|  |  |  |
| --- | --- | --- |
| foo()  {  int A[10], x,y;  x = read-from-file();  y= read-from-file();  if(x<10)  {  A[x] = 30;  }  if(y>20)  {  return;  }  …..  }  **b) IR without symbol promotion**  **a) Original Code** | x: esp+48 y: esp + 44  **L0:**  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>=10), jmp L2:*  ***L1:***  8 store $30, FOO[4\*ebx3]  **L2:**  9 eax = load 44(FOO) //load y  10 if(eax<=20) jmp L3  *return*  **L3:***…..*  **c) IR with symbol promotion** | esp+48: symX  esp+44: symY  **L0:**  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>=10), jmp L2:*  **L1:**  8 store $30, FOO[4\*ebx3]  **L2:**  9 eax = symY  10 if(eax<=20) jmp L3  *return*  **L3:***….* |