The University of Lahore

(Computer Organization and Assembly Language)

Lab Task-08

Issue Date: 30-04-2025 Points 10
Due Date: 30-04-2025 (01:59pm)
Lab Instructor: Mr. Muhammad Hassan

Important points to be observed for assignment submission.

- **Write your own solution; copied work will result in mark deductions.**
- **25% marks will be deducted for each day of late submission.**
- **Submit the task in soft form.**
- **Using AI or cheating will result in a zero grade.**
- **No late submissions will be accepted**

Task Submission Process:

- Ensure your document is neat, properly formatted, and follows the instructions.
- Submit the task in Hard Form on Thursday
- Any plagiarism will result in a zero grade.
- Upload the WORD file on Slate.

Learning Outcomes:

- Accept user input through interrupts.
- Store and retrieve data using stack instructions (PUSH, POP).
- Perform conditional checks using CMP and jump instructions.
- Use loops to automate repetitive checks in Assembly language.

Practice Task 1: Score Multiplier (Using MUL)

Scenario:

You are building a grading system where a student's raw score (out of 10) is entered by the user. You need to **multiply** that score by **5** to convert it to a weighted score out of 50.

Requirements:

- Take **1-digit input** from the user using INT 21h and **convert it from ASCII**.
- Multiply the number using MUL.
- Display the final result.

Practice Task 2: Signed Penalty Calculator (Using IMUL & IDIV)

Scenario:

A company applies a **penalty of -3** to an employee's record. The penalty points (e.g., 5) are entered by the user. You need to:

- Multiply the points by **-3** using **signed multiplication (IMUL)**.
- Then **divide** the result by **2** using **signed division (IDIV)** to normalize it.
- Finally, print the result.

Requirements:

- Input must be converted from ASCII.
- Use **IMUL** for signed multiplication.
- Use **IDIV** to divide by 2.
- Show result using INT 21h.