Microprocessor architecture practical pdf

UnitDetails I Microprocessor, microcontroversies, and Assembly Language: Microprocessor, Microprocessor Teaching Set and Computer Languages, from large computers to single-Chip Microcontrovers, Applications. Microprocessor architecture and microcomputer system: Microprocessor architecture and its operation, memory, I/O devices, microcomputer system, logic devices and interfacing, Microprocessor-based system application. 8085 Micro processor Architecture and Memory Interface: Introduction, 8085 Microdecessor Unit, 8085-based microcomcomlain, memory interfacing, interfacing the 8155 Memory Segment, Illustrative Example: Design Memory for the MCTS Project, Testing and Troubleshooting Memory Interfacing Circuit, 8085-based singleboard microcomputer II Interfacing of I/O Devices: Basic Interfacing Concepts, Interfacing Output Display, Interfacing Input Devices, Memory Mapped I/O, Testing and Troubleshooting I/O Interfacing Circuits Introduction to 8085 Assembly Language Programming: The 8085 Teaching Classification, Instruction, Data and Storage, Write meeting and execution of a simple program, Overview of 8085 Instruction Set, Write and Assembly Program Introduction to 8085 Instructions: Data Transfer Operations, Recotary Operations, Logic Operation, Branch Operation, Write Meeting Languages Programs, Debugging a Program. III Programming Techniques with additional instructions: Programming techniques: Running, Counting and Indexing, Additional data transfer and 16-bit Arithmetic Instructions, Arithmetic Instructions Related to Memory, Logic Operations: Rotating, Logic Operations: Compare, Dynamic Debugging. Scorers and time delays: Counters and time delays, Illustrative Program: Hexadecimal counter, Illustrative Program: zero-to-nine (Modulo Ten) counter, generating pulse waves, debugging counter and time-delay programs. Stacks and sub-routines: stacking, subroetine, rebooting, conditional call, return instructions, Advanced Subrotine concepts. IV Code Conversion, BCD Rethmetic, and 16-Bit Data Operations: BCD-to-Binary Conversion, Binary-to-BCD Conversation, BCD-toSeven-Segment-LED Code Conversion, Binary-to-ASCII and ASCIIto-Binary Code Conversation, BCD Additive, BCD Deduction, Introduction to Advanced Instructions and Programs, Multiplying, Deduction with Wear. Software Development System and Assemblers: Microprocessors-based software development system, operating system and programming tools, meetings and cross-assemblers, writing program using Cross Meetrs. Interruptions: The 8085 Interruption, 8085 Vectored Interruptions, Restarted as S/W Instructions, Additional I/O Concepts and Processes. V The Pentium and Pentium Pro microprocessors: Introduction, Special Pentium Registers, Memory Management, Pentium Instructions, Pentium Pro Microprocessor, Special Pentium Pro Features. Core 2 and later Microprocessors: Introduction, Pentium II software changes, Pentium IV and Core 2, i3, i7. They are SPARC SPARC Architecture, Registry file, data types and instruction format Practically NoDetails 1 Perform the following operations related to memory locations. A save the data byte 32H in memory location 4000H. b Exchange the contents of memory locations 2000H and 4000H 2 Simple assembly language applications a draw the content of the memory location 4001H of memory location 2000H and instead The result in memory location 4002H b Subtract two 8-bit numbers c Add the 16-bit number in memory locations 4000H and 4001H to the 16-bit number in memory locations 4002H and 4003H. The main eight bits of the two numbers to be added are in memory places 4001H and 4003H. Save the result in memory locations 4004H and 4005H with the main grip in the memory location 4005H. d Add the contents of memory locations 40001H and 4001H and place the result in memory locations 4002Hand 4003H. e Subtract the 16-bit number in memory locations 4002H and 4003H of the 16-bit number in memory places 4000H and 4001H. The main eight bits of the two numbers are in memory places 4001H and 4003H. Save the result in memory locations 4004H and 4005H with the main grip in the memory location 4005H. f Find the l's supplementation of the number stored at memory location 4400H and save the supplemented number at memory location 4300H. g Find the 2's supplement of the number stored at memory location 4200H and save the supplemented number at memory location 4300H. 3 Packaging and unpacking operations. A pack of the two extracted BCD numbers stored in memory locations 4200H and 4201H and store result in memory location 4300H. Assume that the least significant number is stored at 4200H. b Two digit BCD number is stored in memory location 4200H. Remove the BCD number and save the two digits in memory places 4300H and 4301H so that memory location will have 4300H lower BCD figure. 4 Register Operations. Write an app to move an eight bit of data four bits correctly. Assume that data in registry C. b Program is to move a 16-bit data 1-bit over. Accept data is in the HL registry few c Write a set of instructions to change the contents of the flag register in 8085. D. Write a program to count number of l's in content of D registry and save the score in the B register 5 Multiple memory locations. a Calculate the sum of the range of numbers. The length of the range is in memory place 4200H and the range starts from the memory location 4201H. Consider the sum to be 8 little number. So, ignore wears. Save the sum at memory location 4300H. b. Consider the sum to be 16-bit number. Save the sum at memory locations 4300H and 4301H b . Multiply two 8-bit numbers stored in memory locations 2200H and 2201H by recurring additive and save the result in memory locations 2300H and 2301H. c Split 16 bit number stored in memory locations 2200H and 2201H by the 8 little number stored at memory location 2202H. Save the quote in memory locations 2300H and 2301H and in memory locations 2302H and 2303H. d Find the number of negative elements (main little 1) in a block data. The length of the block is in memory location 2200H and the block itself starts in memory location 2201H. Save the number of negative elements in memory location 2300H e Find the largest number in a block data. The length of the block is in memory location 2200H and the block itself starts from the memory location 2201H. Save the maximum number in memory location 2300H. Assume that the numbers in the block are all 8 bit unscheded binary numbers. 