

COLLEGE CODE: 8107

COURSE: Cloud Application Development

PHASE I: Project Submission Part1

PROJECT TITLE: Serverless IoT Data Processing

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**Agenda**

* Introduction
* Problem statement
* Problem Definition
* Explanation
* Prerequisites
* Conclusion

**Introduction**

* Welcome to the future of home living – a smart, efficient, and secure living space powered by IBM Cloud Functions for IoT data processing. In this transformative journey, we will show you how to seamlessly integrate smart devices like thermostats, motion sensors, and cameras into your everyday life.
* By harnessing real-time data processing, automation, and the power of IBM Cloud Object Storage, you'll experience unparalleled convenience and peace of mind in your serverless smart home. Join us as we embark on a journey to create a modern, connected, and intelligent living environment tailored to your needs.

**Problem statement**

* + - Transform your home into a smart living space using IBM Cloud Functions for IoT data processing. Collect data from smart devices like thermostats, motion sensors, and cameras, and process it in real-time. Automate routines for energy efficiency and home security. Store and analyse data in IBM Cloud Object Storage to gain valuable insights into your smart home. Experience the convenience and peace of mind of a serverless smart home!

**PROBLEM DEFINITION**

* The project aims to transform a home into a smart living space using IBM Cloud Functions for IoT data processing. The goal is to collect data from various smart devices, process it in real-time, and automate routines for energy efficiency and home security. This involves designing the smart home setup, implementing data collection and processing, and leveraging IBM Cloud for storage and analysis.

**STEPS**

* Using Thermostat sensor we are going to sense the temperature of the smart home to control the speed of the fan.
* Thermostat sensor detect the current temperature and relay this information to the thermostat’s control logic , allowing it to make decisions about when to activate and deactivate the fan.
* To done this process we are going to use on/off algorithm.
* This algorithm is used when the temperature in the room falls below the set point or rise above it ,the thermostat turns the heating or cooling system on at full power.
* When the temperature reaches the desired set point,the system is turned off completely.
* Using Arduino software we are going to integrate the algorithm with thermostat sensor using the language of embedded C
* By using IoT protocols we collect the data from the devices.
* Using the sensor and the protocols we are going to process the real time data using IBM cloud function
* By changing the settings of thermostat sensor for energy efficiency usage
* By using IBM Watson studio we can analyse the data that are stored in IBM cloud

**Prerequisites**

* Arduino
* Thermostat Sensors
* IBM Cloud
* IBM Watson studio

**CONCLUSION**

In conclusion, by integrating a thermostat with IBM Cloud Functions for IoT data processing, you can create a smart home that optimizes energy efficiency and enhances home security. This collaboration enables real-time data collection, analysis, and automation, offering the convenience of a serverless smart home while providing valuable insights for a more comfortable and secure living space.