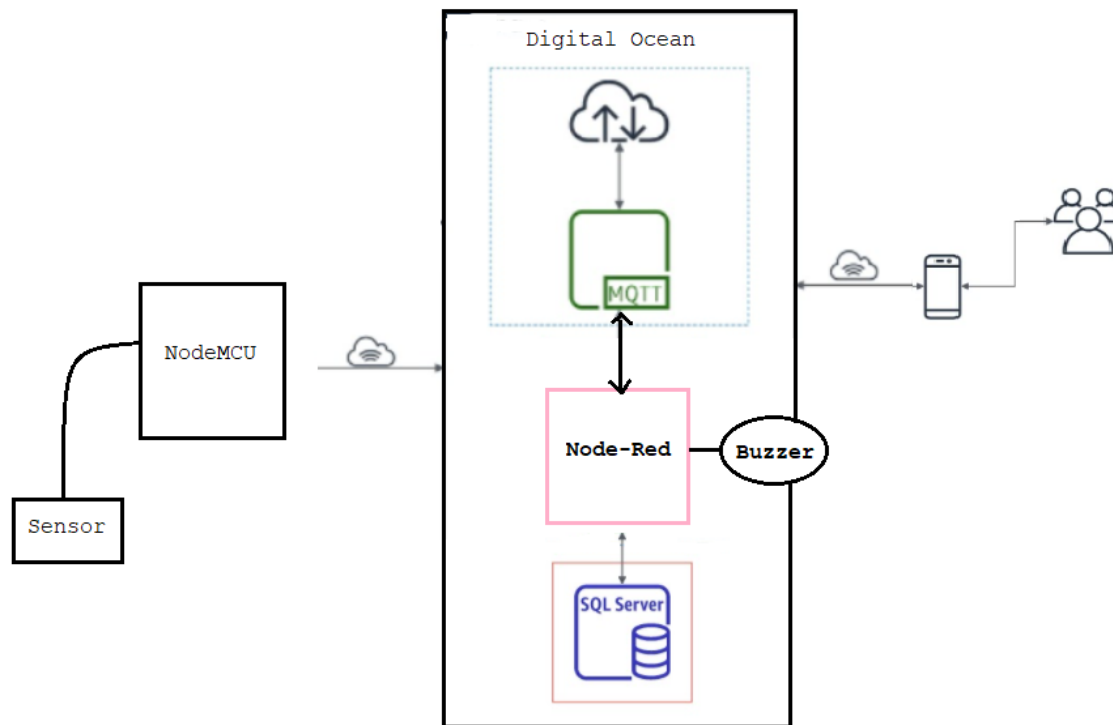




**Final Deliverable - Architectural Design**  
**Course Group 4**  
**Date: 12/02/2021**  
**Dr. Ramiro Liscano**

## Architectural Design Diagram



## Description

To access the application as expected, users must first register within the application, where respective user credentials and other related data are stored and received during the login process. When registered and logged in successfully, the end-user has the ability to access their IoT temperature monitoring system on their mobile device. This application is connected to Digital Ocean. Digital Ocean was used to help manage and monitor our teams droplet (iotgrp4) through the incorporation of a control panel and an open source API. Within Digital Ocean, the Mosquito Broker service is used to allow to use MQTT. MQTT had been used as it helped the team perform data transmission between hardware devices, such as the sensor, and the server. Node-Red had then been used to obtain respective data from the use of MySQL through queries. Focusing on the workflow, once on the home page the end-user is first able to view the connection status of the sensor. If stated disconnected, the end-user can connect the application to the sensor to then be received with the appropriate temperature readings. The end-user is then able to set threshold values on the mobile application which is then sent to the database. When this threshold is reached, the buzzer will be activated and a notification is sent to the end-user displaying a warning message. The temperature sensor is connected to the NodeMCU where data collection from the sensor takes place. The NodeMCU had also been connected directly to the Digital Ocean where we then utilized the use of Node-Red and the MQTT service.