

## A better stroop test, in Qualtrics

By Antonio Pagano,

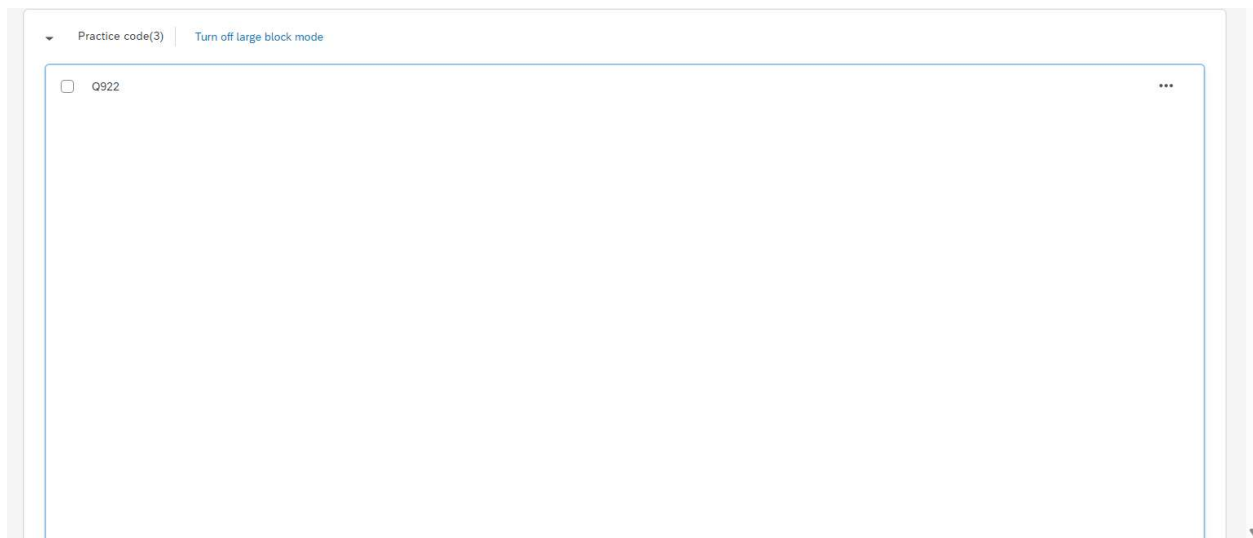
To accompany: Pagano, Antonio, "Cognitive and Social Behavioral Effects of War" (2024). Master's Theses. 1580. <https://repository.usfca.edu/thes/1580>

This guide illustrates how to create an Emotional Stroop test as described here: [The Emotional Stroop Task: Assessing Cognitive Performance under Exposure to Emotional Content - PMC \(nih.gov\)](https://pubmed.ncbi.nlm.nih.gov/41111111/).

The experiment this is accompany to (Pagano, 2024) uses an improved Emotional Stroop test with causal measurements as tested through an experiment. In a difference-in-difference experimental methodology, this tests for changes in executive control as caused by viewing emotionally reactive words.

This guide contains the necessary encoding to create the stroop task itself in Qualtrics. This method is improved on other methods as it allows for multiple

1. First, create a block to contain the encoding for the words the subject will see on the stroop test. These words can be anything relevant. For control trials, use emotionally neutral shapes intermixed with colors.
  - (1) Create a large empty question to hide the text below it.



- (2) Create the lists of the words that will flash on the screen. I created around 90 iterations of the words to last the subject 45 seconds. You have to create questions with response options that are the words you want to use. Name them sequentially. You need a list for the shapes or emotional words, a list for the color words you want to show, and a list for the numerical color encoding of each of the texts.

☐ Q923  
PracticeWord1  
square, circle, triangle, rectangle, pentagon, hexagon, heptagon, octagon, oval, rhombus, sphere,...

☐ Q1063  
PracticeWord2  
square, circle, triangle, rectangle, pentagon, hexagon, heptagon, octagon, oval, rhombus, sphere,...

☐ Q1064  
PracticeWord3  
square, circle, triangle, rectangle, pentagon, hexagon, heptagon, octagon, oval, rhombus, sphere,...

☐ Q1065  
PracticeWord4  
square, circle, triangle, rectangle, pentagon, hexagon, heptagon, octagon, oval, rhombus, sphere,...

