**Project Idea Submission Form**

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| **Student Ids (In ascending order)** |
| 1505009  1505025 |
| **Project Name** |
| Gesture Piano |
| **Brief Project Description** (We expect you to discuss here a very top level overview of your project, e.g., what sensor/environment values you are reading, which sensor(s) you are using to do that, what do you plan to do with these sensor/input readings, what processing/algorithm you run on these inputs, what actuators/output devices you are using, what the actuator(s)/output do/mean, etc.  Do not discuss the motivation of the project if it is obvious!) |
| We plan to build a piano using a Piezo-electric Buzzer to produce the various notes.  We will use the microcontroller, along with an external circuit consisting of resistors and capacitors to produce signals of different frequencies. These signals will then be fed into the buzzer, which will produce the corresponding sound.  We plan to use Pulse Width Modulation of signals to achieve our goal.   We’re going to be a bit ambitious, and instead of designing the piano with push buttons, we will use finger gestures to play it. In place of the buttons, we will use proximity sensors built using Infrared Sensors. When a finger comes close enough to a particular proximity sensor, a particular note will be played.  To sum it up, we will have an array of IR proximity sensors, each corresponding to one of the notes of a piano. These sensors will be our input.  The output signals will be received by a piezo-electric buzzer, and particular notes will be played. |
| **List of sensors/input devices used** (With specific name, model number, etc. You must provide the link from any BD online-shop and check their availability. You can omit the model name and number in case of rudimentary items e.g., buttons) |
| IR Obstacle Sensor[Preferred]  Model : SEN-00112  <https://www.techshopbd.com/product-categories/sensors/1824/ir-obstacle-sensor-techshop-bangladesh> |
| **List of Actuators/output devices used** (With specific name, model number, etc. You must provide the link from any BD online-shop and check their availability. You can omit the model name and number in case of rudimentary items e.g., LEDs) |
| Piezo Element[Preferred]Model : SEN-00110 <https://www.techshopbd.com/product-categories/miscellaneous-98724/1800/piezo-element-techshop-bangladesh> |
| **Miscellaneous & Discussion (If Any)** |
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