

Submission Date	1/17/2019
Project Name	Roomi
Project repository	https://github.com/roomi-develop/roomi
Group Members	Marko Javorac, Denald Demirxhiu, Jacob Ladan
SensorEffectors	2.4" Serial: UART/I2C/SPI 400x240 TFT with Touchscreen Module DS400240CTFT-61T, Mini Push Pull Solenoid 5V, PN532 NFC/RFID reader
The database will store	Access Level, Room Properties (name/id, schedule), User Accounts
The mobile device functionality will include	Room accessibility and properties management
We will be collaborating with the following company/department	Humber College Department of Public Safety. Humber College School of Applied Technology
50 word problem statement	Today, many rooms being electronically secured lack the flexibility of information display and mobile user management. The problem herein lies with the decrease in usability, and the sole focus of Roomi is to remedy this. Through the tying together of an LCD screen and existing RFID technology, users will be able to view additional important information about secured rooms, as well as allow administration to update this information easily and without the need for support from IT.
100 words of background	The 2.4" Digole LCD Display will be used to display relevant information unique to every room. The PN532 NFC/RFID reader will allow individuals access to configured rooms, based on a predefined access level setup through the android application. The mini push-pull solenoid will be used to demonstrate how the locking mechanism will function. The mobile application will allow the administration to modify user and room access and display settings in a user-friendly environment. The hardware and application will work in unison with a cloud service hosted on Google's Firebase platform to store room's relevant information.
Current product APA citation	Neets Touch Panel (Last Updated: Aug . 14th, 2018) Retrieved From: https://www.neets.dk/product/neets-touch-panel-neets-touch-panel-7b Photo ID Systems. (n.d.). Retrieved September 11, 2018, from https://www.idcardgroup.com/systems
Existing research IEEE paper APA citation	B. A. Alabdulsalam, F. A. Alsaman, Z. H. Alshakhs, H. F. Ahmad and A. Mughal, "Dynamic Video Wall Tile Creation Using Raspberry Pi3," 2017 IEEE 13th International Symposium on Autonomous Decentralized System (ISADS), Bangkok, 2017, pp. 268-271. URL: http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7940251&isnumber=7931239 K. Michael, "Novel NFC Applications to Enrich Our Connections: The NFC Forum Innovation Awards.," in IEEE Consumer Electronics Magazine, vol. 6, no. 3, pp. 118-121, July 2017.
Brief description of planned purchases	2.4" Digole LCD with Touchscreen Capabilities, Raspberry Pi 3B+, PN532 NFC/RFID Reader, Mini Push-Pull Solenoid 5V.
Solution description	Our solution will implement an LCD touch screen at room entrances to display schedules, and information about current occupants. It will also utilize NFC/RFID readers to allow access to secured rooms through the use of keycards implementing NFC/RFID chips.