☐ Q958  
PracticeColor1  
red, yellow, green, blue

☐ Q959  
PracticeColor2  
red, yellow, green, blue

☐ Q960  
PracticeColor3  
red, yellow, green, blue

☐ Q961  
PracticeColor4  
red, yellow, green, blue

☐ Q993  
PracticeWordCode1  
#FF0000, #FFFF00, #00FF00, #0000FF

☐ Q994  
PracticeWordCode2  
#FF0000, #FFFF00, #00FF00, #0000FF

☐ Q995  
PracticeWordCode3  
#FF0000, #FFFF00, #00FF00, #0000FF

☐ Q996  
PracticeWordCode4  
#FF0000, #FFFF00, #00FF00, #0000FF

☐ Q1028  
PracticeColorCode1  
#FF0000, #FFFF00, #00FF00, #0000FF

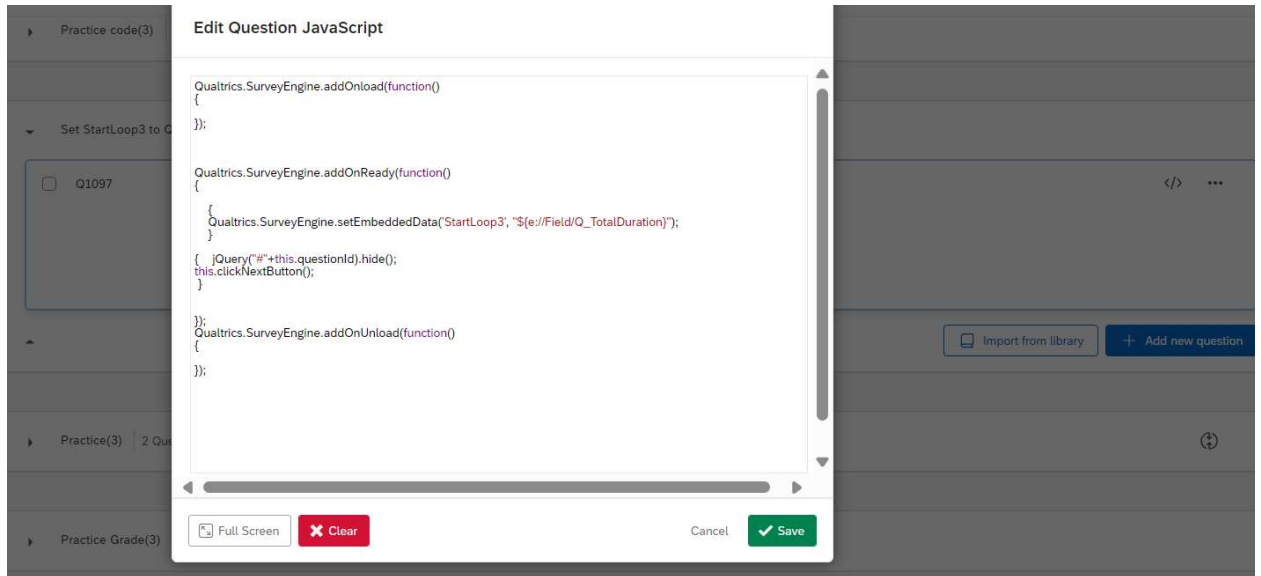
☐ Q1029  
PracticeColorCode2  
#FF0000, #FFFF00, #00FF00, #0000FF

☐ Q1030  
PracticeColorCode3  
#FF0000, #FFFF00, #00FF00, #0000FF

☐ Q1031  
PracticeColorCode4  
#FF0000, #FFFF00, #00FF00, #0000FF

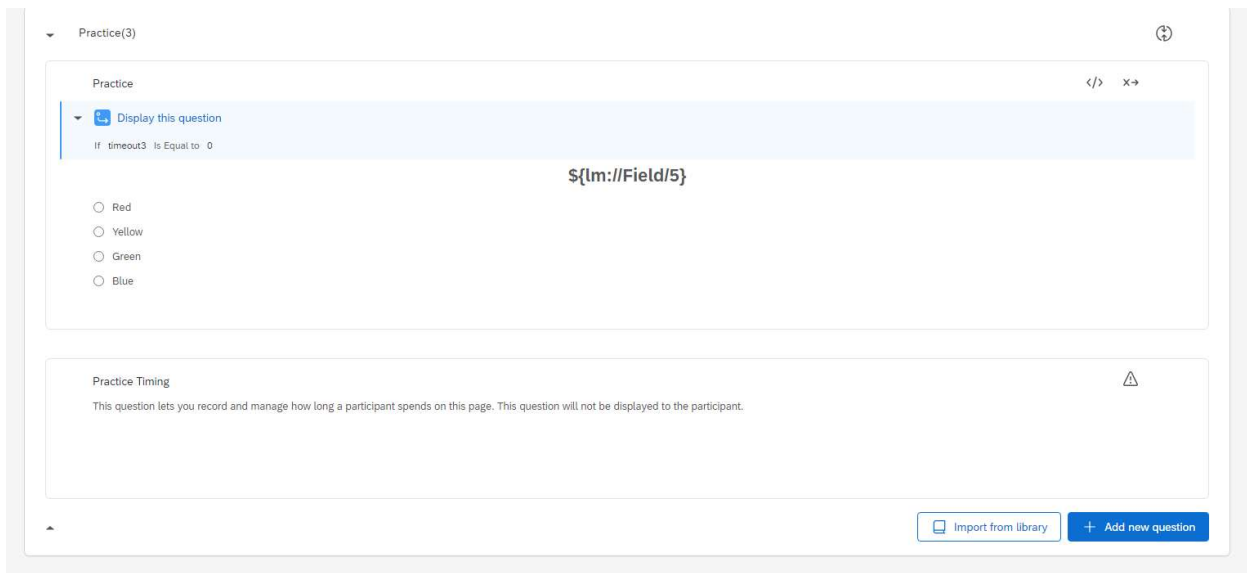
Set them to only display one question randomly

