Section: 2 Date: 8 Feb 2021

**Members**

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**2190151 Computer Programming Laboratory.**

**Laboratory 2:**

**Task 1**

1. LED toggling

Graded by ….................................................

**Task 2**

1. BASIC serial communication output (print and println)

Graded by ….................................................

1. Clicks with serial write

Graded by ….................................................

1. Serial read to ASCII values

Graded by ….................................................

1. Serial Read to LED

Graded by ….................................................

1. Multi-function program

Graded by ….................................................

1. Explain the difference between the two M5Stack functions related to buttons: isPressed() , wasPressed().

In the function isPressed() , an action will be performed while the button is pressed. In the function wasPressed() , an action pereformed will depend on how long the button was pressed.

1. Complete the following function to wait for a key from the serial port. For each pressed on a key '!', print your name and student id to the serial console. (Assuming that port is all set up.)

void loop() {

if (Serial.available()>0) {

int key=Serial.read();

Serial.write(key);

switch(key){

case '!':

Serial.println("Chawin Sungkhapong 6338040021");

break;

}

}

}

1. Use the sketch in Exercise 3 to complete the following table.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Character** | **Ascii (Decimal)** | **Ascii (Hex)** | **Character** | **Ascii (Decimal)** | **Ascii (Hex)** | **Character** | **Ascii (Decimal)** | **Ascii (Hex)** | | **0** | 048 | 0x30 | **A** | 065 | 0x41 | **(** | 040 | 0x28 | | **1** | 049 | 0x31 | **B** | 066 | 0x42 | **)** | 041 | 0x29 | | **2** | 050 | 0x32 | **C** | 067 | 0x43 | **@** | 064 | 0x40 | | **3** | 051 | 0x33 | **a** | 097 | 0x61 | **!** | 033 | 0x21 | | **4** | 052 | 0x34 | **b** | 098 | 0x62 | **(space)** | 032 | 0x20 | | **5** | 053 | 0x35 | **c** | 099 | 0x63 | **+** | 043 | 0x2b | | **6** | 054 | 0x36 | **Y** | 089 | 0x59 | **-** | 045 | 0x2d | | **7** | 055 | 0x37 | **Z** | 090 | 0x5a | **\*** | 042 | 0x2a | | **8** | 056 | 0x38 | **x** | 120 | 0x78 | **/** | 047 | 0x2f | | **9** | 057 | 0x39 | **z** | 122 | 0x7a | **=** | 041 | 0x3d | |

1. What is ASCII? What is it good for? Please explain.

ASCII is an abbreviation of American Standard Code For Information Interchange. It is a character encoding standard that translates characters in human language into bits that computers can understand.