**Smart Parking Internet of Things Project**

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*Collaboration between Waterford Institute of Technology & Central Michigan University*

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1. **Introduction:**

**Motivation:** Oftentimes we may frown upon parking because we cannot efficiently find available parking space. Under normal circumstances, searching for parking lots manually through scanning with our eyes is time-consuming and creates unwanted frustration.

**What?** The project is based upon the idea of presenting a straightforward distribution diagram to users who are about to park. **Users can efficiently find available parking space as per the apparent demonstration of the current capacity and vacancy of all lots.**

**How?**

1. **(Vehicle recognition via cameras):** Multiple cameras will be installed in the parking lot to monitor all parking spaces and then accumulate their conditions.

2. (**Viable sensors**): Each parking space is equipped with a viable sensor, which will basically feed information to the cloud whether the space is empty or not.

Ultimately, a device with data receiver inside will be installed in the entrance to properly convert the information and present it to users in a straightforward way.

1. **Goal:**

The goal of this project is to have an automated system to regulate parking lots and provide uses with below information:

**Priority**: The current capacity and vacancy of the whole parking lot. In this way, a display of all available space will be provided through which users can easily track down the space without wasting any time.

**Extra information**:

1. Scan the vehicle licence number to determine whether the vehicle has been registered for the space or not.

2. Provide a demonstration of unavailability of some certain spaces due to other causes (reserved space, under construction, under repair, etc.)

3. Provide another kind of warning or notification when any car is about to reverse.

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