- Now, in a new blank block, set a variable for the start of the loop to track the time the loop was started in the game:

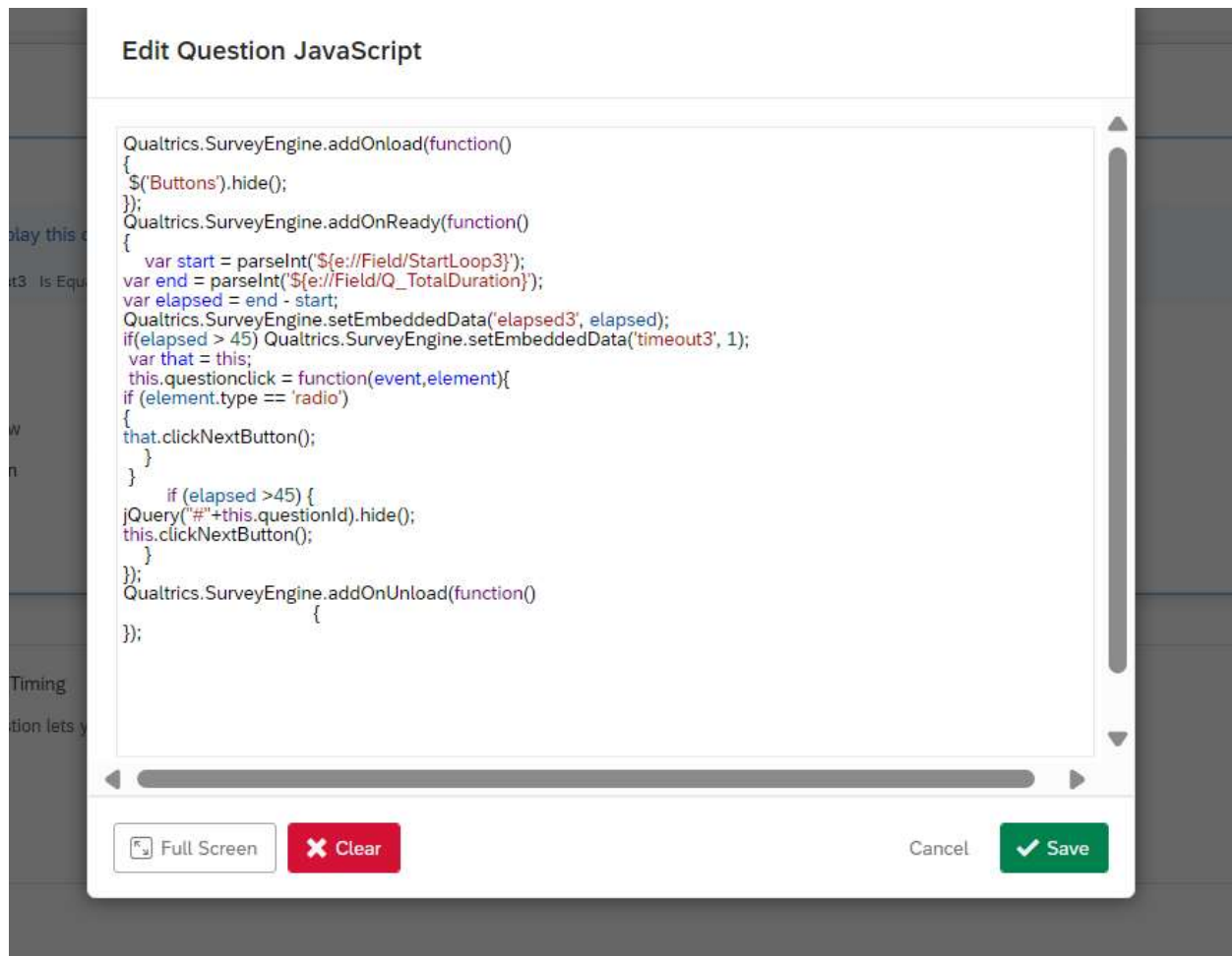


3. Now create the game the user will play.

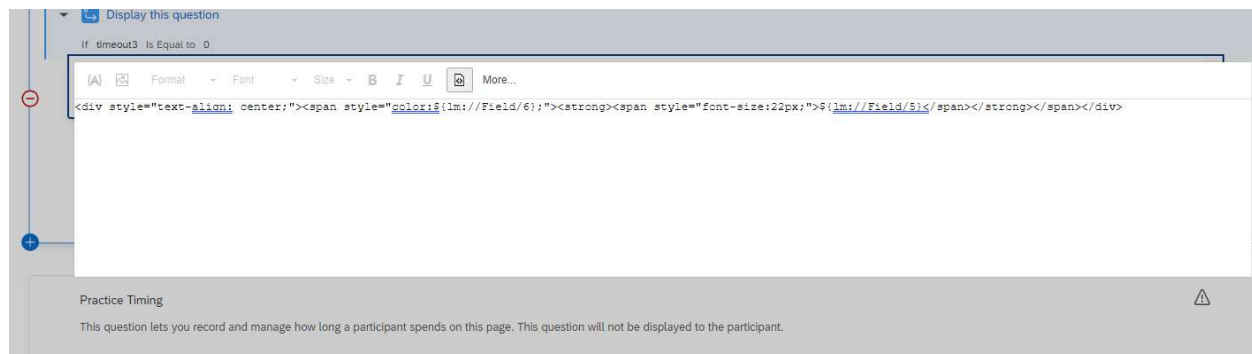
(1) This is how the front end of the block should look:



(2) And the javascript coding looks like this:



(3) Add the following in the content editor:



This code creates the 45 second round.

(4) And now, set the question to loop and merge in any order you want over the randomly displayed encoded response options you created before.

	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	
70					#{q://QID923/ChoiceGroup/DisplayedChoices}	#{q://QID993/ChoiceGroup/DisplayedChoices}	
71					#{q://QID958/ChoiceGroup/DisplayedChoices}	#{q://QID1028/ChoiceGroup/DisplayedChoices}	
72					#{q://QID1063/ChoiceGroup/DisplayedChoices}	#{q://QID994/ChoiceGroup/DisplayedChoices}	
73					#{q://QID959/ChoiceGroup/DisplayedChoices}	#{q://QID1029/ChoiceGroup/DisplayedChoices}	
74					#{q://QID1064/ChoiceGroup/DisplayedChoices}	#{q://QID995/ChoiceGroup/DisplayedChoices}	
