对15231204\_test.txt进行中间代码生成后，产生如下的中间代码：（在控制台予以了输出）：

CONST INTSY 1 con\_int1

CONST INTSY -1 con\_int2

CONST INTSY 34 con\_int3

CONST INTSY 10 con\_int4

CONST CHARSY 65 con\_ch4

INTSY index

INTSY 10 var\_arr

INTSY bigger\_input

CHARSY 10 var\_arr\_ch

FSTART

LABEL find\_bigger

PARA INTSY a

PARA INTSY b

JS a b label0

RETURN a

LABEL label0

ASN 1 TEMP0

ADD a TEMP0 TEMP1

PUSH TEMP1

PUSH b

RCALL find\_bigger TEMP2

RETURN TEMP2

FEND

FSTART

LABEL print\_bigger

PRINTF The bigger number is bigger\_input

FEND

FSTART

LABEL relation

PARA INTSY a

PARA INTSY b

CONST INTSY 0 sml\_eql

CONST INTSY 1 bgr\_eql

INTSY re

JB a b label1

ASN sml\_eql re

PRINTF input3 is smaller OR equal than input4

LABEL label1

JS a b label2

ASN bgr\_eql re

PRINTF input3 is bigger OR equal than input4

LABEL label2

JE a b label3

LABEL label3

JNE a b label4

PRINTF input3 is equal to input4

LABEL label4

JNEI re 0 label6

JBE a b label7

PRINTF input3 is smaller than input4

LABEL label7

JUMP label5

LABEL label6

JNEI re 1 label8

JSE a b label9

PRINTF input3 is bigger than input4

LABEL label9

JUMP label5

LABEL label8

LABEL label5

FEND

FSTART

LABEL main

INTSY input1

INTSY input2

INTSY input3

INTSY input4

SCANF input1

SCANF input2

SCANF input3

SCANF input4

ASN 0 TEMP3

ASN TEMP3 index

PUSH input1

PUSH input2

RCALL find\_bigger TEMP4

ASN TEMP4 bigger\_input

CALL print\_bigger

PUSH input3

PUSH input4

CALL relation

SUB 0 input3 TEMP5

ASN -1 TEMP6

DIV input3 TEMP6 TEMP7

MUL input4 TEMP7 TEMP8

ASN '97' TEMP9

MUL TEMP8 TEMP9 TEMP10

ADD TEMP5 TEMP10 TEMP11

PUSH input3

PUSH input4

RCALL find\_bigger TEMP12

ASN 7 TEMP13

MUL TEMP12 TEMP13 TEMP14

ADD TEMP11 TEMP14 TEMP15

PRINTF TEMP15

LABEL label10

ASN 2 TEMP16

MUL index TEMP16 TEMP17

ASN 1 TEMP18

ADD TEMP17 TEMP18 TEMP19

ASNAR TEMP19 index var\_arr

ADD con\_ch4 index TEMP20

ASNAR TEMP20 index var\_arr\_ch

GETAR var\_arr index TEMP21

PRINTF TEMP21

GETAR var\_arr\_ch index TEMP22

PRINTF TEMP22

ASN 1 TEMP23

ADD index TEMP23 TEMP24

ASN TEMP24 index

JS index con\_int4 label10

FEND

利用上面的目标代码生成mips目标代码：

1. .data
2. con\_int1: .word 1
3. con\_int2: .word -1
4. con\_int3: .word 34
5. con\_int4: .word 10
6. con\_ch4: .word 65
7. index: .word 0
8. var\_arr: .word 0:10
9. bigger\_input: .word 0
10. var\_arr\_ch: .word 0:10
11. .text
12. addi $fp,$sp,0
13. j main
14. find\_bigger:
15. sw $ra,4($sp)
16. addi $sp,$sp,-20
17. lw $t0,-0($fp)
18. addi $s1,$t0,0
19. lw $t0,-4($fp)
20. addi $s0,$t0,0
21. sub $t2,$s1,$s0
22. bltz $t2,label0
23. addi $v0,$s1,0
24. addi $sp,$fp,76
25. lw $fp,-68($sp)
26. lw $ra,-72($sp)
27. lw $s0,0($sp)
28. lw $s1,-4($sp)
29. lw $s2,-8($sp)
30. lw $s3,-12($sp)
31. lw $s4,-16($sp)
32. lw $s5,-20($sp)
33. lw $s6,-24($sp)
34. lw $s7,-28($sp)
35. lw $t4,-32($sp)
36. lw $t5,-36($sp)
37. lw $t6,-40($sp)
38. lw $t7,-44($sp)
39. lw $t8,-48($sp)
40. lw $t9,-52($sp)
41. lw $a1,-56($sp)
42. lw $a2,-60($sp)
43. lw $a3,-64($sp)
44. jr $ra
45. label0:
46. addi $t0,$zero,1
47. addi $t1,$fp,-8
48. sw $t0,0($t1)
49. lw $t1,-8($fp)
50. add $t3,$s1,$t1
51. sw $t3,-12($fp)
52. sw $s0,0($sp)
53. sw $s1,-4($sp)
54. sw $s2,-8($sp)
55. sw $s3,-12($sp)
