Sardar Vallabhbhai National Institute of Technology
BTech. II (CSE)
Semester - IV
Microprocessor and Interfacing Techniques(CS202)

Lab-1

Exploring the GNU Simulator and Writing Simple Assembly Code

Part 1: Setup and Introduction to GNU Simulator

1. Exploration of Basic Commands:

   Start the simulator and introduce them to the following basic commands:

   i.   sim (to start the simulator).
   ii.   run (to start execution).
   iii.   step (to execute one instruction at a time).
   iv.   disassemble (to view the disassembled code).
   v.   break (to set breakpoints).
   vi.   info (to display registers or flags).

2. Simulate a Simple Program

   Provide a simple program (e.g., adding two numbers) and show students how to simulate the code in the GNU simulator.

   Example code:
   Simple program to add two numbers

   MOV A, #5   ; Load 5 into register A

   ADD A, #3   ; Add 3 to register A

   HLT   ; Halt the program

3. Basic Exploration:

   After running the simulation, check the register values and output using the info and disassemble commands. Discuss how the microprocessor executes the program step-by-step.