75					#{q://QID960/ChoiceGroup/DisplayedChoices}	#{q://QID1030/ChoiceGroup/DisplayedChoices}	
76					#{q://QID1065/ChoiceGroup/DisplayedChoices}	#{q://QID996/ChoiceGroup/DisplayedChoices}	
77					#{q://QID961/ChoiceGroup/DisplayedChoices}	#{q://QID1031/ChoiceGroup/DisplayedChoices}	
78					#{q://QID1066/ChoiceGroup/DisplayedChoices}	#{q://QID997/ChoiceGroup/DisplayedChoices}	
79					#{q://QID962/ChoiceGroup/DisplayedChoices}	#{q://QID1032/ChoiceGroup/DisplayedChoices}	
80					#{q://QID1067/ChoiceGroup/DisplayedChoices}	#{q://QID998/ChoiceGroup/DisplayedChoices}	
81					#{q://QID963/ChoiceGroup/DisplayedChoices}	#{q://QID1033/ChoiceGroup/DisplayedChoices}	
82					#{q://QID1068/ChoiceGroup/DisplayedChoices}	#{q://QID999/ChoiceGroup/DisplayedChoices}	
83					#{q://QID964/ChoiceGroup/DisplayedChoices}	#{q://QID1034/ChoiceGroup/DisplayedChoices}	
84					#{q://QID1069/ChoiceGroup/DisplayedChoices}	#{q://QID1000/ChoiceGroup/DisplayedChoices}	
85					#{q://QID965/ChoiceGroup/DisplayedChoices}	#{q://QID1035/ChoiceGroup/DisplayedChoices}	

#### 4. Grade and show the subject their score:

(1) The front end of this page:

Practice Grade(3)

