List of Experiments
Course: CSE3232-Microprocessor and Assembly Language Lab

String Processing:

		Title: Case Conversion and String Reversal Problems.
		Outline: Description of the Problems:
1.	(a)	Write an assembly language program to implement a case conversion program that will read a string (a line of characters of letters, digits, punctuation symbols, and others) as input and then convert the letters into its opposite case as output. Here, the characters which are not belonged to letters will remain be unchanged. Your program must contain necessary messages for formatted input and output.
	(b)	Write an assembly language program to implement a string reversal program that will read a string (a line of characters of letters, digits, punctuation symbols, and others) as input and then make the reverse form of the string as output. You have to solve this problem in two ways such as (i) using array (ii) using stack. Your program must contain necessary messages for formatted input and output.
		Task: Implementation using Microsoft Macro-Assembler (MASM)
		Mode of Evaluation: Experiment + Viva
		Percentage of Weight: 6% + 9% = 15%
		Title: String Searching Problems.
		Outline: Description of the Problems:
2.	(a)	Write an assembly language program to implement a searching program that will read a string (a line of letters of English alphabet) as input and then find out the first capital letter which is occurred first and last capital letter which is occurred last in the alphabetical order as output. Your program will display a message with "No Capitals" when there is no capital letter in the string. Your program must contain necessary messages for formatted input and output.
	(b)	Write an assembly language program to implement a searching program that will read a string (a word of letters of English alphabet either all in uppercase or all in lowercase but not both) as input and then find out the longest sequence of letters in the word in alphabetical order. Your program must contain necessary messages for formatted input and output.
	(c)	Write an assembly language program to implement a searching program that will read two strings (two words of letters of English alphabet either all in uppercases or all in lowercases but not both) as input and then determine whether a string is a substring of another string or not. Your program must contain necessary messages for formatted input and output.
		Task: Implementation using Microsoft Macro-Assembler (MASM)
		Mode of Evaluation: Experiment + Viva
		Percentage of Weight: 8% + 10% + 12% = 30%
		Title: Counting and Sorting Problems.
		Outline: Description of the Problems:
3.	(a)	Write an assembly language program to implement a counting program that will read a string (a line of characters of letters, digits, punctuation symbols, and others) as input and then count the number of Vowels, Consonants, Digits, and Spaces in the string as output. Your program must contain necessary messages for formatted input and output.
	(b)	Write an assembly language program to implement a sorting program that will read a string (a word of letters of English alphabet either all in uppercase or all in lowercase but not both) as input and then sort the letters in the word in alphabetically (i) ascending order (ii) descending order. Your program must contain necessary messages for formatted input and output.
		Task: Implementation using Microsoft Macro-Assembler (MASM)
		Mode of Evaluation: Experiment + Viva
		Percentage of Weight: 10% + 10% = 20%

Number Processing:

		Title: Series Summation and Factorial Calculation Problems.
		Outline: Description of the Problems:
1.	(a)	Write an assembly language program to implement a series summation program that will read a number N of single decimal digit (from 1 to 3) as input and then calculate the summation value of the series 1 + 2 + --- + N. Your program must contain necessary messages for formatted input and output.
	(b)	Write an assembly language program to implement a factorial calculation program that will read a number N of single decimal digit (from 0 to 3) as input and then determine the factorial value of N. Your program must contain necessary messages for formatted input and output.
		Task: Implementation using Microsoft Macro-Assembler (MASM)
		Mode of Evaluation: Experiment + Viva
		Percentage of Weight: 5% + 5% = 10%
		Title: Even-Odd and Prime Number Testing Problems.
		Outline: Description of the Problems:
2.	(a)	Write an assembly language program to implement an even-odd testing program that will read a number N of single decimal digit (from 0 to 9) as input and then determine whether N is an even number or an odd number. Your program must contain necessary messages for formatted input and output.
	(b)	Write an assembly language program to implement a prime number testing program that will read a number N of single decimal digit (from 0 to 9) as input and then determine whether N is a prime number or not. Your program must contain necessary messages for formatted input and output.
		Task: Implementation using Microsoft Macro-Assembler (MASM)
		Mode of Evaluation: Experiment + Viva
		Percentage of Weight: 6% + 9% = 15%
		Title: Sorting Problem.
		Outline: Description of the Problem:
3.	(a)	Write an assembly language program to implement a sorting program that will read an array of numbers of single decimal digits (from 0 to 9) as input and then sort the numbers in (i) ascending order (ii) descending order as output. Your program must contain necessary messages for formatted input and output.
		Task: Implementation using Microsoft Macro-Assembler (MASM)
		Mode of Evaluation: Experiment + Viva
		Percentage of Weight: 10%