

Team 2-5

**Milestone 1 (Assembly Language and Machine Language Specifications)**

Total points 27

Evaluation Criteria Categories	Specific Criteria	Comments	Score
Consistency with higher level specifications	<ul style="list-style-type: none"> <li><input type="checkbox"/> Given the semantics of the Assembly Language (AL) specification, the sample program can be implemented</li> <li><input type="checkbox"/> Every instruction allowed by the assembly language (AL) specification has a unique machine language (ML) representation                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Each instruction type includes enough fields to represent the information specified in the corresponding AL statements</li> <li><input type="checkbox"/> Each field is allocated enough bits to represent all values allowed by the AL specification</li> <li><input type="checkbox"/> For each instruction type, the total number of bits allocated to fields is not greater than the number of bits available</li> </ul> </li> <li><input type="checkbox"/> Sample programs are translated into binary as described in ML specification</li> </ul>	<p>The AL seems capable of GCD and other programs.</p> <p>The AL has an ML specification to allow translation.</p> <p>All programs have been translated properly into the ML.</p>	(4/4)
Self-consistency	<ul style="list-style-type: none"> <li><input type="checkbox"/> Sample program uses the syntax described in AL specification</li> <li><input type="checkbox"/> Sample program uses the registers described in AL specification (number and type)</li> <li><input type="checkbox"/> Sample program uses the representation given in the ML specification, including correct values for fields specifying branch and jump targets</li> </ul>	<p>The programs follow syntax of both instructions and registers.</p> <p>The program is translated using the ML specification.</p>	(4/4)
Demonstration of design principles 1. Simplicity favors regularity 2. Smaller is faster 3. Good design demands good compromises 4. Make the common case fast	<ul style="list-style-type: none"> <li><input type="checkbox"/> AL instructions are easy to understand and are not overly specialized</li> <li><input type="checkbox"/> Number of instructions is minimized</li> <li><input type="checkbox"/> Number of registers is minimized</li> <li><input type="checkbox"/> Where the above criteria conflict, good compromises are made (to make the common case fast)</li> <li><input type="checkbox"/> Number of instruction types is small</li> <li><input type="checkbox"/> Instruction types have regularity</li> </ul>	<p>The AL is moderately complex, but is simple enough for a programmer to grasp quickly and make use of.</p> <p>The AL possesses many instructions and the standard 16 registers. It is attempting to be programmer friendly with many useful commands.</p> <p>There are 7 instruction types, but for this size of a language 7 isn't too bad.</p>	(4/4)

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<p>Documentation</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Organization</li> <li><input type="checkbox"/> Completeness</li> <li><input type="checkbox"/> Conciseness</li> <li><input type="checkbox"/> Grammar and style</li> <li>• Memo                             <ul style="list-style-type: none"> <li>• Objective assessment of design and status</li> </ul> </li> <li>• Design Documentation                             <ul style="list-style-type: none"> <li>• Demonstration of conceptual understanding</li> <li>• Highlights interesting features</li> </ul> </li> <li>• Design Process Journal                             <ul style="list-style-type: none"> <li>• Alternatives considered</li> <li>• Tradeoffs</li> <li>• Decisions</li> </ul> </li> <li>• Website</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Clear English specifications                             <ul style="list-style-type: none"> <li>○ Instruction set (incl. prototypical AL statements)</li> <li>○ Registers                                     <ul style="list-style-type: none"> <li>▪ Number of general purpose registers</li> <li>▪ Specification of special purpose registers (if applicable)</li> <li>▪ Naming conventions</li> <li>▪ Usage conventions</li> </ul> </li> <li>○ Instruction types</li> <li>○ Representation of each instruction</li> </ul> </li> </ul>	<p>The memo is just a progress report, it should contain some information about key decisions which were made.</p> <p>There is no design document. Provide one for next time, specifications are on the website. It is to contain everything you have decided on so far and should have a table of contents. -2</p> <p>Your journal should be in paragraph form more than bullet form. It contains the decisions made though, so no points will be lost this time. Please try to move away from bullet format.</p> <p>Your website is done well enough. I wouldn't mind an introduction to your project on the first page or the latest memo to give the first page some color, and perhaps a more professional look.</p> <p>Specify special purpose registers (PC, EPC, etc) -1.</p>	<p>(15/18)</p>