**Name: Hamza Haroon**

**Roll No. BCS07203008**

**LAB SESSION 5**

**Objective**

Assembling, editing, linking, and executing Assembly code examples using

EMU8086

**Theory**

**Practice 8086 Emulator**

* Loading, verifying and saving machine code
* Executing instructions and tracing programs
* Writing a complete assembly program

**Sample Code :**

;;;;; This program does basic arithmetic operations for two variables

;A and B are the variables

Org 100h

;;;;; Data segment starts

.DATA

* DW 11
* DW

SUM DW **?**

DIFFERENCE DW **?**

MULTIPLICATION DW **?**

DIVISION DW **?**

;;;;; Code segment starts

.CODE

MAIN PROC FAR

;initialize DS

;subtract the numbers

;multiply the numbers

END MAIN

RET

**Procedure:**

* Calculate manually the value of variables seen in the data segment of the code above.
* Write and run the code in EMU8086 environment.
* Open „Emulator‟ window , run your code and click „vars‟ button to watch your variables. You should see the screens in the Figure 1

.

**Figure 1: Emulator window and Variables window**

**ANSWER:**

**Program Run:**



***Figure 1***

* Fill the following table.

|  |  |  |
| --- | --- | --- |
| **Variables** | **Calculated** | **Actual** |
| A | **0063h** | **99** |
| B | **0008h** | **08** |
| SUM | **006Bh** | **107** |
| DIFFERENCE | **005Bh** | **91** |
| MULTIPLICATION | **0318h** | **792** |
| DIVISION | **000Ch** | **12** |