



**Computer Architecture and Assembly
Language Programming Practical
(CS401P)**

Total marks = 20

Deadline Date:

22nd Nov, 2024

Assignment No. 2

Please carefully read the following instructions before attempting assignment.

RULES FOR MARKING

It should be clear that your assignment would not get any credit if:

- The assignment is submitted after the due date.
- The submitted assignment does not open or the file is corrupt.
- Strict action will be taken if the submitted solution is copied from any other student or from the internet.

You should concern lecture handouts & recommended books to clarify your concepts

You are supposed to submit your assignment in **DOC** or **DOCX** format.

Any other formats like scan images, PDF, zip, rar, ppt and bmp etc. will not be accepted.

Lectures covered: 1-13

Topics covered: Jumps (Conditional and Unconditional), Subroutines, Multiplication via bit shifting, Looping constructs, Incrementing/Decrementing the Counter register.

NOTE

No assignment will be accepted **after the due date via email in any case** (whether it is the case of load shedding or internet malfunctioning). Hence refrain from uploading assignment in the last hour of the deadline. It is recommended to upload your solution file at least two days before its closing date.

If you find any mistake or confusion in the assignment (Question statement), please contact your instructor before the deadline. After the deadline, no queries will be entertained in this regard.

For any query, feel free to email at cs401P@vu.edu.pk

Task:**[20 marks]**

Write a program that will sum your VU Student ID (excluding the first two alphabets) and then determine if the **result is divisible by 3 or not**.

Details:

- I. Store your Student ID, excluding the first two alphabets, in an array. For example, if your Student ID is BC123456789 then create an array that will have 1, 2, 3, 4, 5, 6, 7, 8, 9 as its elements.
- II. When calculating the sum, there is no need to use counter register. You can directly perform calculations by accessing elements from array and adding them in the accumulator register.
- III. When determining if the resultant sum is divisible by 3 or not, use appropriate division operator and jump instructions.
- IV. **If result is divisible by 3, store 1 in DX register; otherwise store 0.**

Screenshot Requirements:

Provide AFD screenshot after you have successfully run your code. \

In the screenshot:

- I. Memory area 1 must show the sum of your Student ID digits.
- II. The value of DX register should indicate if number is divisible by 3 (either 1 or 0)

Submission details:

Following is required in a single MS-Word document.

- a) Complete assembly language program.
- b) Screenshot showing the result.

“Best of luck”