**EP1000 Digital Fabrication Fundamentals**

**Module Project**

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| **Group:** |  |
| **Adm No: 2029980** |  |
| **Name: Tiang Ziling Janesse** |  |

**Project Title: The LaunchPad**

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**What does it do?**

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| It plays a part of a song when a key is pressed on the grid so that the entire song can be played. It has a button that allows the user to change the “page” its on so that many different songs can be saved onto the launchpad or if there are not enough keys on the grid for the song. |

**What are it's features?**

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| A button that allows the user to change “pages”  A grid with many keys that plays a part of a song through a speaker when pressed |

Song can be saved on it and stays even after it has been powered off

**What will you make?**

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| CAD Design, Graphics | Casing design, grid design, housing, casing, |
| Laser cutting | Casing for the launchpad |
| 3D Printing | Keys for the launchpad, |
| Micro-controller | Push-button presses, readings, play speaker, |
| Input devices | Push-button switches |
| Output devices | 8-ohm speaker |

**Bill of materials**

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| **Sn.** | **Qty** | **Item Description** | **Approx Cost** |
| 1 | 1 | [Arduino Uno](https://shopee.sg/1-Set-UNO-R3-ATMEGA16U2%2BMEGA328P-Chip-For-Arduino-UNO-R3-Development-board-%2B-USB-CABLE-i.161750523.4922002764?gclid=CjwKCAjwruSHBhAtEiwA_qCpphZMyO5ikFWkkmeQfGj3FYnxV1N6hm6yTqsKZD1xpjYfMI9DAopTphoClRAQAvD_BwE&__hybrid_pc__=1&stm_referrer=) | 11.25 |
| 2 | 16 | [Tactile Push Buttons](https://shopee.sg/catchy-20PCS-tactile-push-button-switch-momentary-micro-switch-button-tact-cap-new-liveup-i.100694640.2090611735?position=6) | 3.94 |
| 3 | 1 | [PCB Board](https://shopee.sg/New-7x9-6x8-5x7-4x6-3x7-2x8cm-Double-Side-Prototype-Diy-Universal-Printed-Circuit-PCB-Board-Protoboard-4*6-6*8-5*7-i.237143839.6620234210?position=5) | 2.76+1.20 |
| 4 | 1 | [8 Ohm Speaker](https://robot-r-us.com.sg/p/thin-plastic-speaker-w-wires-8-ohm-0-25w) | 0.90 |
| 5 | 1 | [SD card module](https://shopee.sg/Micro-SD-Storage-Expansion-Board-Micro-SD-TF-Card-Memory-Shield-Module-SPI-For-Arduino-i.161750523.3262368878?position=19) | 1.14 |
| 6 | 1 | [SD card](https://shopee.sg/Kingston-Memory-Card-Sd-Card-Micro-SD-TF-Card-Class10-80MB-s-16GB-32GB-64GB-128GB-256GB-i.341885965.4774000646?position=13) | 5.00 |

**References:**

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| 1. <https://www.instructables.com/Make-Your-Own-Launchpad/> 2. <https://www.electronicshub.org/music-player-using-arduino/> |