Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

Department of Electronics & Telecommunication Engineering

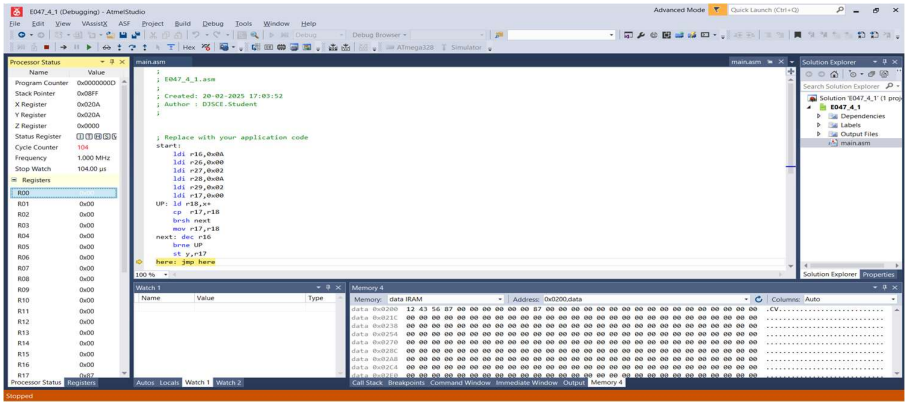
Name: **Batch/Rollno:**

SAP ID: **Date:**

Experiment No.: ONE

Microcontroller & Applications

Objective:	Overview of personal computer (PC) assembly, and its various components.
Outcome:	Learners observe, study and compare the evolution of PC assembly and its various sub-components as well as PC peripheral devices.
Tasks/Problem Statement:	Evaluate and report evolution of PC assembly in light of: a. Microprocessor family and evolution b. Memory technology – RAM / DRAM and families c. Secondary storage technology – HDD / SATA / Optical / SSDs etc. d. Bus standards – ISA / EISA / VESA / PCI / PCIe e. Display technologies – CRT / LCD f. Communication ports – serial / parallel / USB g. Pointing devices – ball mouse / trackpad / optical mouse / joystick etc.
Report with comments and brief explanation:	**Microprocessor Family and Evolution:** The evolution began with Intel 4004 (4-bit) in 1971, followed by Intel 8086 (16-bit), Pentium series, Core series (i3/i5/i7/i9), and now ARM-based chips in laptops. Improvements include increased speed, reduced power consumption, and higher integration. **Memory Technology – RAM / DRAM and Families:** RAM has evolved from SDRAM to DDR (DDR1 to DDR5). Each generation offers faster speed, lower voltage, and better efficiency. **Secondary Storage Technology:** Initial PCs used HDDs (magnetic disks), which were later upgraded with faster and more reliable SSDs (Solid State Drives). SATA and PCIe interfaces became standard. Optical storage like CDs and DVDs are now rarely used. **Bus Standards:** Bus technologies evolved from ISA and EISA to PCI, VESA Local Bus, and modern PCIe (Peripheral Component Interconnect Express), which allows faster data transfer and supports modern GPUs and SSDs.

	Display Technologies: Monitors evolved from bulky CRTs to flat-panel LCDs, then to LEDs, and now OLEDs and high-refresh-rate displays. Current trends focus on energy efficiency, resolution, and form factor. **Communication Ports:** Legacy serial and parallel ports have mostly been replaced by USB standards (2.0/3.0/3.1/Type-C) which are faster and more versatile. **Pointing Devices:** Old ball mice were replaced by optical and laser mice. Trackpads are now common in laptops. Joysticks are still used for gaming and simulations.
	
Conclusion :	The evolution of PC components reflects a constant push for performance, efficiency, and miniaturization. From microprocessors to pointing devices, every component has undergone significant transformation to match modern computing needs.