


**Term Project Milestone 4 Evaluation (Components Specification)**

Evaluation Criteria Categories	Specific Criteria	Comments	Score
Consistency with higher level specifications	<ul style="list-style-type: none"> <li><input type="checkbox"/> Components have interfaces (inputs, outputs, and control signals) that are consistent with the datapath specification, including signal widths.</li> <li><input type="checkbox"/> Components produce behaviors that are consistent with the assembly language and register transfer language levels of the design specification.</li> <li><input type="checkbox"/> Components implement their behaviors within the timing constraints imposed by the RTL specification.</li> </ul>	<p>Components have good descriptions.</p> <p>You might want to consider if IR, PC need to trigger on the clock signal.</p> <p>One major discrepancy: Register file has two outputs in datapath (as is standard) but your component claims to have only one output.</p>	2/3
Self-consistency	<ul style="list-style-type: none"> <li><input type="checkbox"/> Example: Specification of 1-bit ALU is consistent with specification of 16-bit ALU.</li> <li><input type="checkbox"/> Example: Specification of bi-directional variable-displacement shifter is consistent with specifications of unidirectional variable-displacement shifters.</li> </ul>	<p>Details are not provided for smaller design units (registers, 1-bit ALU, etc.)</p>	 2/3
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"/> Component specifications are as simple as reasonably possible (e.g. variable-displacement shifters are composed of multiple fixed-displacement shifters).</li> <li><input type="checkbox"/> Component specifications are as small as reasonably possible (e.g. variable-displacement shifters use as few fixed-displacement shifters as possible).</li> <li><input type="checkbox"/> Conflicts between the preceding criteria are resolved by considering overall performance (e.g. design of variable displacement shifters considers how often shifts of various displacements actually are used)</li> </ul>	<p>Component complexity appears reasonable.</p>	3/3
Documentation (see below) <input type="checkbox"/> Organization <input type="checkbox"/> Completeness <input type="checkbox"/> Conciseness <input type="checkbox"/> Grammar and style	<ul style="list-style-type: none"> <li><input type="checkbox"/> All design decisions necessary to implement Xilinx model are documented (components may be implemented by core generated objects or built-in symbols, which include gates and some higher-level entities)</li> <li><input type="checkbox"/> Clear English specifications as necessary</li> <li><input type="checkbox"/> Component tests</li> </ul>	<p>Memo would benefit from memo formatting.</p> <p>Design journal is good, would benefit from more detail.</p> <p>Webpage links to relevant files.</p> <p>Design documentation would benefit from diagrams, shows some inconsistencies.</p>	15/16

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
- Website