☐ Q2342

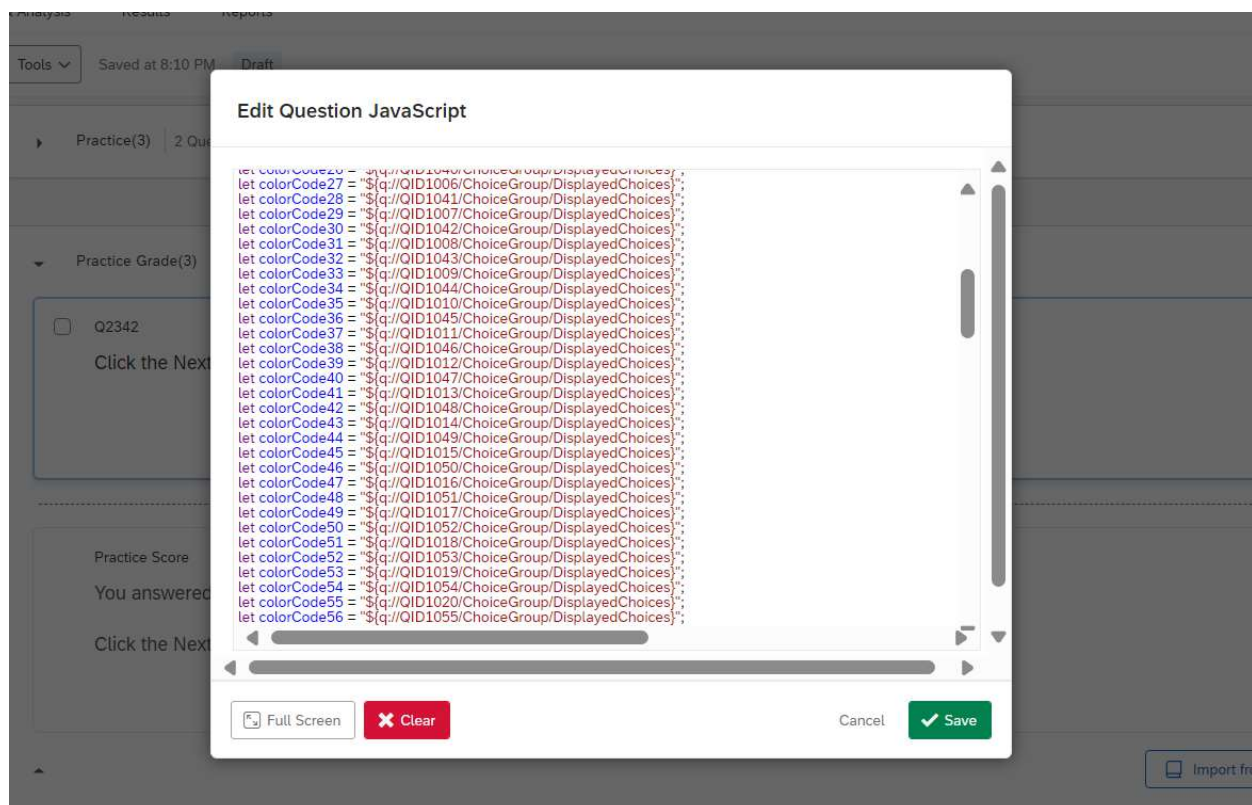
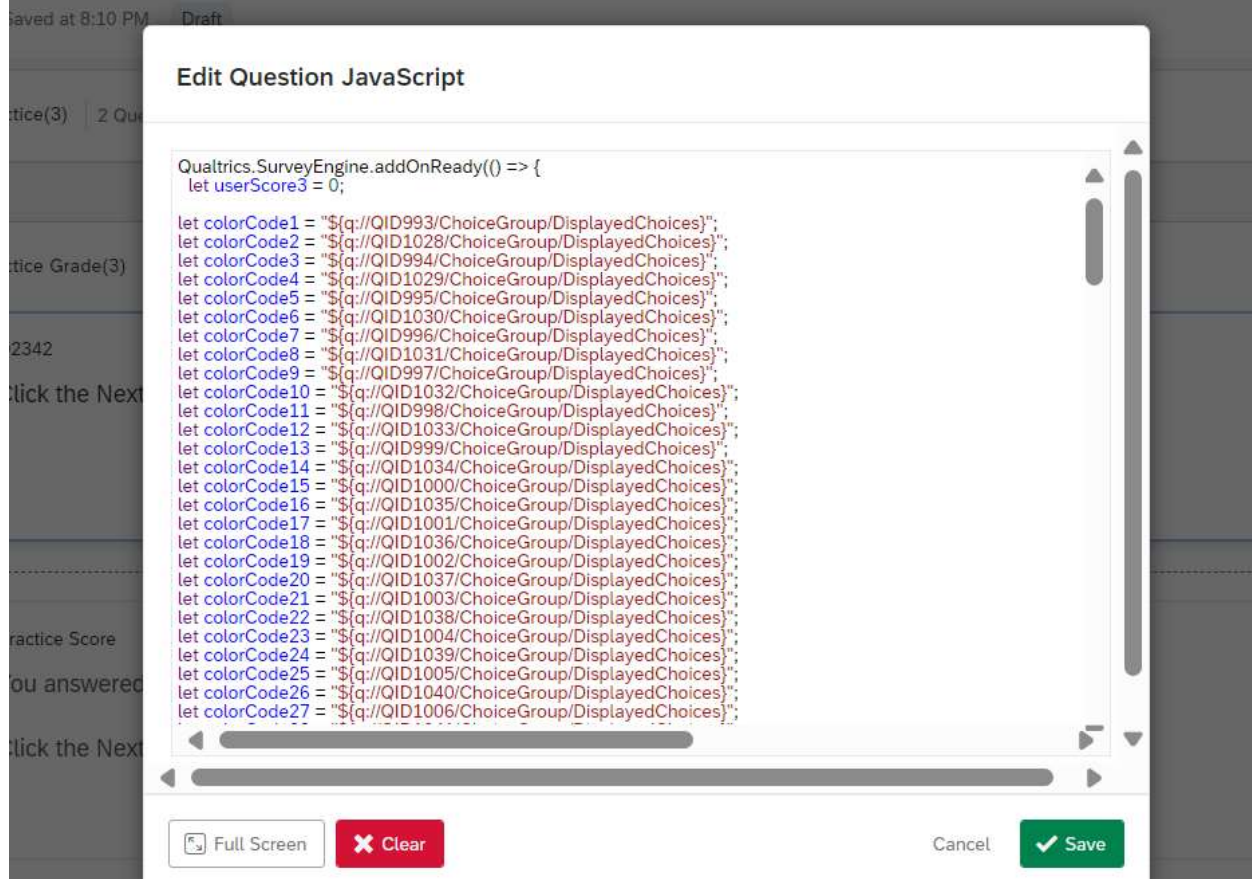
Click the Next arrow to see your score

