Group Members:

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Project Title: Automatic Door Opening System during Pandemic

- **Introduction:**

  In modern days, many intelligent technologies are introduced in our environment. The technology has been growing from day to day in human life. The necessity for the development of technology's to lead human life comfortably. Since 2020 the world is facing the pandemic situation we need to provide a hygienic and untouched and prevent the proper sanitization so we are creating this project to automatically open door disperse sanitizer check person temperature and detect the availability of sanitizer in the bottle using sensors and microcontroller

- **Description of the Project:**

  An Automatic Door Opening System is a project which automatically opens and closes the door by detecting a person or object. You might have seen Automatic Door Opener Systems at shopping malls, cinemas, hospitals etc. where, as soon as a person approaches the door (at about 2 or 3 feet), the door automatically slides open. And after some time (about 5 to 10 seconds), the door closes by sliding in the reverse direction. The design and implementation of system is done by Arduino hardware and the program is written in Arduino IDE and is simulated in Tinkercad software

- **Components & Sensors to be used:**

  i. AURDINO UNO: The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards and other circuits. It's programmable with the Arduino IDE (Integrated Development Environment) It can be powered by the USB cable.

  ii. NODEMCU: NODEMCU is a low-cost open source IoT platform .It initially included firmware which runs on the ESP8266.Its microcontroller unit it has inbuilt Wi-Fi module. Which is used to send and receive the data? Support for the ESP32 32-bit MCU was added.

  iii. ULTRASONIC SENSOR: IoT ultrasonic sensors are designed for non-contact detection of solid and liquid objects. These sensors are used for a wide variety of functions from monitoring the level of water in a tank to fluid identification/concentration, to detecting object proximity.

iv. TEMPERATURE SENSOR: The temperature sensor is is a commonly used temperature sensor providing 9 bit to 12 bit digital Celsius temperature measurements.

v. PASSIVE INFRARED SENSOR: PIR sensors allow you to sense motion, almost always used to detect whether a human has moved in or out of the sensors range. They are small, inexpensive, low-power, easy to use and don't wear out.

vi. LCD DISPLAY: LCD (Liquid Crystal Display) is an electronic display module and has vast range of applications. A 16x2 LCD display is a very basic module and is commonly used in various devices and circuits. These modules are preferred over the seven segments and other multi segment LEDs.

vii. SERVO MOTORS Servo Motors are ordinary geared down DC Motors equipped with servo mechanism for precise control of angular position. A servomechanism or servo refers to an error sensing negative feedback which is used to correct the performance of a device. Servos are used for precise positioning in robotic arms, legs, RC Aero planes, Helicopters etc. Servo Motors do not rotate continuously; their rotation is limited between fixed angles. Usually these motors have rotation limit from 90° to 180° and some special have limit 360° or more.

viii. BUZZER: Buzzer is an audio signalling device, which may be electromechanical .Typically uses of buzzers include alarm devices, and timers and confirmation of users input. Usually it's used as warning sound

- **Simulation Software to be used is TinkerCad:**

Tinkercad is a free online collection of software tools that help people all over the world think, create and make. Tinkercad is an amazingly powerful easy-to-use tool for creating digital Designs and Circuits that are ready to be 3D printed into super-cool physical objects. You will be guided through the design process via easy hands-on "Lessons" that teach you the basics of Tinkercad before moving on to more complex modelling techniques.

- **Verify sensors are supported by the simulation software**

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Thank You!