

ordinary question	6 (Form (?? 'q1 "1: String" String)			
	7 (?? 'q2 "2: String" String)			
	8 (~? 'q3 "3= \$1++\$2:" (~ string-append (~> 'q1) (~> 'q2)))			
	9 (?? 'q4 "4: Number" Number)			
computed question	10 (?? 'q5 "5: Number" Number)			
	11 (~? 'q6 "6= \$4 * \$5:" (~ ~ * (~> 'q4) (~> 'q5)))			
	12 (?? 'q7 "7: Boolean" Boolean)			
	13 (?? 'q8 "8: Boolean" Boolean)			
variable name	14 (~? 'q9 "9= \$7 && \$8:" (~ ~ && (~> 'q7) (~> 'q8)))			
	15 (If (~> 'q9)			
	16 (?? 'q10 "10: Number" Number)			
type	17 (~? 'q11 "11= \$6 - \$10:" (~ ~ - (~> 'q6) (~> 'q10)))			
	18 (If (~! #t)			
label shown	19 (?? 'q11 "11 again: Number" Number)			
	20 (If (~> (~> 'q11) (~! 9))			
expression of computation	21 (?? 'q12 "12: Boolean" Boolean))			
	22 (?? 'q13 "13: String" String)			
	23 (?? 'q12 "12 again: Boolean" Boolean)))			

nested group of second group

second group

first group

(a) questionnaire source code

Questionnaire

1: String #f

2: String #f

3= \$1++\$2: #f

4: Number #f

5: Number #f

6= \$4 \* \$5: #f

☐ 7: Boolean

☐ 8: Boolean

☐ 9= \$7 & \$8:

11 again: Number #f

13: String #f

☐ 12 again: Boolean

(b) original GUI, without user input (all values undefined), first and nested group of second group not shown (question 9 & 11 are undefined), the second group is always shown (constant *true*)

Questionnaire

1: String Hello

2: String World

3= \$1++\$2: Hello World

4: Number 23

5: Number 12

6= \$4 \* \$5: 276

☒ 7: Boolean

☒ 8: Boolean

☒ 9= \$7 & \$8:

10: Number #f

11= \$6 - \$10: #f

13: String #f

☐ 12 again: Boolean

(c) after answering questions 1—8, first group shown (computed question 9 evaluates to *true*) shadowing the original question 11 with its computed version

Questionnaire

1: String Hello

2: String World

3= \$1++\$2: Hello World

4: Number 23

5: Number 12

6= \$4 \* \$5: 276

☒ 7: Boolean

☒ 8: Boolean

☒ 9= \$7 & \$8:

10: Number 1

11= \$6 - \$10: 275

☐ 12: Boolean

13: String #f

(d) after answering questions 10, question 11 is defined; its value is  $> 9$  such that the nested group is shown and its question 12 shadows the original version

Questionnaire

1: String Hello

2: String World

3= \$1++\$2: Hello World

4: Number 23

5: Number 12

6= \$4 \* \$5: 276

☒ 7: Boolean

☐ 8: Boolean

☐ 9= \$7 & \$8:

11 again: Number #f

13: String #f

☐ 12 again: Boolean

(e) deselecting question 8 deactivates the first group, such that the original question 11 & 12 are active again