**VIETNAM NATIONAL UNIVERSITY, HO CHI MINH CITY**

**HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY**

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**MINI PROJECT**

**EMBEDDED SYSTEM**

**TOPIC:**

**ARDUINO – LED CUBE 3X3X3**

**CLASS: TT01 - GROUP: 7 - SEM232**

**STUDENTS’ INFORMATION**

|  |  |  |
| --- | --- | --- |
| **NO.** | **ID** | **NAME** |
| **1** | **2151001** | **CAO THỊ VÂN ANH** |
| **2** | **2151105** | **NGUYỄN PHẠM MINH KHÔI** |
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**­­­­­HO CHI MINH CITY, 2024**

**Product Requirements Document**

**Arduino – LED Cube 3x3x3 (Draft Version)**

**Priority Description**

**P0:** Must have requirement (Product will not launch without it).

**P1:** Not a requirement for launch but is needed 3-6 months post-launch.

**Product Requirements**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Feature/**  **Characteristic** | **Product Requirements** | **Priority** | **Technical/Engineering Specifications** | **Comments** |
| 1 | Components | * Arduino UNO * 27x LEDs * 1x Stripboard * 3x 22k ohm Resistors * 9x 220-ohm Resistors * 3x NPN Transistors * Wire | P0 |  |  |
| 2 | Dimensions | Shall be 6cm x 6cm x 6cm | P0 |  |  |
| 3 | Placement | Everywhere needs light | P0 |  |  |
| 4 | Power | Low power supply demand | P0 |  |  |
| 5 | LED type | Any colour, 2mA – 5mA | P0 | We can drive 9 LEDs carrying 2mA current from a single pin of UNO with no problems. The UNO pins are capable of delivering 20-30mA. |  |
| 6 | Time to install (Physical Installation) | Shall be physically installed within 5 minutes or less | P0 |  |  |
| 7 | Software/Firmware setup | Overall software setup shall be done in 10 minutes or less | P0 |  |  |