LABORATORY

Microcontrollers

LAB 3

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Task 1.

a) Set cases 0 – 9 in the switch statement by switching on the segments that will display the number that corresponds to the value.
b) In the *sevensegment* function the ones and tens digits are separated into two.
c) The button states are declared and initialised by setting them to off/0 i.e pressed1 and pressed2.
d) If statement that checks if both Button1 and Button2 are pressed and resets the value to zero.
e) While statement that checks if Button1 is pressed and Button2 isn't pressed, then increments the value by 1. Debouncing is utilised in the while loop to ensure accuracy.
f) If statement that checks if Button2 is pressed and Button1 isn't pressed, then decreases the value by 1.

Task 3.

a) Button1 initialises the *save_value* function where the ADC reading is written into the memory.
b) Reading from ADC is set to *poti* variable via ADCW and is input into the *save_value* function.
c) The ADC reading is split into two bytes of 8 bits each, highbyte and lowbyte.
d) The bytes are then written into the memory slots with the start position being selected through the *i2c_master_write(#)* function.
e) Button2 initialises the *load_value* function which returns (reads) information from the memory.
f) The *load_value* function starts the communication with device and initialises the reading process.