CPEG 330
Assignment 1

1. **[6 marks]** Write a program to multiply-by-4 all the values stored in an array of 20 consecutive memory locations starting at address 0x30. The program only processes an element of the array if a button connected to RA0 is pressed.

2. **[6 marks]** Write a program to continuously read inputs from PORTA. If the input is an even number, the program outputs zero to PORTB. If the input is an odd number, the program accesses the shown lookup table using this input and outputs the corresponding value to PORTB. Assume that inputs read from PORTA are always between 0 and 7.

Key	Values
1	13
3	34
5	56
7	92

3. **[3 marks]** Write a macro to calculate the average of the contents of two file registers and place the result in a third file register. The macro should have the following format.

$$\text{AVGFF F1, F2, F3 ; F1} = (\text{F2} + \text{F3}) / 2$$