**Assembly Language (F&R)**

**Fall 2017**

**Assignment-1**

**Submission:**

**Submit soft copies, 13th September, 2017 (on xeon, until labs are open)**

**Question 2:**

Write a code to calculate xy without using multiplication. (Hint: use add and loop(s)) Store the result in a memory label. X and Y both should also be declared as memory labels. (db or dw?)

**Question 3:**

Write a code that reads two integers from memory and divides them and places the quotient in al and remainder in ah. Declare both the dividend and divisor as db (not dw). (you cannot use div instruction)

**Question 4:**

Convert the following C++ code into assembly language.

Consider the numbers are declared in memory rather than taking input. For taking mod, use the code that you have developed in the above question and embed it as nested loop

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| --- |
| #include <iostream>  using namespace std;  int main() {  int n1, n2, hcf;  cout << "Enter two numbers: ";  cin >> n1 >> n2;  // Swapping variables n1 and n2 if n2 is greater than n1.  if ( n2 > n1) {  int temp = n2;  n2 = n1;  n1 = temp;  }    for (int i = 1; i <= n2; ++i) {  if (n1 % i == 0 && n2 % i ==0) {  hcf = i;  }  }  cout << "HCF = " << hcf;  return 0;  } |

**Question 5:**

Suppose we have a 2D array that is stored as 1 D array in memory under the label **matrix.** Using row major order to access the elements of this 2D array, write an assembly program that finds the transpose and places it in another 2D array named **transpose.** You would need two more variables in memory for storing total number of rows and columns of **matrix**