56. sw $s4,-16($sp)
57. sw $s5,-20($sp)
58. sw $s6,-24($sp)
59. sw $s7,-28($sp)
60. sw $t4,-32($sp)
61. sw $t5,-36($sp)
62. sw $t6,-40($sp)
63. sw $t7,-44($sp)
64. sw $t8,-48($sp)
65. sw $t9,-52($sp)
66. sw $a1,-56($sp)
67. sw $a2,-60($sp)
68. sw $a3,-64($sp)
69. sw $fp,-68($sp)
70. sw $fp,-68($sp)
71. addi $sp,$sp,-76
72. lw $t0,-12($fp)
73. sw $t0,0($sp)
74. sw $s0,-4($sp)
75. addi $fp,$sp,0
76. jal find\_bigger
77. addi $t0,$fp,-16
78. sw $v0,0($t0)
79. lw $t0,-16($fp)
80. addi $v0,$t0,0
81. addi $sp,$fp,76
82. lw $fp,-68($sp)
83. lw $ra,-72($sp)
84. lw $s0,0($sp)
85. lw $s1,-4($sp)
86. lw $s2,-8($sp)
87. lw $s3,-12($sp)
88. lw $s4,-16($sp)
89. lw $s5,-20($sp)
90. lw $s6,-24($sp)
91. lw $s7,-28($sp)
92. lw $t4,-32($sp)
93. lw $t5,-36($sp)
94. lw $t6,-40($sp)
95. lw $t7,-44($sp)
96. lw $t8,-48($sp)
97. lw $t9,-52($sp)
98. lw $a1,-56($sp)
99. lw $a2,-60($sp)
100. lw $a3,-64($sp)
101. jr $ra
102. addi $sp,$fp,76
103. lw $fp,-68($sp)
104. lw $ra,-72($sp)
105. lw $s0,0($sp)
106. lw $s1,-4($sp)
107. lw $s2,-8($sp)
108. lw $s3,-12($sp)
109. lw $s4,-16($sp)
110. lw $s5,-20($sp)
111. lw $s6,-24($sp)
112. lw $s7,-28($sp)
113. lw $t4,-32($sp)
114. lw $t5,-36($sp)
115. lw $t6,-40($sp)
116. lw $t7,-44($sp)
117. lw $t8,-48($sp)
118. lw $t9,-52($sp)
119. lw $a1,-56($sp)
120. lw $a2,-60($sp)
121. lw $a3,-64($sp)
122. jr $ra
123. print\_bigger:
124. sw $ra,4($sp)
125. addi $sp,$sp,0
126. .data
127. string0: .asciiz "The bigger number is "
128. .text
129. la $a0,string0
130. addi $v0,$zero,4
131. syscall
132. la $t0,bigger\_input
133. lw $t0,0($t0)
134. addi $a0,$t0,0
135. addi $v0,$zero,1
136. syscall
137. addi $a0,$zero,10
138. addi $v0,$zero,11
139. syscall
140. addi $sp,$fp,76
141. lw $fp,-68($sp)
142. lw $ra,-72($sp)
143. lw $s0,0($sp)
144. lw $s1,-4($sp)
145. lw $s2,-8($sp)
146. lw $s3,-12($sp)
147. lw $s4,-16($sp)
148. lw $s5,-20($sp)
149. lw $s6,-24($sp)
150. lw $s7,-28($sp)
151. lw $t4,-32($sp)
152. lw $t5,-36($sp)
153. lw $t6,-40($sp)
154. lw $t7,-44($sp)
155. lw $t8,-48($sp)
156. lw $t9,-52($sp)
157. lw $a1,-56($sp)
158. lw $a2,-60($sp)
159. lw $a3,-64($sp)
160. jr $ra
161. relation:
162. sw $ra,4($sp)
163. addi $sp,$sp,-20
164. lw $t0,-0($fp)
165. addi $s2,$t0,0
166. lw $t0,-4($fp)
167. addi $s1,$t0,0
168. addi $s4,$zero,0
169. addi $t0,$zero,0
170. sw $t0,-8($fp)
171. addi $s3,$zero,1
172. addi $t0,$zero,1
173. sw $t0,-12($fp)
174. sub $t2,$s2,$s1
175. bgtz $t2,label1
176. addi $s0,$s4,0
177. .data
178. string1: .asciiz "input3 is smaller OR equal than input4"
179. .text
180. la $a0,string1
181. addi $v0,$zero,4
182. syscall
183. addi $a0,$zero,10
184. addi $v0,$zero,11
185. syscall
186. label1:
187. sub $t2,$s2,$s1
188. bltz $t2,label2
189. addi $s0,$s3,0
190. .data
191. string2: .asciiz "input3 is bigger OR equal than input4"
192. .text
193. la $a0,string2
194. addi $v0,$zero,4
195. syscall
196. addi $a0,$zero,10
197. addi $v0,$zero,11
198. syscall
199. label2:
200. beq $s2,$s1,label3
201. label3:
202. bne $s2,$s1,label4
203. .data
204. string3: .asciiz "input3 is equal to input4"
205. .text
206. la $a0,string3
207. addi $v0,$zero,4
208. syscall
209. addi $a0,$zero,10
210. addi $v0,$zero,11
211. syscall
212. label4:
213. addi $t1,$zero,0
