# آزمون نرم‌افزار

## پروژه شماره ۳

مرتضی نوری (۸۱۰۱۹۸۴۸۱)

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① List<Enrollment RuleViolation> violations = new ArrayList<>();

② int i=0;

③ i > sections.size()

i < sections.size()

return violations; ⑯

④ Section S1 = Sections.get(i)

S1.getExamTime = null ⑤

⑥ int j = i+1;

⑮
Continue;
i++

⑦

j ≥ sections.size()

j < sections.size()

⑭
i++;

⑧ Section S2 = sections.get(j)

⑨

S2.getExamTime = null

⑬
Continue;
j++;

S1 != S2 &&
S1.getExamTime()
.hasTimeConflict(
S2.getExamTime()
)

⑩

⑫

violations.add( new
ExamTimeConflicts(S1,S2));

⑪

j++;
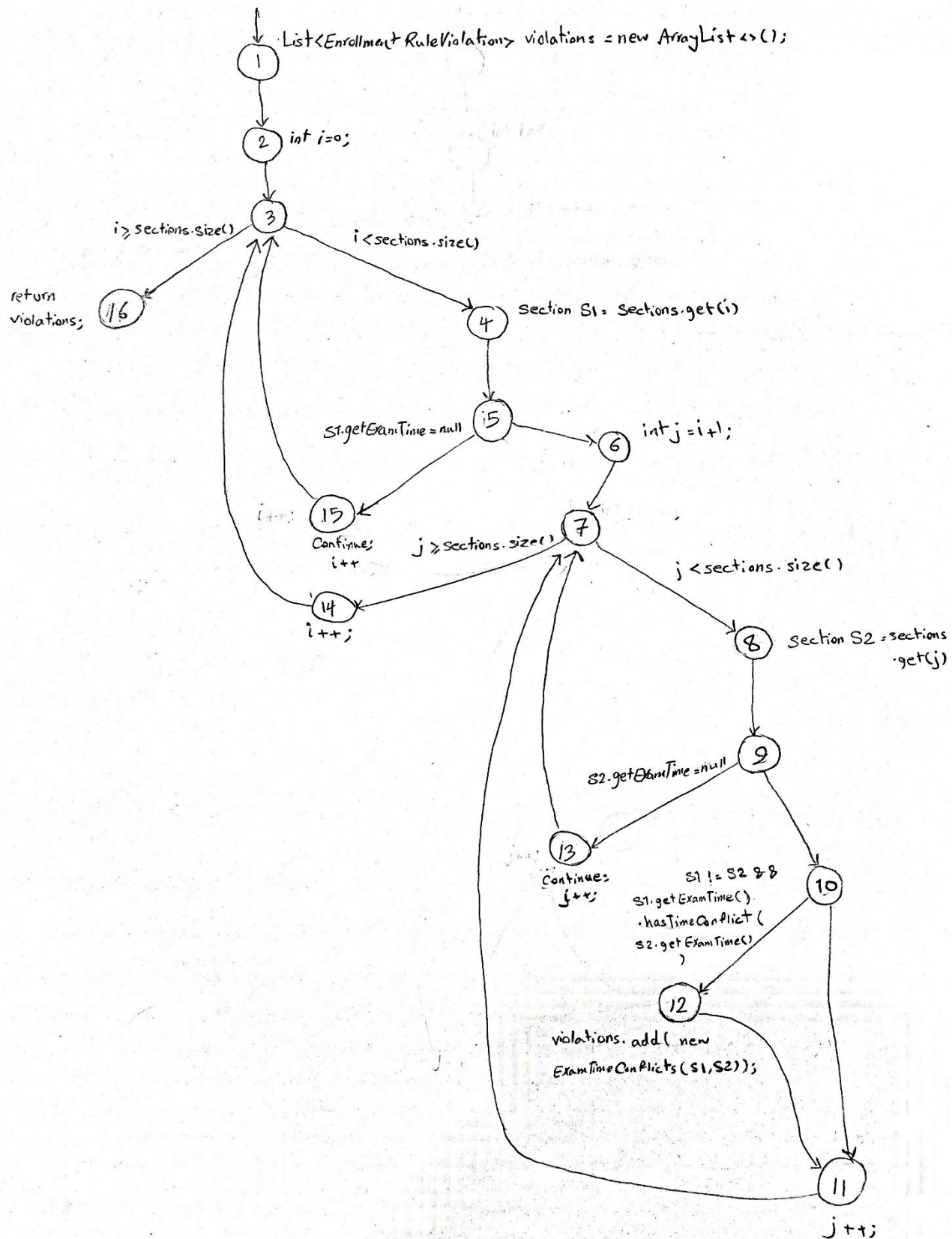
→ Node Coverage :

