# Term Project Milestone 2 Evaluation

| Evaluation Criteria Categories | Specific Criteria | Comments | Score |
|---|---|---|---|
| Consistency with higher level specifications | Every instruction allowed by the machine language (ML) specification has a unique register transfer language (RTL) representation<br>The sequences of register transfers specified by each RTL description correctly implement the functions described in the assembly language (AL) specification<br>Every component referenced in the RTL descriptions is determined<br>For each component, input, output, and control signals that are sufficient to implement the RTL descriptions are identified, including the size of each signal | RTL specified for AL, ML instructions.<br><br>RTL appears correct for most instructions.<br>jal double increments the PC.<br><br>Components are specified with reasonable control signals.<br>You might want to consider a memread signal for memory.<br>Does shifting by a 16-bit number make sense? | 3/3 |
| Self-consistency | The effect of each individual RTL statement is unambiguous<br>No state element is assigned more than one value in any given clock cycle | RTL commands are clearly defined.<br><br>State elements appear to be used correctly in each cycle. | 3/3 |
| Demonstration of design principles<br>1. Simplicity favors regularity<br>2. Smaller is faster<br>3. Good design demands good compromises<br>4. Make the common case fast | Significant delays are balanced between cycles, so that the clock cycle can be as short as reasonably possible<br>Each instruction uses as few clock cycles as possible without extending the clock cycle<br>Each component is used efficiently at each clock cycle, and components are not duplicated unnecessarily | Delays are, for the most part, reasonably balanced.<br>beq, bne, slt can be shortened one cycle by rearranging operators.<br>sw can be shortened by moving cycle 5 operation to cycle 4.<br>jal can be shortened by one cycle. | 2/3 |

| | | | |
|---|---|---|---|
| Documentation (see below)<br>Organization<br>Completeness<br>Conciseness<br>Grammar and style | Clear English specifications<br>o The behavior of each component is described unambiguously<br>o Documentation, as listed in the following page, demonstrates all the design issues discussed above | Memo would benefit from memo formatting—you wouldn't turn in something that basic to a boss who asked you for a memo. Word even supplies templates, so the amount of work involved is trivial.<br><br>Design Process Documentation shows clear reasoning behind design choices / documents progress towards milestone.<br><br>Design Documentation provides well-defined specifications.<br><br>Webpage clearly links to relevant files, shows obvious effort.<br><br>Webpage has an interactive RTL instruction flowchart. | 16/16 |

Required Documents

- Memo
  - Objective assessment of design and status
- Design Documentation
  - Demonstration of conceptual understanding
  - Highlights interesting features
- Design Process Journal
  - Alternatives considered
  - Tradeoffs
  - Decisions
- Webpage