214. bne $s0,$t1,label6
215. sub $t2,$s2,$s1
216. bgez $t2,label7
217. .data
218. string4: .asciiz "input3 is smaller than input4"
219. .text
220. la $a0,string4
221. addi $v0,$zero,4
222. syscall
223. addi $a0,$zero,10
224. addi $v0,$zero,11
225. syscall
226. label7:
227. j label5
228. label6:
229. addi $t1,$zero,1
230. bne $s0,$t1,label8
231. sub $t2,$s2,$s1
232. blez $t2,label9
233. .data
234. string5: .asciiz "input3 is bigger than input4"
235. .text
236. la $a0,string5
237. addi $v0,$zero,4
238. syscall
239. addi $a0,$zero,10
240. addi $v0,$zero,11
241. syscall
242. label9:
243. j label5
244. label8:
245. label5:
246. addi $sp,$fp,76
247. lw $fp,-68($sp)
248. lw $ra,-72($sp)
249. lw $s0,0($sp)
250. lw $s1,-4($sp)
251. lw $s2,-8($sp)
252. lw $s3,-12($sp)
253. lw $s4,-16($sp)
254. lw $s5,-20($sp)
255. lw $s6,-24($sp)
256. lw $s7,-28($sp)
257. lw $t4,-32($sp)
258. lw $t5,-36($sp)
259. lw $t6,-40($sp)
260. lw $t7,-44($sp)
261. lw $t8,-48($sp)
262. lw $t9,-52($sp)
263. lw $a1,-56($sp)
264. lw $a2,-60($sp)
265. lw $a3,-64($sp)
266. jr $ra
267. main:
268. addi $sp,$sp,-104
269. addi $v0,$zero,5
270. syscall
271. sw $v0,-0($fp)
272. addi $v0,$zero,5
273. syscall
274. sw $v0,-4($fp)
275. addi $v0,$zero,5
276. syscall
277. sw $v0,-8($fp)
278. addi $v0,$zero,5
279. syscall
280. sw $v0,-12($fp)
281. addi $t0,$zero,0
282. addi $t1,$fp,-16
283. sw $t0,0($t1)
284. lw $t0,-16($fp)
285. la $t1,index
286. sw $t0,0($t1)
287. sw $s0,0($sp)
288. sw $s1,-4($sp)
289. sw $s2,-8($sp)
290. sw $s3,-12($sp)
291. sw $s4,-16($sp)
292. sw $s5,-20($sp)
293. sw $s6,-24($sp)
294. sw $s7,-28($sp)
295. sw $t4,-32($sp)
296. sw $t5,-36($sp)
297. sw $t6,-40($sp)
298. sw $t7,-44($sp)
299. sw $t8,-48($sp)
300. sw $t9,-52($sp)
301. sw $a1,-56($sp)
302. sw $a2,-60($sp)
303. sw $a3,-64($sp)
304. sw $fp,-68($sp)
305. sw $fp,-68($sp)
306. addi $sp,$sp,-76
307. lw $t0,-0($fp)
308. sw $t0,0($sp)
309. lw $t0,-4($fp)
310. sw $t0,-4($sp)
311. addi $fp,$sp,0
312. jal find\_bigger
313. addi $t0,$fp,-20
314. sw $v0,0($t0)
315. lw $t0,-20($fp)
316. la $t1,bigger\_input
317. sw $t0,0($t1)
318. sw $s0,0($sp)
319. sw $s1,-4($sp)
320. sw $s2,-8($sp)
321. sw $s3,-12($sp)
322. sw $s4,-16($sp)
323. sw $s5,-20($sp)
324. sw $s6,-24($sp)
325. sw $s7,-28($sp)
326. sw $t4,-32($sp)
327. sw $t5,-36($sp)
328. sw $t6,-40($sp)
329. sw $t7,-44($sp)
330. sw $t8,-48($sp)
331. sw $t9,-52($sp)
332. sw $a1,-56($sp)
333. sw $a2,-60($sp)
334. sw $a3,-64($sp)
335. sw $fp,-68($sp)
336. sw $fp,-68($sp)
337. addi $sp,$sp,-76
338. addi $fp,$sp,0
339. jal print\_bigger
340. sw $s0,0($sp)
341. sw $s1,-4($sp)
342. sw $s2,-8($sp)
343. sw $s3,-12($sp)
344. sw $s4,-16($sp)
345. sw $s5,-20($sp)
346. sw $s6,-24($sp)
347. sw $s7,-28($sp)
348. sw $t4,-32($sp)
349. sw $t5,-36($sp)
350. sw $t6,-40($sp)
351. sw $t7,-44($sp)
352. sw $t8,-48($sp)
353. sw $t9,-52($sp)
354. sw $a1,-56($sp)
355. sw $a2,-60($sp)
356. sw $a3,-64($sp)
357. sw $fp,-68($sp)
358. sw $fp,-68($sp)
359. addi $sp,$sp,-76
360. lw $t0,-8($fp)
361. sw $t0,0($sp)
362. lw $t0,-12($fp)
363. sw $t0,-4($sp)
364. addi $fp,$sp,0
365. jal relation
366. addi $t0,$zero,0
367. lw $t1,-8($fp)
368. sub $t3,$t0,$t1
369. sw $t3,-24($fp)
370. addi $t0,$zero,-1
371. addi $t1,$fp,-28