6 Calculations regarding memory places A write a program to given 10 numbers from memory location 2200H in the ascending order b Calculate the sum of range even numbers from the list of numbers. The length of the list is in memory place 2200H and the range itself starts from the memory location 2201H. Accept the sum to be 8-bit number so you will sum by memory location 2Sample problem c Calculate the sum of the range of odd numbers from the list of numbers. The length of the list is in memory place 2200H and the range itself starts from the memory location 2201H. Assume that the sum is 16-bit. Save the sum at memory locations 2300H and 2301H. d Find the square of given numbers from memory location 6100H and save the result of memory location 7000H and Search the given byte in the list of 50 numbers stored in the consecutive memory locations and save the address of memory location in the memory locations 2200H and 2201H. Accepted bytes are in the C register and start address of the list is 2000H. If grip is not found at 2200H and 2201H f Two decimal numbers of six digits each, is stored in BCD package form. Each number ocives a sequence of grip in memory. The start address of the first number is 6000H Write a meeting language program that adds these two numbers and saves the sum in the same format start from Memory Location 6200H g Add 2 arrays with ten 8-bit numbers each and generate a third variety of result. It is necessary to add the first element of array 1 with the first element of array-2 and so on. The starting addresses of array l, array2 and array3 are 2200H, 2300H and 2400H, respectively 7 Assembly programs at memory locations. Write a meeting language program to separate even numbers from the given list of 50 numbers and save them in the other list from 2300H. Accept the start address of 50 number list is 2200H b Write meeting language program with proper comments for the following: a block of data consisting of 256 bytes stored in memory starting at 3000H. This block must be moved (moved) in memory from 3050H mode. Do not move the block or part of the block anywhere else in memory. c Even add parity to a string 7-bit ASCII characters. The length of the rope is in memory place 2040H and the rope itself starts in memory location 2041H. Place even parity in the most bit of each character. d A list of 50 numbers is stored in memory, starting at 6000H. Find number of negative, zero and positive numbers from this list and save these results in memory places 7000H, 7001H, and 7002H respectively e Write a meeting language program to generate fibonacci number. f Program to calculate the factory of a number between 0 and 8 8 string operations in meeting programs a Write a Write an 8085 meeting language program to remove a string of four characters from tenth place in the given range of 50 characters b Write an 8085 meeting language program to remove a string of 4 characters from the tenth place in the given range of 50 characters c Multiply the 8-bit unscheded number in memory location 2200H by the 8-bit unscheded number in memory location 2201H. Save the 8 least significant bits of the result in memory location 2300H and the 8 main bits in memory location 2301H. d Split the 16-bit unsceded number in memory locations 2200H and 2201H (main pieces in 2201H) by the B-bit unsceded number in memory location 2300H storage the quote in memory location 2400H and remainder in 2401H e DAA teaching is not present. Write a sub-routine that will perform the same task as DAA. 9 Calculations in memory locations. A to test RAM by writing '1' and reading it back and writing '0' (zero) later and reading it back. RAM addresses to be checked are 40FFH to 40FFH. In the case of any error it is indicated by writing 01H at port 10 b Arrange a range of 8 little unsigned no in deciduous order c Transfer ten bytes of data from one memory to another memory block. Source memory block starts from memory location 2200H where as a destination memory block from memory location 2300H d Write a program to find the Square Root of an 8-bit binary number. The binary number is stored in memory location 4200H and saves the square root in 4201H. and Write a simple program to split a HEX data into two nibbles and save it in memory 10. Operations on BCD numbers add two 4-digit BCD numbers in HL and DE registry pairs and save result at memory locations, 2300H and 2301H. Ignore wears up to 16 bit. B. Subtract the BCD number stored in E register from the number stored in the D register, writes a meeting language program to multiply 2 BCD numbers Title Microprocessors Architecture, Programming and Applications with the 8085 Authors Ramesh Gaonka Publisher PENRAM Edition 5th Year 2012 Download Here Title Computer Strategy Architecture Writers M. Morris Mano Publisher PHI Edition Year 1998 Download Here Title Structured Computer Organization Authors Andrew C. Tanenbaum Publisher PHI Edition Year Download Here Title 8080A/8085 Assembly Language Programming Writers Lance A. Leventhel Publisher Osborne Edition Year 1978 Download Here