CSE-305 Assembly Language Assignment

1. Translate the following assignment statement into assembly language, where X, Y and Z are variables. (Input should be given between 0 to 9)

$$Y = 2X-Z+3$$

If the output is greater than 9 then print a message "Bound exceeds" else print the value of Y.

Sample	
Input: Enter the value of X : 3 Enter the value of Z : 1 **Output:** The value of Y is : 8	**Input:** Enter the value of X : 5 Enter the value of Z : 1 **Output:** Bound exceeds

2. Write a program in assembly language which takes 2 inputs A and B . Translate the following statements into assembly language.

```
If(A>=B)
        Y=A-B
Else
        Y=B-A
```

Sample	
Input: Enter the value of A : 3 Enter the value of B : 2 **Output:** Result is: 1	**Input:** Enter the value of A : 4 Enter the value of B : 8 **Output:** Result is: 4

3. Write a program in assembly language that will check Whether a Number is Even or Odd

Input: Enter the value of X : 2 **Output:** Given input is an even number	**Input:** Enter the value of X : 3 **Output:** Given input is an odd number

4. Write a program in assembly language which takes 3 integer numbers and output the minimum and maximum of those three integers.

Sample	
Input: Enter 1st number : 2 Enter 2nd number: 8 Enter 3rd number: 4 **Output:** Minimum : 2 Maximum : 8	**Input:** Enter 1st number : 7 Enter 2nd number: 1 Enter 3rd number: 3 **Output:** Minimum : 1 Maximum : 7

5. Write an assembly program that will take a number n as input and print the following pattern.

Sample	
Input: 4 **Output:** * ** *** ****	**Input: 5** **Output:** * ** *** **** *****

6. Take an user input. Check whether it is a digit or a character. If it is a character then check whether it is Vowel or Consonant. In case of Vowel print a message called "Given input is a Vowel" and In case of Consonant print a message called "Given input is a Consonant". If it is a digit then print a message called "Given input is a number". Otherwise print a message saying invalid input. Ask the user if he or she want to give another input. If 'Y' then do the same process again else if 'N' then quit.

Sample Input & Output:
Enter the value of X : 2
Given input is a number
Do you want to give another input?
Y
Enter the value of X : A
Given input is a Consonant
Do you want to give another input?
Y
Enter the value of X : E
Given input is a Vowel
Do you want to give another input?
Y
Enter the value of X : +
Invalid input
Do you want to give another input?
N

7. Write a program in assembly language that will count the number of vowels , consonants & digits from a user given input. The program will take input until 'ENTER' button is pressed. (count vowels and consonants from lower case letters, any input other than lowercase letters and digits will not be considered).

Input: lkjowa **Output:** Number of vowels: 2 Number of consonants: 4 Number of digits: 0	**Input:** AXcvb1ui* **Output:** Number of vowels: 2 Number of Consonants: 3 Number of digits: 1

8. Take a binary input and count the number of 1 in that input. Finally show the number of 1's in decimal.

Input: Please enter the binary number **10110101** **Output:** Total number of 1 in decimal:**5**	**Input:** Please enter the binary number **01100011** **Output:** Total number of 1 in decimal: **4**

9. Write an assembly program in assembly language which takes 2 inputs in binary and takes a sign '+' or '-' as input and perform the corresponding operation. Then print the result in binary.

Sample	
Input: Enter the value of number_1 : 10101101 Enter the value of number_2 : 00100101 Enter the sign: + **Output:** Result is: 11010010	**Input:** Enter the value of number_1 : 10001001 Enter the value of number_2 : 01100001 Enter the sign: - **Output:** Result is: 00101000

10. Write an assembly program that will take digits as input until enter is pressed and count number of even digits in that input. Finally show the number of even digits.

Input: Please enter the input **12069874213654** **Output:** Total number of even digits in input:**8**	**Input:** Please enter the input **03468752** **Output:** Total number of even digits in input: **5**

11. Write an assembly program that will take a binary input and show the corresponding output in Hexadecimal Number.

Input: Please enter the binary number**0010110010001111** **Output:** The given number in Hexadecimal is **2B8F**	**Input:** Please enter the binary number: **1000111000010011** **Output:** The given number in Hexadecimal is **8E13**

12. Write an assembly program that will take a Hexadecimal input and show the corresponding output inBinary.

Input: Please enter the Hexadecimal number **2B8F** **Output:** The given number in Binary is **0010110010001111**	**Input:** Please enter the Hexadecimal number **8E13** **Output:** The given number in Binary is **1000111000010011**

13. Write an assembly program that will take a input n and calculate the sum of the given series upto nth terms.(n must be between 1 to 9)

1*1+3*2+5*4+7*8+ . . .
For Example, when **n=3**

1*1+3*2+5*4= 27

27 in Hexa is **001B**

Input: **3** **Output:** **Sum is: 001B**	**Input:** **4** **Output:** **Sum is: 0053**

14. Take an input n & calculate the sum of the series upto nth term. Then display the output in binary, **1 + 3+ 5+ 7+ …**

Input: 3 **Output:** Sum is: 00001001	**Input:** 4 **Output:** Sum is: 00010000

15. Write a program that will take a binary number as an input. Reverse the input and then display the reversed input.

Input: Please enter a binary number **11001010** After reversing the input: **01010011**	**Input:** Please enter the binary number **10011001** After reversing the input: **10011001**