TR = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16}

Test Paths = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 11, 7, 14, 3, 16], [1, 2, 3, 4, 5, 15, 3, 16],

[1, 2, 3, 4, 5, 6, 7, 8, 9, 13, 7, 14, 3, 16]


→ Edge Coverage :

TR = {(1,2), (2,3), (3,4), (3,16), (4,5), (5,6), (5,15), (6,7), (7,8), (7,14), (8,9), (9,10),

(9,13), (10,11), (10,12), (11,7), (12,11), (13,7), (14,3), (15,3)}

Test Paths = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 11, 7, 14, 3, 16], [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 7, 14, 3, 16],

[1, 2, 3, 4, 5, 15, 3, 16], [1, 2, 3, 4, 5, 6, 7, 8, 9, 13, 7, 14, 3, 16]

Covers {(5,15), (15,3)}          Covers {(9,13), (13,7)}          Covers {(10,11)}

**بخش دوم**

| Node | Definition | Use |
|------|------------|-----|
| 1 | {sections, violation} | |
| 2 | {i} | |
| 3 | | { sections, i} |
| 4 | {s1} | { sections, i} |
| 5 | | {s1} |
| 6 | {j} | {i} |
| 7 | | { sections, j} |
| 8 | {s2} | { sections, j} |
| 9 | | {s2} |
| 10 | | {s1, s2} |
| 11 | | {j} |
| 12 | | {violations, s1, s2} |
| 13 | | {j} |
| 14 | | {i} |
| 15 | | {i} |
| 16 | | {violations} |

| Variable | DU Pairs | DU Paths |
|---|---|---|
| sections | (1,3) | [1,2,3] |
|  | (1,4) | [1,2,3,4] |
|  | (1,7) | [1,2,3,4,5,6,7] |
|  | (1,8) | [1,2,3,4,5,6,7,8] |
|  | (1,12) | [1,2,3,4,5,6,7,8,9,10,12] |
|  | (1,16) | [1,2,3,16] |
| violations | (1,12) | [1,2,3,4,5,6,7,8,9,10,12] |
|  | (1,16) | [1,2,3,16] |
| i | (2,3) | [2,3] |
|  | (2,4) | [2,3,4] |
|  | (2,6) | [2,3,4,5,6] |
|  | (2,13) | [2,3,4,5,6,7,8,9,13] |
|  | (2,14) | [2,3,4,5,6,7,14] |
|  | (2,15) | [2,3,4,5,15] |
| j | (6,7) | [6,7] |
|  | (6,8) | [6,7,8] |
|  | (6,11) | [6,7,8,9,10,11] |
| S1 | (4,10) | [4,5,6,7,8,9,10] |
|  | (4,12) | [4,5,6,7,8,9,10,12] |
| S2 | (8,9) | [8,9] |
|  | (8,10) | [8,9,10] |
|  | (8,12) | [8,9,10,12] |

↳ Prime Path Coverage :