Page Break

☐ Practice Score

You answered `#{e://Field/Score3}` correct.  
Click the Next arrow to continue

(2) And the javascript encoding:





### Edit Question JavaScript

```
let colorCode55 = "${q://QID1020/ChoiceGroup/DisplayedChoices}";
let colorCode56 = "${q://QID1055/ChoiceGroup/DisplayedChoices}";
let colorCode57 = "${q://QID1021/ChoiceGroup/DisplayedChoices}";
let colorCode58 = "${q://QID1056/ChoiceGroup/DisplayedChoices}";
let colorCode59 = "${q://QID1022/ChoiceGroup/DisplayedChoices}";
let colorCode60 = "${q://QID1057/ChoiceGroup/DisplayedChoices}";
let colorCode61 = "${q://QID1023/ChoiceGroup/DisplayedChoices}";
let colorCode62 = "${q://QID1058/ChoiceGroup/DisplayedChoices}";
let colorCode63 = "${q://QID1024/ChoiceGroup/DisplayedChoices}";
let colorCode64 = "${q://QID1059/ChoiceGroup/DisplayedChoices}";
let colorCode65 = "${q://QID1025/ChoiceGroup/DisplayedChoices}";
let colorCode66 = "${q://QID1060/ChoiceGroup/DisplayedChoices}";
let colorCode67 = "${q://QID1026/ChoiceGroup/DisplayedChoices}";
let colorCode68 = "${q://QID1061/ChoiceGroup/DisplayedChoices}";
let colorCode69 = "${q://QID1027/ChoiceGroup/DisplayedChoices}";
let colorCode70 = "${q://QID1062/ChoiceGroup/DisplayedChoices}";
let colors = [
  colorCode1, colorCode2, colorCode3, colorCode4, colorCode5, colorCode6, colorCode7, colorCode8, colorCode9, colorCode10, colorCode11, colorCode12, colorCode13, colorCode14, colorCode15, colorCode16, colorCode17, colorCode18, colorCode19, colorCode20, colorCode21, colorCode22, colorCode23, colorCode24, colorCode25, colorCode26, colorCode27, colorCode28, colorCode29, colorCode30, colorCode31, colorCode32, colorCode33, colorCode34, colorCode35, colorCode36, colorCode37, colorCode38, colorCode39, colorCode40, colorCode41, colorCode42, colorCode43, colorCode44, colorCode45, colorCode46, colorCode47, colorCode48, colorCode49, colorCode50, colorCode51, colorCode52, colorCode53, colorCode54, colorCode55, colorCode56, colorCode57, colorCode58, colorCode59, colorCode60, colorCode61, colorCode62, colorCode63, colorCode64, colorCode65, colorCode66, colorCode67, colorCode68, colorCode69, colorCode70
];
let choice1 = "${q://70_QID1098/ChoiceGroup/SelectedChoices}";
let choice2 = "${q://71_QID1098/ChoiceGroup/SelectedChoices}";
let choice3 = "${q://72_QID1098/ChoiceGroup/SelectedChoices}";
let choice4 = "${q://73_QID1098/ChoiceGroup/SelectedChoices}";
```

