Assignment 2

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Review questions

R3.2

The only difference between code 1 and 2 is the use of “if” and “elif” (else if).

Code 1: use the “if” statement two times in a row. Both of these “if” statements will execute no matter if the first one is true or not.

Code 2: Uses an “if” statement first and an “elif” statement second. The “elif” statement will not execute if the if statement is true. So it will only execute if the first “if” statement is false.

This is the difference between the two codes.

R3.6

Input: x

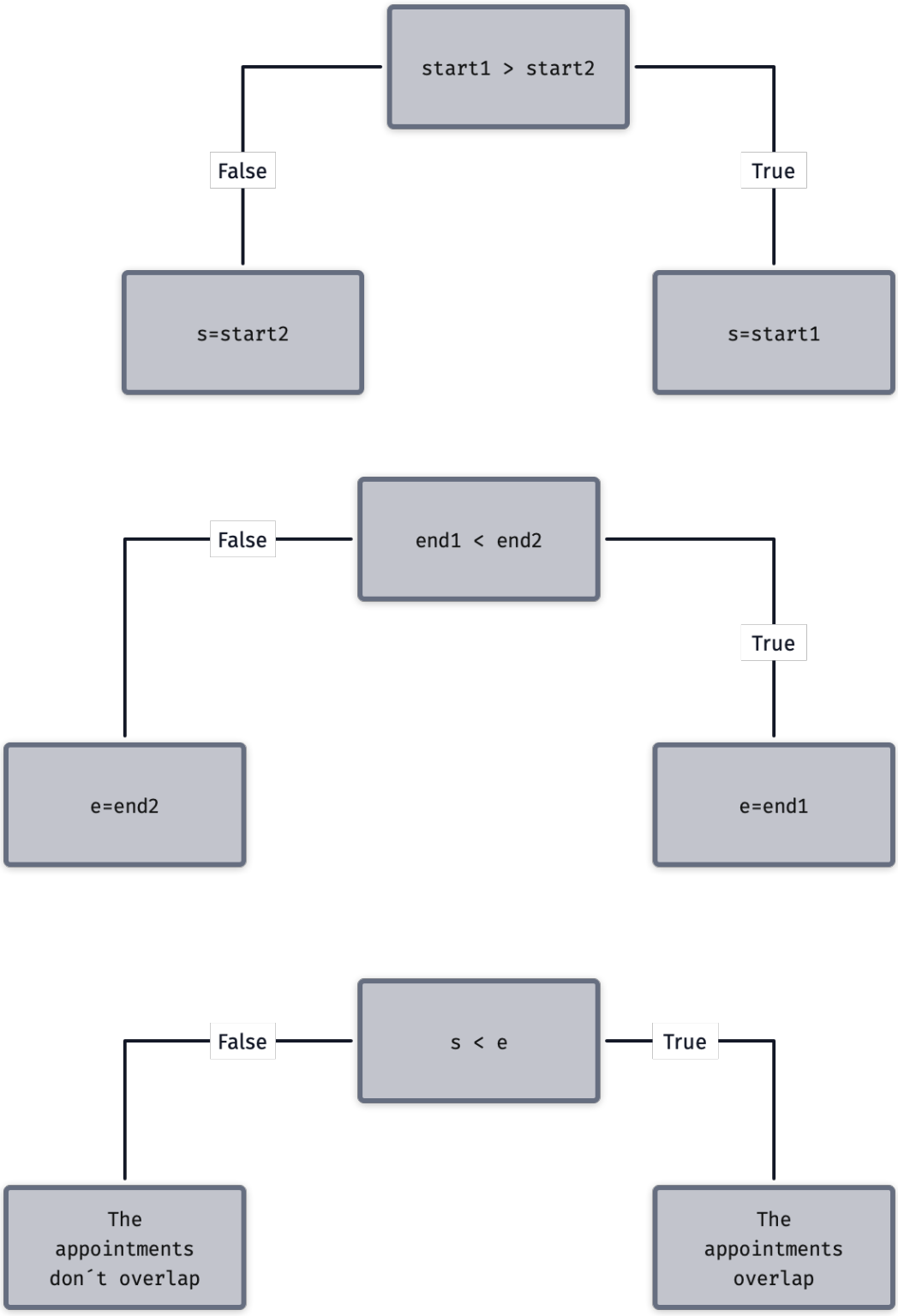
Output: y (absolute value of x)

```
if x >= 0
        y = x
else
    y = x * (-1)
```

R3.11 – Hand trace algorithm

• Start1= 10 • End1 = 12 • Start2 = 11 • End2=13	$First\ condition = start1 > start2 = 10 > 11 = \ FALSE$ $\Rightarrow s = start2 = 11$ Second condition. $end1 < \ end2 \Rightarrow 12 < 13 = TRUE.$ $\Rightarrow e = end1 = 12$ $Conclusion: s < e = 11 < 12 = TRUE$ $\Rightarrow Appointments\ overlap$
• Start1= 10 • End1 = 11 • Start2 = 12 • End2=13	$First\ condition = start1 > start2 = FALSE$ $\Rightarrow s = start2 = 12$ $Second\ condition = end1 < end2 = 11 < 13 = TRUE$ $\Rightarrow e = end1 = 11$ $Conclusion: s < e = 12 < 11 = FALSE$ $\Rightarrow Appointsments\ dont\ overlap$

R3.12 – Flowchart



R3.15

To solve this assignment, we will run a couple of scenarios and check if the code works.

Scenario	Test result

Standard setup with overlap:
`start1 = 12`
`end1 = 14`
`start2 = 13`
`end2 = 15`
	Code results in “Appointments overlap”. Which is correct.

Standard setup without overlap	Code results in “Appointments do not overlap”. Which is correct. Code works.

What if appointmend start and end times are not whole hours? E.g.
`start1 = 1330`
`end1 = 1500`
`start2 = 1530`
`end2 = 1730`
	Code results in “Appointments do not overlap”.
	
	Which is correct. Code works.

With the military system, most people will write 13:30, not 1330.
`start1 = 13:30`
`end1 = 15:00`
`start2 = 15:30`
`end2 = 17:30`
	SyntaxError.
	
	Code does not work.

What if the appointments last over midnight? E.g.
`start1 = 23`
`end1 = 2`
`start2 = 1`
`end2 = 3`
	The code won't work. This will probably not be a problem because these appointments probably are not scheduled that late.
	
	S will obviously be larger than e, the system does not integrate that the clock system resets.

R.4.4

These loops print:

a) Each number from 1 up to and including 9: 1, 2, 3, 4, 5, 6, 7, 8, 9
b) Each number from 1 up and including 9 in an interval of two: 1, 3, 5, 7, 9
c) Each number from 10 up and including 2 in an interval of -1: 10, 9, 8, 7, 6, 5, 4, 3, 2
d) The range function naturally start at 0, so this prints: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
e) If the modulus (%) to 2 == 0, the number is even, therefor this will print: 2, 4, 6, 8