**Programs**

1. Based on the value of the number in R0, Write an ALP to store 1 in R1 if R0 is zero, Store 2 in R1 if R0 is positive, Store 3 in R1 if R0 is negative. (Program shown in class)

2. Write an ALP to compare the value of R0 and R1, add if R0 = R1, else subtract (Program shown in class)

3. Write an ALP to find the factorial of a number stored in R0. Store the value in R1 (without using LDR and STR instructions). Use only registers. (Program shown in class)

4. a) Write an ALP to add two 32 bit numbers loaded from memory and store the result in memory.

b) Write an ALP to add two 16 bit numbers loaded from memory and store the result in memory.

5. a) Write an ALP to find GCD of two numbers (without using LDR and STR instructions). Both numbers are in registers. Use only registers.

b) Write an ALP to find the GCD of given numbers (both numbers in memory) Store result in memory.

6. a) Write an ALP to add an array of ten 32 bit numbers from memory.

b) Write an ALP to add array of ten 8 bit numbers taking data from memory location stored as byte data (use .byte to store the data instead of .word)

7. Write an ALP to multiply using barrel shifter.

35\*R0

8. Write an ALP to evaluate the expression (A+B) + (3\*B), where A and B are memory location.

\* Use LSL instruction for multiplication