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|  | ***LIST OF ASSIGNMENTS*** |

Department: Computer Engineering Class: SE

Academic Year: 2017-18 Semester: II

Subject: Microprocessor Lab

**List of Assignments**

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| **Assignment**  **No.** | **Title of the assignment** | **Outcomes Mapped** |
|  | Write X86/64 Assembly language program (ALP) to display “Hello world”. | Extra |
|  | Write X86/64 ALP to accept the number and display number (Using Conversion) | Extra |
|  | Write X86/64 ALP to add two numbers and display result-Homework | Extra |
|  | Write X86/64 ALP to count number of positive and negative numbers from the array | 1 |
|  | Write X86/64 ALP to perform non-overlapped and overlapped block transfer (without string specific instructions). Block containing data can be defined in the data segment. | 2a |
|  | Write X86/64 ALP to perform non-overlapped and overlapped block transfer (with string specific instructions). Block containing data can be defined in the data segment- Homework | 2b |
|  | Write 64 bit 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. (use 64-bit registers) | 3 |
|  | 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) | 4 |
|  | 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. | 5 |
|  | Write X86/64 ALP to switch from real mode to protected mode and display the values of GDTR, LDTR, IDTR, TR and MSW Registers. | 6 |
|  | 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 | 8 |
|  | 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. | 9 |
|  | Write 80387 ALP to find the roots of the quadratic equation. All the possible cases must be considered in calculating the roots. | 10 |
|  | Write X86 menu 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. | 11 |
|  | 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. | 12 |
|  | **TSR Program**  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 | 13 |