BCSE 2nd Year 2nd Semester

Experiments in Microprocessor Lab

Time: 2 weeks. **Problem Sheet #2**

1. Two numbers MN_H and KL_H are stored in 2050_H and 2051_H, respectively. Write a program to assemble them as NK_H and LM_H store them in 2052_H and 2053_H.
2. Two numbers A & B are stored in 2050_H and 2051_H, respectively. Write a program to perform A×B and store the result in 2052_H and 2053_H.
3. *N* numbers are stored in consecutive m/m location starting from 2050_H. The value *N* is stored in $204F_H$.
   - i) Find the maximum among the *N* numbers.
   - ii) Find the minimum among the *N* numbers.
   - iii) Sort the *N* numbers in ascending order.
   - iv) Sort the *N* numbers in descending order.
4. *N* numbers are stored in consecutive m/m location starting from 2050_H. The value *N* is stored in $204F_H$. Write a program to copy the even and odd numbers starting from 2100_H and 2200_H, respectively. Store the total no. of even and odd numbers in 2300_H and 2201_H, respectively.
5. *N* numbers are stored in consecutive m/m location starting from 2050_H. The value *N* is stored in $204F_H$. Write a program to test whether a number stored in $204E_H$ is present in the list. If present, store its position in the list at $204D_H$; otherwise store FF_H.

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Time: 2 weeks. **Problem Sheet #3**

1. A set of N data bytes is stored in m/m locations starting from 2501_H. The value of N is stored in 2500_H. Write a program to store these data bytes from m/m location 2600_H if D_0 or D_7 is 1; otherwise reject the data byte.

2. There are N data bytes stored from m/m location 2200_H. The value of N is stored in $21FF_H$. Write an 8085 program to find the sum of integers whose LSB and MSB are 1. Store the result in 2500_H and 2501_H.

3. Write an 8085 program to generate N^{th} fibonacci number using function and store it in 2050_H. The value of N (8-bits) is stored in memory 2060_H.

4. Write a program to transfer a block of bytes of size N from location1 to location2 (location2 > location1) when the size of overlap between the two locations is defined by M. The values of N and M are stored in $201E_H$ and $201F_H$, respectively.

5. Write a program to flash "**BCSE II**" in the address and data fields with a flashing rate of 0.5 seconds.

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Time: 2 weeks. **Problem Sheet #1**

1. Load the contents of the memory locations 2200_H and 2201_H into registers. Add these registers and store the result in memory locations 2202_H and 2203_H.
2. Find the sum of N numbers stored in consecutive locations starting from 2500_H. The value of N is stored in 2200_H. Store the result in locations 2300_H and 2301_H.
3. Find the sum of the least significant 4 bits and most significant 4 bits of a byte stored in memory location 2500_H. Store the result in 2550_H.
4. Write a program to count the '1's and '0's of a byte stored in 2500_H. Store the result in 2610_H and 2511_H, respectively.
5. Write a program to sum two 16-bits binary numbers.