

|  | x: esp+48      y: esp + 44   | esp+48: symX<br>esp+44: symY  |
|--|--|---|
| <pre> foo() {     int A[10], x,y;     x = read-from-file();     y=  read-from-file();      if(x&lt;10)     {         A[x] = 30;     }     if(y&gt;20)     {         return;     }     ..... } </pre> | <pre> <b>L0:</b> 1  FOO= alloca i32,48 2  ebx1 = read_from_file() 3  store ebx1, 48(FOO)  //store x 4  ebx2 = read_from_file() 5  store ebx2, 44(FOO)  //store y  6  ebx3 = load 48(FOO) //load x 7  if(ebx3&gt;=10), jmp L2:  <b>L1:</b> 8  store \$30, FOO[4*ebx3]  <b>L2:</b> 9  eax = load 44(FOO)  //load y 10 if(eax&lt;=20) jmp L3     return  <b>L3:.....</b> </pre> | <pre> <b>L0:</b> 1  FOO= alloca i32,48 2  ebx1 = read_from_file() 3  symX=ebx1 4  ebx2 = read_from_file() 5  symY = ebx2  6  ebx3= symX 7  if(ebx3&gt;=10), jmp L2:  <b>L1:</b> 8  store \$30, FOO[4*ebx3]  <b>L2:</b> 9  eax = symY 10 if(eax&lt;=20) jmp L3     return  <b>L3:....</b> </pre> |
| a) Original Code   | b) IR without symbol promotion   | c) IR with symbol promotion   |