372. sw $t0,0($t1)
373. lw $t0,-8($fp)
374. lw $t1,-28($fp)
375. div $t0,$t1
376. mflo $t3
377. sw $t3,-32($fp)
378. lw $t0,-12($fp)
379. lw $t1,-32($fp)
380. mult $t0,$t1
381. mflo $t3
382. sw $t3,-36($fp)
383. addi $t0,$zero,97
384. addi $t1,$fp,-40
385. sw $t0,0($t1)
386. lw $t0,-36($fp)
387. lw $t1,-40($fp)
388. mult $t0,$t1
389. mflo $t3
390. sw $t3,-44($fp)
391. lw $t0,-24($fp)
392. lw $t1,-44($fp)
393. add $t3,$t0,$t1
394. sw $t3,-48($fp)
395. sw $s0,0($sp)
396. sw $s1,-4($sp)
397. sw $s2,-8($sp)
398. sw $s3,-12($sp)
399. sw $s4,-16($sp)
400. sw $s5,-20($sp)
401. sw $s6,-24($sp)
402. sw $s7,-28($sp)
403. sw $t4,-32($sp)
404. sw $t5,-36($sp)
405. sw $t6,-40($sp)
406. sw $t7,-44($sp)
407. sw $t8,-48($sp)
408. sw $t9,-52($sp)
409. sw $a1,-56($sp)
410. sw $a2,-60($sp)
411. sw $a3,-64($sp)
412. sw $fp,-68($sp)
413. sw $fp,-68($sp)
414. addi $sp,$sp,-76
415. lw $t0,-8($fp)
416. sw $t0,0($sp)
417. lw $t0,-12($fp)
418. sw $t0,-4($sp)
419. addi $fp,$sp,0
420. jal find\_bigger
421. addi $t0,$fp,-52
422. sw $v0,0($t0)
423. addi $t0,$zero,7
424. addi $t1,$fp,-56
425. sw $t0,0($t1)
426. lw $t0,-52($fp)
427. lw $t1,-56($fp)
428. mult $t0,$t1
429. mflo $t3
430. sw $t3,-60($fp)
431. lw $t0,-48($fp)
432. lw $t1,-60($fp)
433. add $t3,$t0,$t1
434. sw $t3,-64($fp)
435. lw $t0,-64($fp)
436. addi $a0,$t0,0
437. addi $v0,$zero,1
438. syscall
439. addi $a0,$zero,10
440. addi $v0,$zero,11
441. syscall
442. label10:
443. addi $t0,$zero,2
444. addi $t1,$fp,-68
445. sw $t0,0($t1)
446. la $t0,index
447. lw $t0,0($t0)
448. lw $t1,-68($fp)
449. mult $t0,$t1
450. mflo $t3
451. sw $t3,-72($fp)
452. addi $t0,$zero,1
453. addi $t1,$fp,-76
454. sw $t0,0($t1)
455. lw $t0,-72($fp)
456. lw $t1,-76($fp)
457. add $t3,$t0,$t1
458. sw $t3,-80($fp)
459. la $t0,index
460. lw $t0,0($t0)
461. addi $t1,$zero,4
462. mult $t0,$t1
463. mflo $t0
464. la $t1,var\_arr
465. add $t0,$t1,$t0
466. lw $t1,,-80($fp)
467. sw $t1,0($t0)
468. la $t0,con\_ch4
469. lw $t0,0($t0)
470. la $t1,index
471. lw $t1,0($t1)
472. add $t3,$t0,$t1
473. sw $t3,-84($fp)
474. la $t0,index
475. lw $t0,0($t0)
476. addi $t1,$zero,4
477. mult $t0,$t1
478. mflo $t0
479. la $t1,var\_arr\_ch
480. add $t0,$t1,$t0
481. lw $t1,,-84($fp)
482. sw $t1,0($t0)
483. la $t0,index
484. lw $t0,0($t0)
485. addi $t1,$zero,4
486. mult $t0,$t1
487. mflo $t0
488. la $t1,var\_arr
489. add $t0,$t1,$t0
490. lw $t0,0($t0)
491. sw $t0,-88($fp)
492. lw $t0,-88($fp)
493. addi $a0,$t0,0
494. addi $v0,$zero,1
495. syscall
496. addi $a0,$zero,10
497. addi $v0,$zero,11
498. syscall
499. la $t0,index
500. lw $t0,0($t0)
501. addi $t1,$zero,4
502. mult $t0,$t1
503. mflo $t0
504. la $t1,var\_arr\_ch
505. add $t0,$t1,$t0
506. lw $t0,0($t0)
507. sw $t0,-92($fp)
508. lw $t0,-92($fp)
509. addi $a0,$t0,0
510. addi $v0,$zero,11
511. syscall
512. addi $a0,$zero,10
513. addi $v0,$zero,11
514. syscall
515. addi $t0,$zero,1
516. addi $t1,$fp,-96
517. sw $t0,0($t1)
518. la $t0,index
519. lw $t0,0($t0)
520. lw $t1,-96($fp)
521. add $t3,$t0,$t1
522. sw $t3,-100($fp)
523. lw $t0,-100($fp)
524. la $t1,index
525. sw $t0,0($t1)
526. la $t0,index
527. lw $t0,0($t0)
528. la $t1,con\_int4
529. lw $t1,0($t1)
530. sub $t2,$t0,$t1
531. bltz $t2,label10
532. EXIT:

