

1. Design Notes / Overview (Part 2)

Title: C6461 Simulator – Part 2 Design Notes

1. Introduction

- This document provides an overview of the C6461 simulator updates in Part 2.
- Part 2 extends functionality from Part 1 with additional instructions, cache implementation, and testing programs.

2. New Features in Part 2

1. **Instruction Implementation:**
 - All instructions implemented except CHK and Part 4 instructions.
2. **Cache Implementation:**
 - Cache size: 16 words.
 - Replacement policy: FIFO (least recently used word replaced on cache miss).
3. **Assembly Programs for Testing:**
 - `data/multiline.txt`: Prints a string of text on the display.
 - `data/parse_num_99.txt`: Parses numbers from 0 to 99 and prints them.
 - `data/parse_num_999.txt`: Parses numbers from -999 to 999 and prints them.
4. **Incomplete Programs:**
 - Program 1 from Part 2 documentation is incomplete due to index register management issues.

3. Summary of Part 2 Updates

- Adds cache and additional instructions.
- Provides example programs for testing functionality.
- Builds on Part 1 foundation (CPU registers, GUI, memory interaction).