TR =  [1, 2, 3, 16]!
      [1, 2, 3, 4, 5, 15]!
      [1, 2, 3, 4, 5, 6, 7, 14]!
      [1, 2, 3, 4, 5, 6, 7, 8, 9, 13]!
      [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11]!
      [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 11]!
      [3, 4, 5, 15, 3]*
      [3, 4, 5, 6, 7, 14, 3]*
      [4, 5, 15, 3, 4]*
      [4, 5, 6, 7, 14, 3, 4]*
      [4, 5, 15, 3, 16]!
      [4, 5, 6, 7, 14, 3, 16]!
      [5, 15, 3, 4, 5]*
      [5, 6, 7, 14, 3, 4, 5]*
      [5, 15, 3, 16]!
      [5, 6, 7, 14, 3, 16]!
      [6, 7, 14, 3, 4, 5, 6]*
      [6, 7, 14, 3, 4, 5, 15]!
      [7, 14, 3, 4, 5, 6, 7]*
      [7, 8, 9, 13, 7]*
      [7, 8, 9, 10, 11, 7]*
      [7, 8, 9, 10, 12, 11, 7]*
      [8, 9, 13, 7, 8]*
      [8, 9, 10, 11, 7, 8]*
      [8, 9, 10, 12, 11, 7, 8]*
      [8, 9, 13, 7, 14, 3, 16]!
      [8, 9, 13, 7, 14, 3, 4, 5, 6]!
      [8, 9, 13, 7, 14, 3, 4, 5, 15]!
      [8, 9, 10, 11, 7, 14, 3, 16]!      [8, 9, 10, 12, 11, 7, 14, 3, 16]!
      [8, 9, 10, 11, 7, 14, 3, 4, 5, 6]!  [8, 9, 10, 12, 11, 7, 14, 3, 4, 5, 6]!
      [8, 9, 10, 11, 7, 14, 3, 4, 5, 15]! [8, 9, 10, 12, 11, 7, 14, 3, 4, 5, 15]!

      [9, 13, 7, 8, 9]*
      [9, 10, 11, 7, 8, 9]*
      [9, 10, 12, 11, 7, 8, 9]*
      [10, 11, 7, 8, 9, 10]*
      [10, 12, 11, 7, 8, 9, 10]*
      [10, 11, 7, 8, 9, 13]!
      [10, 12, 11, 7, 8, 9, 13]!
      [11, 7, 8, 9, 10, 11]*
      [11, 7, 8, 9, 10, 12, 11]*
      [12, 11, 7, 8, 9, 10, 12]*
      [12, 11, 7, 8, 9, 13]!
      [13, 7, 8, 9, 13]*
      [13, 7, 8, 9, 10, 11]!
      [13, 7, 8, 9, 10, 12, 11]!
      [15, 3, 4, 5, 15]*
      [15, 3, 4, 5, 6, 7, 14]!
      [15, 3, 4, 5, 6, 7, 8, 9, 13]!
      [15, 3, 4, 5, 6, 7, 8, 9, 10, 11]!
      [15, 3, 4, 5, 6, 7, 8, 9, 10, 12, 11]!

[1,2,3,16]

[1,2,3,4,5,6,7,8,9,10,12,11,7,14,3,16]

[1,2,3,4,5,6,7,8,9,10,11,7,14,3,16]

[1,2,3,4,5,15,3,16]

[1,2,3,4,5,6,7,8,9,13,7,14,3,16]

[1,2,3,4,5,15,3,4,5,6,7,8,9,13,7,14,3,16]

[1,2,3,4,5,6,7,8,9,10,11,7,14,3,16]

[1,2,3,4,5,15,3,4,5,6,7,8,9,10,11,7,8,9,13,7,14,3,16]

[1,2,3,4,5,6,7,8,9,10,11,7,8,9,13,7,14,3,4,5,15,3,16]

## بخش سوم

آدرس مخزن شخصی : [github.com/SM2A/Software_Testing_CA3](github.com/SM2A/Software_Testing_CA3)

شناسه کامیت آخرین تغییرات : 22ecf23ea69dc80af6cd22d5579d695b40112b91