Lab 03

Tuesday 14th November, 2023

Welcome to the Lab Session

Objective: Become familiar with using variables, branching, and arithmetic operations in the 8086 emulator software.

Lab Work

1. **Prime Number Check:**

   Create an assembly program that determines if a given number is a prime or not. The program should use a loop to divide the number by 2, 3, ..., (number-1) at each iteration. If the remainder after division is equal to 0 at any iteration, the number is not prime. If the loop completes, the number is prime. Set the `isPrime` variable accordingly.

2. **Perfect Square Check:**

   Extend the program to check if the given number is a perfect square. A perfect square is an integer that is the square of an integer. Check if the number is the square of 2, 3, ..., sqrt(number). Set the `isSquare` variable accordingly. Use the `DIV` instruction for square root calculation.

3. **Evaluation:**

   You must complete your experiment before the lab hour.

Hints

- For prime number investigation, create a loop that divides the number by 2, 3, ..., (number-1) and check the remainder using the `CMP` instruction.

- For perfect square check, use the `DIV` instruction for square root calculation and compare the remainder using the `CMP` instruction.