VISVESVARAYA TECHNOLOGICAL UNIVERSITY,

BELAGAVI – 590 018

An ASSIGNMENT REPORT ON

Smart parking system using Arduino and IR sensor

Submitted as subject assignment work,

for the subject

Microcontroller And Embedded System (21CS43)

By

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

MOODBIDRI-574225, KARNATAKA

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CERTIFICATE

This is to certify that **Mallikarjun** bearing USN **4AL21CS065** has successfully demonstrated the working of **Smart parking system using Arduino and IR sensor** as the assignment work for the subject **"Microcontroller and Embedded System (21CS43)"** and submitted a report during the academic year 2022–23 even Semester. It is certified that all corrections/suggestions indicated in the presentation session have been incorporated into the report & scored 09 Marks out of 10 and deposited in the departmental library.

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This is to certify that **Mohammad Khalander** bearing USN **4AL21CS074** has successfully demonstrated the working of **Smart parking system using Arduino and IR sensor** as the assignment work for the subject **"Microcontroller and Embedded System (21CS43)"** and submitted a report during the academic year 2022–23 even Semester. It is certified that all corrections/suggestions indicated in the presentation session have been incorporated into the report & scored 09 Marks out of 10 and deposited in the departmental library.

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Smart Parking System using Arduino and IR Sensor

1.Introduction:

In these modern days finding car parking is a big issue in congested cities. There are too many vehicles on the road but not enough parking spaces. One of the biggest problems is when we enter a parking area then we realize that there are no empty parking slots to park our cars. Important time. Another biggest problem is after entering in a big parking area we confused to find the empty parking slot to park our car. Sometimes maybe we all have been facing these two problems that wasted our important time. That's why we need efficient parking management systems in all parking areas that will provide confusion-free and easy parking.

In this report, we will design a "Smart Parking System Project" to overcome this problem. This project helps the car's driver to park their car with minimum wastage of time with accurate information of the availability of the space to park.

2.Smart Parking System Project Concept:

This smart parking system project consists of Arduino, six IR sensors, one servo motor, and one LCD display. Where the Arduino is the main microcontroller that controls the whole system. Two IR sensors are used at the entry and exit gates to detect vehicle entry and exit in the parking area. And other four IR sensors are used to detect the parking slot availability. The servo motor is placed at the entry and exit gate that is used to open and close the gates. Also, an LCD display is placed at the entrance, which is used to show the availability of parking slots in the parking area.

When a vehicle arrives at the gate of the parking area, the display continuously shows the number of empty slots. If there have any empty slots then the system opens the entry gate by the servo motor. After entering the car into the parking area, when it will occupy a slot, then the display shows this slot is full.

If there is no empty parking slot then the system displays all slots are full and does not open the gate.