

Princeton University
 COS 217: Introduction to Programming Systems
 SPARC Assembly Language “if...else” Statement
 Optimization

<p>C:</p> <pre> ... instruction0; if (test) { trueinstruction1; trueinstruction2; ... trueinstructionN; } else { falseinstruction1; falseinstruction2; ... falseinstructionN; } instruction1; ... </pre>	<p>Assembly language:</p> <pre> ... instruction0 cmp ... bnx else nop trueinstruction1 trueinstruction2 ... trueinstructionN ba ifend nop else: falseinstruction1 falseinstruction2 ... falseinstructionN ifend: instruction1 ... </pre>
<p>Optimized assembly lang. (version 1):</p> <pre> ... instruction0 cmp ... bnx,a else falseinstruction1 trueinstruction1 trueinstruction2 ... ba ifend trueinstructionN else: falseinstruction2 ... falseinstructionN ifend: instruction1 ... </pre>	<p>Optimized assembly lang. (version 2):</p> <pre> ... instruction0 cmp ... bnx,a else falseinstruction1 trueinstruction1 trueinstruction2 ... trueinstructionN ba ifend instruction1 else: falseinstruction2 ... falseinstructionN instruction1 ifend: ... </pre>