Problem Statement (or Background):

With exponential increase in the number of vehicles on road, faster access to parking lot and its billing has become very essential. Smart / Automated / Unmanned parking billing system not only helps with this but also reduces the need of a person to manually collect money and guard the parking lot. Each vehicle needs to be properly tracked, access to budget fees (minimal fees) for daily customers and top most is customer convenience for each billing system.

Modeling and simulation goals:

The goal of the project is to graph / monitor / collect and transmit data on number of vehicles entering and exiting parking lot to provide rush hour analysis. Analysis will be done on collecting details on morning hours, evening hours, week-day, and weekend activity. The input will be the vehicle timestamp and vehicle itself; and output provided to the customer by use of sensors; will be details with number of parked vehicles on each floor, total percentage of parking lot occupied and upon exiting provide easy transaction to the customer calculated from the timestamp. One additional ease for the customer is provided by the parking application extending to reservation for parking, is automatic payment for parking and identification of car and vehicle license plate recognitions using camera. This analysis can optimize parking space usage along with this it will help traffic analysis and future implementation of self-parking.

References (Optional)

2. Yadnesh Joshi; Pratik Gharate; Chetan Ahire; Nikhil Alai; Samadhan Sonavane. Smart parking management system using RFID and OCR. 2015 International Conference on Energy Systems and Applications, Pages: 729 - 734, 2015