 Full Screen

 Clear

Cancel

 Save



Saved at 8:10 PM Draft

actice(3) 2 Qu

actice Grade(3)

Q2342

Click the Next

Practice Score

You answered

Click the Next

### Edit Question JavaScript

```
let choice2 = "${q://71_QID1098/ChoiceGroup/SelectedChoices}";
let choice3 = "${q://72_QID1098/ChoiceGroup/SelectedChoices}";
let choice4 = "${q://73_QID1098/ChoiceGroup/SelectedChoices}";
let choice5 = "${q://74_QID1098/ChoiceGroup/SelectedChoices}";
let choice6 = "${q://75_QID1098/ChoiceGroup/SelectedChoices}";
let choice7 = "${q://76_QID1098/ChoiceGroup/SelectedChoices}";
let choice8 = "${q://77_QID1098/ChoiceGroup/SelectedChoices}";
let choice9 = "${q://78_QID1098/ChoiceGroup/SelectedChoices}";
let choice10 = "${q://79_QID1098/ChoiceGroup/SelectedChoices}";
let choice11 = "${q://80_QID1098/ChoiceGroup/SelectedChoices}";
let choice12 = "${q://81_QID1098/ChoiceGroup/SelectedChoices}";
let choice13 = "${q://82_QID1098/ChoiceGroup/SelectedChoices}";
let choice14 = "${q://83_QID1098/ChoiceGroup/SelectedChoices}";
let choice15 = "${q://84_QID1098/ChoiceGroup/SelectedChoices}";
let choice16 = "${q://85_QID1098/ChoiceGroup/SelectedChoices}";
let choice17 = "${q://86_QID1098/ChoiceGroup/SelectedChoices}";
let choice18 = "${q://87_QID1098/ChoiceGroup/SelectedChoices}";
let choice19 = "${q://88_QID1098/ChoiceGroup/SelectedChoices}";
let choice20 = "${q://89_QID1098/ChoiceGroup/SelectedChoices}";
let choice21 = "${q://90_QID1098/ChoiceGroup/SelectedChoices}";
let choice22 = "${q://91_QID1098/ChoiceGroup/SelectedChoices}";
let choice23 = "${q://92_QID1098/ChoiceGroup/SelectedChoices}";
let choice24 = "${q://93_QID1098/ChoiceGroup/SelectedChoices}";
let choice25 = "${q://94_QID1098/ChoiceGroup/SelectedChoices}";
let choice26 = "${q://95_QID1098/ChoiceGroup/SelectedChoices}";
let choice27 = "${q://96_QID1098/ChoiceGroup/SelectedChoices}";
let choice28 = "${q://97_QID1098/ChoiceGroup/SelectedChoices}";
let choice29 = "${q://98_QID1098/ChoiceGroup/SelectedChoices}";
let choice30 = "${q://99_QID1098/ChoiceGroup/SelectedChoices}";
let choice31 = "${q://100_QID1098/ChoiceGroup/SelectedChoices}";
let choice32 = "${q://101_QID1098/ChoiceGroup/SelectedChoices}";
```

 Full Screen

 Clear

Cancel

 Save

Results Reports

ved at 8:10 PM Draft

ce(3) 2 Qu

ce Grade(3)

342

ick the Next

actice Score

u answered

ick the Next

### Edit Question JavaScript

```
let choice30 = "${q://99_QID1098/ChoiceGroup/SelectedChoices}";  
let choice31 = "${q://100_QID1098/ChoiceGroup/SelectedChoices}";  
let choice32 = "${q://101_QID1098/ChoiceGroup/SelectedChoices}";  
let choice33 = "${q://102_QID1098/ChoiceGroup/SelectedChoices}";  
let choice34 = "${q://103_QID1098/ChoiceGroup/SelectedChoices}";  
let choice35 = "${q://104_QID1098/ChoiceGroup/SelectedChoices}";  
let choice36 = "${q://105_QID1098/ChoiceGroup/SelectedChoices}";  
let choice37 = "${q://106_QID1098/ChoiceGroup/SelectedChoices}";  
let choice38 = "${q://107_QID1098/ChoiceGroup/SelectedChoices}";  
let choice39 = "${q://108_QID1098/ChoiceGroup/SelectedChoices}";  
let choice40 = "${q://109_QID1098/ChoiceGroup/SelectedChoices}";  
let choice41 = "${q://110_QID1098/ChoiceGroup/SelectedChoices}";  
let choice42 = "${q://111_QID1098/ChoiceGroup/SelectedChoices}";  
let choice43 = "${q://112_QID1098/ChoiceGroup/SelectedChoices}";  
let choice44 = "${q://113_QID1098/ChoiceGroup/SelectedChoices}";  
let choice45 = "${q://114_QID1098/ChoiceGroup/SelectedChoices}";  
let choice46 = "${q://115_QID1098/ChoiceGroup/SelectedChoices}";  
let choice47 = "${q://116_QID1098/ChoiceGroup/SelectedChoices}";  
let choice48 = "${q://117_QID1098/ChoiceGroup/SelectedChoices}";  
let choice49 = "${q://118_QID1098/ChoiceGroup/SelectedChoices}";  
let choice50 = "${q://119_QID1098/ChoiceGroup/SelectedChoices}";  
let choice51 = "${q://120_QID1098/ChoiceGroup/SelectedChoices}";  
let choice52 = "${q://121_QID1098/ChoiceGroup/SelectedChoices}";  
let choice53 = "${q://122_QID1098/ChoiceGroup/SelectedChoices}";  
let choice54 = "${q://123_QID1098/ChoiceGroup/SelectedChoices}";  
let choice55 = "${q://124_QID1098/ChoiceGroup/SelectedChoices}";  
let choice56 = "${q://125_QID1098/ChoiceGroup/SelectedChoices}";  
let choice57 = "${q://126_QID1098/ChoiceGroup/SelectedChoices}";  
let choice58 = "${q://127_QID1098/ChoiceGroup/SelectedChoices}";  
let choice59 = "${q://128_QID1098/ChoiceGroup/SelectedChoices}";  
let choice60 = "${q://129_QID1098/ChoiceGroup/SelectedChoices}";
```

