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IoT Based Smart Car Parking System Using Node Red

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Abstract : In this paper, we design a smart car parking system using the Node-Red interface, which enables the user to find the nearest parking area from his current location and gives the availability of parking slots in that respective parking area. The closest parking area is determined by sending an HTTP request to an API, and the shortest distance is computed using some mathematical formulations based on the coordinates retrieved. There is also the use of IR sensors to signal the availability or lack of available parking lots within any parking area. The aim is to reduce the time and effort needed to find empty parking lots and also avoid unnecessary traveling through filled parking lots in a parking area. Thus, it reduces fuel consumption, which in turn reduces carbon footprints in the atmosphere and, overall, makes the city much smarter.

Keywords : node-red, smart parking system, API, http request, IR sensors, Internet of Things, smart city, parking lots.
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