测试程序的样例输入为：

测试一：

输入：2 5

1 1

输出：The bigger number is 5

input3 is smaller OR equal than input4

input3 is bigger OR equal than input4

input3 is equal to input4

-91

1

a

3

b

5

c

7

d

9

e

11

f

13

g

15

h

17

i

19

j

测试二：

输入：2 2

5 1

输出：The bigger number is 2

input3 is bigger OR equal than input4

input3 is bigger than input4

-455

1

a

3

b

5

c

7

d

9

e

11

f

13

g

15

h

17

i

19

j

测试三：

输入：6 1

1 5

输出：The bigger number is 6

input3 is smaller OR equal than input4

input3 is smaller than input4

-451

1

a

3

b

5

c

7

d

9

e

11

f

13

g

15

h

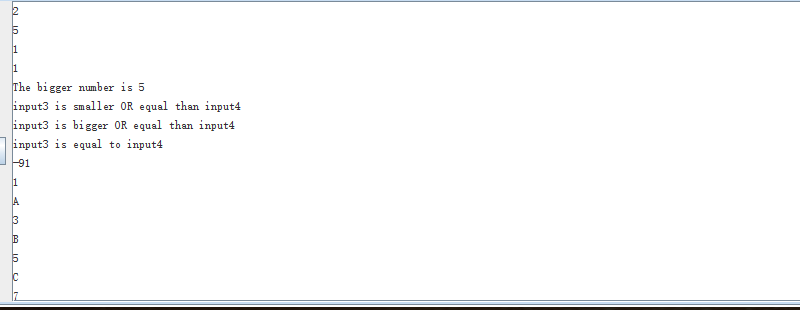
17

i

19

J

利用mars运行：



符合预期，另外两个测试同样符合预期，说明已经能保证初步的正确性。