 Full Screen

 Clear

Cancel

 Save

### Edit Question JavaScript

```
let choice60 = "${q}/129_QID1098/ChoiceGroup/SelectedChoices";
let choice61 = "${q}/130_QID1098/ChoiceGroup/SelectedChoices";
let choice62 = "${q}/131_QID1098/ChoiceGroup/SelectedChoices";
let choice63 = "${q}/132_QID1098/ChoiceGroup/SelectedChoices";
let choice64 = "${q}/133_QID1098/ChoiceGroup/SelectedChoices";
let choice65 = "${q}/134_QID1098/ChoiceGroup/SelectedChoices";
let choice66 = "${q}/135_QID1098/ChoiceGroup/SelectedChoices";
let choice67 = "${q}/136_QID1098/ChoiceGroup/SelectedChoices";
let choice68 = "${q}/137_QID1098/ChoiceGroup/SelectedChoices";
let choice69 = "${q}/138_QID1098/ChoiceGroup/SelectedChoices";
let choice70 = "${q}/139_QID1098/ChoiceGroup/SelectedChoices";
let choices = [choice1, choice2, choice3, choice4, choice5, choice6, choice7, choice8, choice9, choice10,
choice11, choice12, choice13, choice14, choice15, choice16, choice17, choice18, choice19, choice20,
choice21, choice22, choice23, choice24, choice25, choice26, choice27, choice28, choice29, choice30,
choice31, choice32, choice33, choice34, choice35, choice36, choice37, choice38, choice39, choice40,
choice41, choice42, choice43, choice44, choice45, choice46, choice47, choice48, choice49, choice50,
choice51, choice52, choice53, choice54, choice55, choice56, choice57, choice58, choice59, choice60,
choice61, choice62, choice63, choice64, choice65, choice66, choice67, choice68, choice69, choice70];

for (let i = 0; i < choices.length; i++) {
  let choice = choices[i];
  let color = colors[i];

  if (color === "#FF0000" && choice === "червоний" || color === "#FFFF00" && choice === "жовтий" || color ===
  || color === "#FF0000" && choice === "Red" || color === "#FFFF00" && choice === "Yellow" || color === "#00
  {
    userScore3++;
  }
}
```

 Full Screen

 Clear

Cancel

 Save



The screenshot displays the Qualtrics Survey Builder interface for a survey titled "Group: Practice Stroop". The survey structure is as follows:

- Group: Practice Stroop** (Main Group)
  - Show Block: Begin Practice(3)** (1 Question) - Toggle Questions
  - Show Block: Practice code(3)** (141 Questions) - Toggle Questions
  - Set Embedded Data:** (Configuration Panel)
    - Q\_TotalDuration Number**: Value will be set from Panel or URL. Set a Value Now
    - StartLoop3** = 0
    - elapsed3** = 0
    - timeout3** = 0
    - Score3** = 0
    - Add a New Field
  - Show Block: Set StartLoop3 to Q\_TotalDuration** (1 Question) - Toggle Questions
  - Show Block: Practice(3)** (2 Questions) - Toggle Questions
  - Show Block: Practice Grade(3)** (2 Questions) - Toggle Questions

Great! Now you have all the encoding to program your stroop task in Qualtrics! If you have any questions or issues regarding survey creation in Qualtrics please email [aspagano@dons.usfca.edu](mailto:aspagano@dons.usfca.edu)]]du