Assignment 1

1. Write an Assembly Language Program to add two sixteen-bit numbers. The numbers are stored in DS: 0030H and DS: 0040H. Store the result in DS: 0050H, DS: 0051H, and DS: 0052H.

2. Write an Assembly Language Program to subtract an 8-bit numbers stored in DS: 0030H from a number stored in DS: 0040H using 2's complement method. Store the result in DS: 0050H, and DS: 0051H.

3. Write a program to transfer a block of 8 data bytes from memory location DS: 0030H to DS: 0040H.

4. Write an 8086 Assembly Language Program for the addition of 7 eight-bit numbers stored from DS: 0030H. Store the result in DS: 0050H and DS: 0051H.

5. Write an 8086 Assembly Language Program for the addition of 5 sixteen-bit numbers stored from DS: 0030H. Store the result in DS: 0050H, DS: 0051H, DS: 0052H.

6. Write an Assembly Language Program for the addition of five BCD numbers stored from DS: 0030H. Store the result in DS: 0040H and DS: 0041H.

7. Write an Assembly Language Program to subtract a BCD number stored in DS: 0040H from a BCD number stored in DS: 0050H. Store the result in DS: 0060H and DS: 0061H.

8. Write an Assembly Language Program to multiply two eight bit number stored in DS: 0040H and DS: 0050H. Store the result from DS: 0060H.

9. Write an Assembly Language Program to multiply two sixteen bit number stored in DS:0040H and DS:0050H. Store the result from DS: 0060H.

10. Write an Assembly Language Program to divide 88H by 33H. Store the quotient in DS: 0060H and remainder in DS: 0061H.

11. Write an Assembly Language Program to divide 2222H by 55H. Store the quotient from DS: 0060H and remainder in DS: 0062H.

Assignment 2

1. Write an Assembly Language Program to count the number of occurrence of 55H in a string of eight data bytes. The starting address of string is DS: 0030H. Store the count value in DS:0040H.

2. Write an Assembly Language Program to find out the location where 55H is placed in a string of eight data bytes. The starting address of string is DS: 0030H.

3. Write an Assembly Language Program to compare two strings. The first string is stored from memory location DS: 0030H and the second sting is stored from DS: 0040H. Consider that the first byte of both strings contain the number of bytes contained in that string. If both strings are found equal, then show a value FFFFH in address DS: 0050H, otherwise show 1111H.

4. Write an Assembly Language Program to check if a string of five data bytes is palindrome or not. The string is stored from memory location DS: 0030H. If the string is found to be palindrome then place FFFFH in addresses DS: 0040H otherwise place 1111H.

5. Write an Assembly Language Program to count the number of positive and negative numbers present in a series of eight data bytes. The starting address of the series is DS: 0030H. Store the count value of positive number in DS: 0040H and count value of negative number in DS: 0041H.

6. Write an Assembly Language Program to separate the odd and even numbers from a series of 7 data bytes. The starting address of the series is DS: 0030H. Store the even numbers from DS: 0040H and the odd numbers from DS: 0050H.

7. Write an Assembly Language Program to convert an 8-bit number stored in DS: 0030H into its equivalent ASCII value. Store the converted code from DS: 0050H.

8. Write an Assembly Language Program to find out the square root of a number stored in DS: 0030H. Store the result in DS: 0040H.

9. Fibonacci series is defined as:

   $F(i) = F(i-1) + F(i-2)$; for all i >2 with $F(1) = F(2) = 1$

   Write an Assembly language Program to generate the first ten elements of this sequence and store them from DS: 0030H.

Assignment 3

1. Write an Assembly Language Program to find the smallest number from a series of seven data bytes stored from DS: 0030H. Store the smallest number in DS: 0040H.

2. Write an Assembly Language Program to find the largest number from a series of 7 sixteen-bit numbers stored from DS: 0030H. Store the largest number in DS: 0040H.

3. Write an Assembly Language Program to arrange a series of 7 data bytes stored from DS: 0030H in ascending order.

4. Write an Assembly Language Program to arrange a series of 7 sixteen-bits data stored from DS: 0030H in descending order.

5. Write an Assembly Language program to find the square of a number stored in DS: 0030H using LOOK-UP table. Assume that the LOOK-UP table is stored from DS: 0040H that contains the square of the numbers 0 to 9. Store the square value in DS: 0050H.

DS:0100H	00
DS:0101H	01
DS:0102H	04
DS:0103H	09
DS:0104H	16
DS:0105H	25
DS:0106H	36
DS:0107H	49
DS:0108H	64
DS:0109H	81

Assignment 4

1. Write an Assembly Language Program to add 3 X 3 matrices. Assume the matrices are stored in the form of lists (row wise). First matrix is stored from DS:0030H and the second matrix is stored from DS:0040.Store the result of the addition in the third lists starting from DS:0050H.
2. Write an Assembly Language Program to convert an eight bit binary number stored in DS:0030H into its equivalent BCD number. Stored the result in DS:0040H.
3. Write an Assembly program to convert a BCD number stored in DS:0030H into its equivalent hexadecimal number. Stored the result in DS:0040H.
4. Write an Assembly program to convert a binary number stored in DS:0030H into its equivalent gray code. Stored the result in DS:0040H.
5. Write an Assembly program to find the factorial of a number stored in DS:0030H. Stored the result in DS:0040H.