ABSTRACT

This system works when a vehicle arrives at the entrance of the parking area and presses a push button located next to the toll gate. The system checks for vacant slots and depending on if there are vacant slots or not allows the vehicle to enter or not. The vehicle then moves on to the platform and is parked on it. The driver moves out of the vehicle, heads back to the entrance toll gate and presses a different push button and sensors placed on either side of the platform measure width of the vehicle and identify a width category. Afterwards, the trolley corresponding to the identified width category arrives at the entrance platform and carries the vehicle to the selected parking spot. Once the trolley arrives at the parking slot, the vehicle is parked in its spot and the trolley returns to its trolley station. The prototype for this system consists of 14 ultrasonic sensors, 2 servo motors, 1 stepper motor, a motor drive, a microcontroller and a lead screw system. The real time system consists of 36 ultrasonic sensors, 17 stepper motors, a modified microcontroller and a railing system.