

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

<p>C:</p> <pre> int i; int max; ... for (i = 0; i < max; i++) { instruction1; instruction2; ... instructionN; } ... </pre>	
<p>Assembly Language:</p> <pre> ! Register map: ! %10 int i; ! %11 int max; ... clr %10 loopstart: cmp %10, %11 bge loopend nop instruction1 instruction2 ... instructionN inc %10 ba loopstart nop loopend: ... </pre>	<p>Optimized Assembly Language:</p> <pre> ! Register map: ! %10 int i; ! %11 int max; ... ba looptest clr %10 loopstart: instruction2 ... instructionN inc %10 looptest: cmp %10, %11 bl,a loopstart instruction1 ... </pre>