# CPS Project

## Project Name: **Self-Regulating System With Temperature Control**

## Elevator Pitch:

This project is a fully functional IoT application in which we will create a self-regulating system with temperature control that can be operated and monitored remotely. Our application will be able to choose the desired temperature, and our fan will automatically turn on and off to cool the area around our temperature sensor to that temperature. We'll also build a dashboard that allows you to define the desired temperature range as well as a manual override that lets you operate the fan from a console. The dashboard will also have real-time temperature displays for our sensor. It controls itself after the temperature is set.

## Skill Level:

Skill level required to do this project - Intermediate

## Tags:

#IoT, #Arduino, #MKR1000, #DHT, #Sensor, #Cloud

## Contributors:

Arshdeep Singh – Coding and debugging

Leela Srivathsav Narravula – Circuit building and debugging

Parthiban Sundararaj – Project Idea and Cloud integration

## BOM (Bill of Materials)

| Item | Description | Quantity | Price (CAD) | Link to purchase | Comment |
|---|---|---|---|---|---|
| 1 | Arduino MKR1000 | 1 | NA | | University provided |
| 2 | DHT11 Sensor | 1 | NA | | University provided |
| 3 | USB Cable | 1 | NA | | Self-owned |
| 4 | Connecting wires | Multiple | NA | | University provided |
| 5 | CPU Fan | 1 | $12.93 | Link | Purchased |
| 6 | NPN Transistor | 1 | NA | | University provided |
| 7 | 1 kΩ resistor | 1 | NA | | University provided |
| 8 | Breadboard | 1 | NA | | University provided |
| 9 | AA batteries | 8 | TDB | TDB | Yet to purchase |
| 10 | Battery holders | 2 x 4 | TDB | TDB | Ye tot purchase |
| Total | | | $12.93* | | |