CSD211:Computer Organization and Architecture

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Instructions
1) Use only a MARS simulator for MIPS32 programming in the lab.
2) Programs given for Brainstorming can be submitted later, but other programs you need to code in the lab only.
3) Save your programs in a separate folder with .asm extension and delete it from the system after making final submission and before leaving the lab.
4) Show the working programs to the TAs available before submitting your word file at blackboard.

Q1: Create a MIPS assembly program that reads a text file and counts the number of characters in it. The program should then write the count to a new file.

Hints: - Use syscall with appropriate service numbers for file operations. - Remember to open the file in read mode, read character by character, and close it when done. - Use a register to keep track of the character count.

Q2: Create a MIPS assembly program that reads a text file and counts the number of characters in it. The program should then write the count to a new file.

Hints: - Use syscall with appropriate service numbers for file operations. - Remember to open the file in read mode, read character by character, and close it when done. - Use a register to keep track of the character count.

Q3: Develop a MIPS program that reads a text file line by line, reverses each line, and writes the reversed lines to a new file.

Q4: Write a MIPS assembly program that reads a text file, counts the frequency of each word, and writes the results to a new file in the format "word: frequency".

Hints: - Define what constitutes a word (e.g., separated by spaces or punctuation). - Use a data structure like a hash table to store word frequencies efficiently. - You may need to implement dynamic memory allocation for storing words. - Consider sorting the results before writing to the output file.