PUNE INSTITUTE OF COMPUTER TECHNOLOGY

Department of Computer Engineering

Academic Year: 2019-20

CLASS: S.E. **SEMESTER: II**

MAPPING OF ASSIGNMENTS TO COURSE OUTCOMES

SUBJECT: MICROPROCESSOR LAB (210257)

Date: 16/12/2019

Lab Expt No.	PROBLEM STATEMENT	CO's Attained
1	Write X86/64 ALP to count number of positive and negative numbers from the array.	CO 1
2	Write X86/64 ALP to perform non-overlapped and overlapped block transfer (with and without string specific instructions). Block containing data can be defined in the data segment.	CO 1, CO 2
3	Write X86/64 ALP to convert 4-digit Hex number into its equivalent BCD number and 5-digit BCD number into its equivalent HEX number. Make your program user friendly to accept the choice from user for: (a) HEX to BCD b) BCD to HEX (c) EXIT. Display proper strings to prompt the user while accepting the input and displaying the result. (wherever necessary, use 64-bit registers).	CO 1
4	Write X86/64 ALP to perform multiplication of two 8-bit hexadecimal numbers. Use successive addition and add and shift method. (use of 64-bit registers is expected) .	CO 1
5	Write X86 ALP to find, a) Number of Blank spaces b) Number of lines c) Occurrence of a particular character. Accept the data from the text file. The text file has to be accessed during Program_1 execution and write FAR PROCEDURES in Program_2 for the rest of the processing. Use of PUBLIC and EXTERN directives is mandatory.	CO 1, CO 2
6	Write X86/64 ALP to switch from real mode to protected mode and display the values of GDTR, LDTR, IDTR, TR and MSW	CO 1, CO4

	Registers.	
7	Write X86 program to sort the list of integers in ascending/descending order. Read the input from the text file and write the sorted data back to the same text file using bubble sort.	CO 1, CO 2
8	Write X86 menus driven Assembly Language Program (ALP) to implement OS (DOS) commands TYPE, COPY and DELETE using file operations. User is supposed to provide command line arguments in all cases.	CO 1, CO 2
9	Write x86 ALP to find the factorial of a given integer number on a command line by using recursion. Explicit stack manipulation is expected in the code.	CO 1, CO 2
10	Write 80387 ALP to find the roots of the quadratic equation. All the possible cases must be considered in calculating the roots.	CO 1, CO 3
11	Write 80387 ALP to obtain: i) Mean ii) Variance iii) Standard Deviation Also plot the histogram for the data set. The data elements are available in a text file.	CO 1, CO 3
12	Write a Terminate but Stay Resident (TSR) program for a key-logger. The key-presses during the stipulated time need to be displayed at the center of the screen. OR Write a TSR to generate the pattern of the frequency tones by reading the Real Time Clock (RTC). The duration of the each tone is solely decided by the programmer.	CO 1, CO 4
13	Write 80386 ALP to implement multitasking. Where each task is supposed to change the color of the text displayed at the center of the screen.	CO 1, CO3
14	Write 80387 ALP to find the roots of the quadratic equation. All the possible cases must be considered in calculating the roots.	CO 1, CO 3

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Subject Coordinator