Lab 08

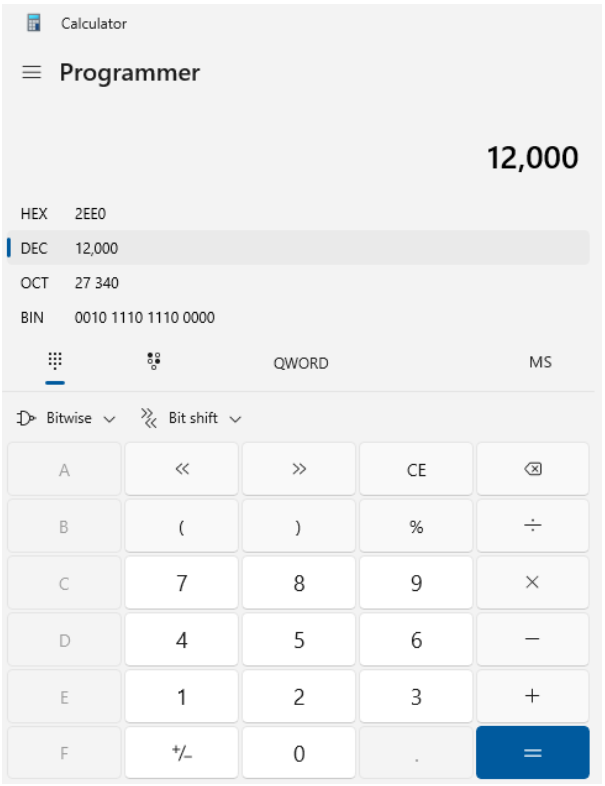
Extended Multiplication in Assembly Language

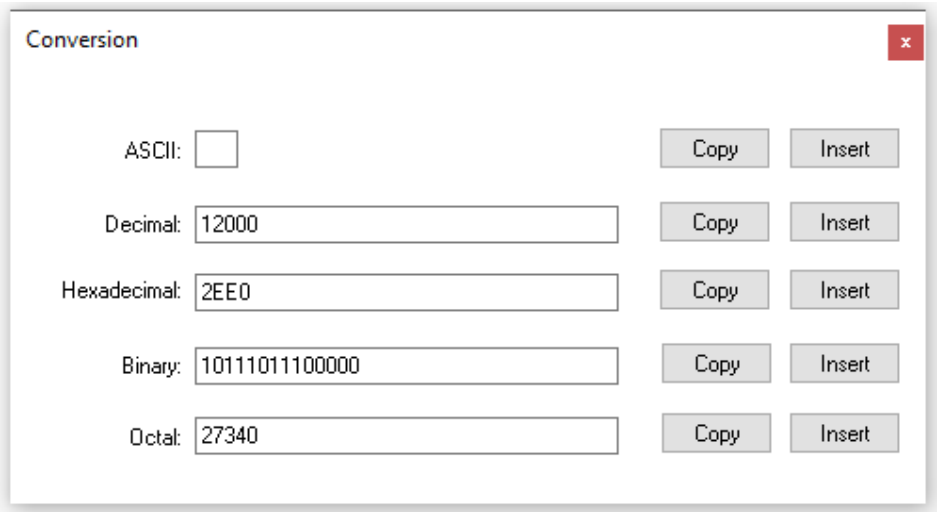
Task 1

Compose a code in Assembly language to left shift (one time) a 16-bit number of your choice by using only "SHL". Apply the concept of extended shifting as well on the same number and compare the results of both shifting methods.

Show the number you are shifting in 16-bit binary, hexadecimal and decimal format before and after shifting it once. (Hint: You may use the calculator of Windows in its **programmer** mode and show all these values in a screenshot or **notepad++** can also be used for this purpose (notepad++ →plugins → converter → conversion panel).

Screenshots are given below for your reference.





Task 2

Write a code in Assembly language to add two 16-bit numbers of your own choice by applying the concept of extended addition. Show the numbers you are adding in 16-bit binary, hexadecimal and decimal format before addition. Do the same once you have added the numbers and show the result as said above.

Task 3

Apply the concept of extended shifting and addition for the multiplication of two 8-bit numbers of your own choice.

Task 4

Repeat task 3 for two 16-bit numbers of your own choice.

For all the Tasks:

Upload .asm file of your code. The asm file should be named as "L8_last 3 digits of your roll number" e.g. **"L8_123.asm"**

Paste the screenshots of the DosBox and all the important results (as per the task statement) in a word document under the task heading in a proper sequence and convert the document into **pdf** for uploading.

Note: For multiplication tasks you may refer to example 4.2 in your book handouts.