CSE360

Project Proposal

**Group No.: 3**

**Group Members**

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**Brac University**

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**Project Title:** Arduino based High Security Car Parking System

**Project Description:**

It is not new that vehicles get stolen from parking lots even though there are security guards. That is where our project comes from. We are intended to build a prototype where ensuring security will be our first priority.

Firstly, when a car arrives at the parking lot, the driver of the car will have to give his fingerprint, which  will be stored in the database. A **16x2 LCD Display** will be at the gate, where it will show how many slots are left to park. In this way, guards do not need to count if the parking lot is empty or not. Also,  **the Temperature and Humidity Sensor** will help to show the temperature of the parking lot in the **LCD display**.  This will help the automated system to turn on the heater if the temperature is too low. While entering all the drivers will have to enroll their fingerprint to the database. The fingerprint will be stored with an ID. The ID will be representing the car and the driver. This will help the security officer to identify if the right person with the right car is leaving the parking lot.

If there are empty slots in the parking lot then the gate will be opened using **Servo Motor** and here, we will be using **IR Proximity Sensor** to sense the presence of the vehicle.

Main part of security comes when a car leaves the parking lot. At that point, the driver will have to pass the checkpoint where the driver will have to give his fingerprint through the **Fingerprint sensor**. If his fingerprint is on the database the **Green Led light** attached to the gate will be turned on and he can leave the parking lot. Otherwise, the right person is not taking out a registered vehicle and will be caught red handed.

We will do the project with Arduino Uno as our interfacing IC.

**Components Required:**

* Arduino UNO
* IR Proximity Sensor
* Fingerprint Sensor
* Temperature and Humidity Sensor
* Servo Motor
* 16x2 LCD i2c Display
* LED light
* Jumpers