

Re-expressing actions in MobileVisFixer

Supplementary Material to a CHI 2022 paper, "Cicero: A Declarative Grammar for Responsive Visualization"

Cicero expressions for the MobileVisFixer rules

```
1 // For A0--7, we assume specific
  chart size intended for a view
2 // A0&2: decrease X axis scale range
  = chart width
3 { specifier: { role : "view" },
4   action: "modify",
5   option: { width: 375 } }
6 // A1&3: increase X axis scale range
7 { specifier: { role : "view" },
8   action: "modify",
9   option: { width: 1024 } }
10 // A4&6: decrease Y axis scale range
    = chart height
11 { specifier: { role : "view" },
12   action: "modify",
13   option: { height: 200 } }
14
15 // A5&7: increase Y axis scale range
16 { specifier: { role : "view" },
17   action: "modify",
18   option: { height: 600 } }
19
20 // A9: decrease font size
21 { specifier: { role : "text" },
22   action: "modify",
23   option: { fontSize: { prod: 0.8 } } }
24
25 // A10: increase # of axis labels/ticks
26 { specifier: { role : "axis" },
27   action: "add",
28   option: { values : "odd" } }
29
30 // A11: decrease # of axis labels/ticks
31 { specifier: { role : "axis" },
32   action: "remove",
33   option: { values : "even" } }
34
35 // A12: skip, unrecognizable
36
37 // A13: break text line = wrapping text
38 { specifier: { role : "text" },
39   action: "modify",
40   option: {
41     width: { prod: 0.8 },
42     wrap: true } }
43
44 // A14: decrease the X offset min
    = left margin
45 { specifier: { ... },
46   action: "modify",
47   option: { marginLeft: { prod: 0.9 } } }
48
49 // A15: increase the X offset min
50 { specifier: { ... },
51   action: "modify",
52   option: { marginLeft: { prod: 1.1 } } }
53
54 // A16: decrease the X offset max
    = right margin
55 { specifier: { ... },
56   action: "modify",
57   option: { marginRight: { prod: 0.9 } } }
58
59 // A17: increase the X offset max
60 { specifier: { ... },
61   action: "modify",
62   option: { marginRight: { prod: 1.1 } } }
63
64 // A18: decrease the Y offset min
    = top margin
65 { specifier: { ... },
66   action: "modify",
67   option: { marginTop: { prod: 0.9 } } }
68
69 // A19: increase the Y offset min
70 { specifier: { ... },
71   action: "modify",
72   option: { marginTop: { prod: 1.1 } } }
73
74 // A20: decrease the Y offset max
    = bottom margin
75 { specifier: { ... },
76   action: "modify",
77   option: { marginBottom: { prod: 0.9 } } }
78
79 // A21: increase the Y offset max
80 { specifier: { ... },
81   action: "modify",
82   option: { marginBottom: { prod: 1.1 } } }
```

The list of rules supported by MobileVisFixer

A0: decXAxisRangemin
A1: incXAxisRangemin
A2: decXAxisRangemax
A3: incXAxisRangemax
A4: decYAxisRangemin
A5: incYAxisRangemin
A6: decYAxisRangemax
A7: incYAxisRangemax
A8: incFontSize
A9: decFontSize
A10: incTickNumber
A11: decTickNumber
• A12: callVegaLabel
A13: breakTextLine
A14: decXOffsetmin
A15: incXOffsetmin
A16: decXOffsetmax
A17: incXOffsetmax
A18: decYOffsetmin
A19: incYOffsetmin
A20: decYOffsetmax
A21: incYOffsetmax
• A22: changeOffset

- When the meaning of the rule cannot be determined because they are not defined in the paper.

For A14–21, we assume that the specifier of each rule (i.e., the element to transform the offset) can be parameterized within the recommender's pipeline.