

# Princeton University

## COS 217: Introduction to Programming Systems

### Assembler Output for 14testpass2jump.s

After Pass 1:

#### Symbol Table

Label	Section	Byte Offset	Local/Global	Label Sequence #
labelLocal0	text	2	local	0
labelGlobal	text	6	global	1
labelLocal1	text	39	local	2
labelUndefined	?	?	global	3
labelInDiffSection	data	0	local	4

#### Relocation Records

Section	Byte Offset	Relocation Type	Label Sequence #
text	9	R_386_PC32	0
text	15	R_386_PC32	2
text	21	R_386_PC32	1
text	27	R_386_PC32	3
text	33	R_386_PC32	4

#### Data Section

Byte Offset	Contents (hex)	Explanation
0	6a	.asciz "junk"
1	75	
2	6e	
3	6b	
4	00	

#### Text Section

Byte Offset	Contents (hex)	Explanation
0-1	01 c0	addl %eax, %eax
2-3	01 c0	addl %eax, %eax
4-5	01 c0	addl %eax, %eax
6-7	01 c0	addl %eax, %eax
8-12	e9 fc ff ff ff	jmp labelLocal0 (fffffffc in hexadecimal is -4 in decimal)
13-18	0f 84 fc ff ff ff	je labelLocal1 (fffffffc in hexadecimal is -4 in decimal)
19-24	0f 85 fc ff ff ff	jne labelGlobal (fffffffc in hexadecimal is -4 in decimal)
25-30	0f 8c fc ff ff ff	jl labelUndefined (fffffffc in hexadecimal is -4 in decimal)
31-36	0f 8f fc ff ff ff	jg labelInDiffSection (fffffffc in hexadecimal is -4 in decimal)
37-38	01 c0	addl %eax, %eax
39-40	01 c0	addl %eax, %eax

After Pass 2:

### Symbol Table

Label	Section	Byte Offset	Local/Global	Label Sequence #
labelLocal0	text	2	local	0
labelGlobal	text	6	global	1
labelLocal1	text	39	local	2
labelUndefined	?	?	global	3
labelInDiffSection	data	0	local	4

### Relocation Records

Section	Byte Offset	Relocation Type	Label Sequence #
text	21	R_386_PC32	1
text	27	R_386_PC32	3
text	33	R_386_PC32	4

### Data Section

Byte Offset	Contents (hex)	Explanation
0	6a	.asciz "junk"
1	75	
2	6e	
3	6b	
4	00	

### Text Section

Byte Offset	Contents (hex)	Explanation
0-1	01 c0	addl %eax, %eax
2-3	01 c0	addl %eax, %eax
4-5	01 c0	addl %eax, %eax
6-7	01 c0	addl %eax, %eax
8-12	e9 f5 ff ff ff	jmp labelLocal0 (ffffff5 in hexadecimal is -11 in decimal) 2 - (9 + 4) = -11
13-18	0f 84 14 00 00 00	je labelLocal1 (00000014 in hexadecimal is 20 in decimal) 39 - (15 + 4) = 20
19-24	0f 85 fc ff ff ff	jne labelGlobal (ffffffc in hexadecimal is -4 in decimal)
25-30	0f 8c fc ff ff ff	j1 labelUndefined (ffffffc in hexadecimal is -4 in decimal)
31-36	0f 8f fc ff ff ff	jg labelInDiffSection (ffffffc in hexadecimal is -4 in decimal)
37-38	01 c0	addl %eax, %eax
39-40	01 c0	addl %eax, %eax