**PROJECT REPORT “***SMART PARKING CONTROL***”**

**Members:**

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**Materials:**

1. Wood sheets
2. A Arduino UNO
3. Two Servo motors SG 90
4. Two LED Photoelectric transmitter modules
5. Two LED Photoelectric receiver modules
6. A LCD Display 16x2 (with I2C module)
7. Two PIR sensors

**Purpose**In the project, we will demonstrate an automated parking that will show a system that will indicate the number of cars entered in the parking lot and also the spaces available within the parking lot.

Vehicle counting is an automatic count with methods to obtain traffic volume data through the use of surface detectors such as: electrical, photoelectric, radar, magnetic, ultrasonic, infrared contact detectors.

This detects the passing vehicle and transmits the information to a registrar.

**Description:**

RightSight photoelectric sensors offer high-performance general purpose sensing in a compact, flexible package. They are designed for applications where simplified installation and maintenance are required. Suitable for general purpose environments, these sensors can also be used in areas where a rugged photoelectric sensor is required. Highly visible indicators allow quick verification of operation from a wide viewing area.

Description RightSight retroreflective sensors can be used to detect opaque objects such as cartons and totes. They are intended primarily for use in applications where an opaque target will completely block the effective beam between sensor and reflector.

RightSight polarized retroreflective sensors can be used to detect most objects, including shiny objects such as shrink wrapped products, bright metals, foils, etc. They are intended primarily for use in applications where an opaque target will completely block the effective beam between sensor and reflector.

Sharp cutoff diffuse sensors are ideal for short range applications where it is desirable to detect reflections from the target surface, yet ignore reflections from background surfaces or objects directly behind the target. These sensors are also especially suited for use in applications when high frequency lighting is present. This type of lighting can false trigger conventional photoelectric sensor. The RightSight sharp cutoff diffuse sensor will provide between 10 and 40 times more immunity when compared to a conventional photoelectric sensor. A single turn sensitivity adjustment is provided to maximize sensor performance in various applications.

Background suppression sensors are ideal for short range applications where it is desirable to detect reflections from the target surface, yet ignore reflections from background surfaces or objects directly behind the target. Background suppression sensors contain two active photoelectric sensing elements, calibrated to detect objects in front of and behind the nominal sensing distance. When a target is not present, the sensor can actively detect a background and turn the output on or off. RightSight background suppression sensors are among the easiest photoelectric sensors to apply. The sensors are non-adjustable to simplify installation and maintenance. Select the appropriate target range: 50mm (2.0in) or 100mm (3.9in) and RightSight will automatically reject most reflections beyond that range.

Due to the detection method, targets traveling horizontal to the sensor’s optics are detected, i.e., left to right or front to back. Targets traveling vertically may not be accurately detected. For reliable background suppression, a minimum separation distance of 6mm (0.24in) is recommended between the target and the background.

For most applications, transmitted beam sensing provides the most reliable operation. Transmitted beam sensing generally provides the highest operation margin, reducing the need for cleaning of sensor lenses or reflective targets. Transmitted beam sensing is also typically the best choice for sensing in difficult environments where dust, mist, and other contaminants are present. RightSight transmitted beam sensors are available in both short and long ranges, 4m (13ft) and 20m (66ft), respectively. The short-range version is ideally suited for installation in high noise environments where the sensor will be mounted close to motor starters, variable speed drives and other high frequency devices. The long-range version should only be used when the sensing distance exceeds 4m (13ft). Easily mounted slit apertures are available for use when sensing smaller objects at reduced ranges. The beam pattern for a transmitted beam sensor represents the boundary within which the receiver responds to the emitter, assuming there is no angular misalignment. Angular misalignment between the emitter and receiver will decrease the size of the sensing area. Margins shown are achieved when sensors are used in matched operating voltage pairs, i.e., AC/DC emitter with AC/DC receiver or DC emitter with DC receiver.