Gender Gap, Gender Graph

Programming, Creation of Coding Challenge: Theodora S. Tziampazi

For learners over 11 years old and educators

You are the user of this digital tool (bar maker) https://scratch.mit.edu/projects/1147892829 . Do not look inside at the code yet. Click on the green flag and insert data (1-10) that hypothetically represent the number of women in a tech sector/company/organization. Try with some numbers.

- What do you notice?
- Could this be a bug or a decision?
- Either way, how can it be fixed?

Manually (user level):

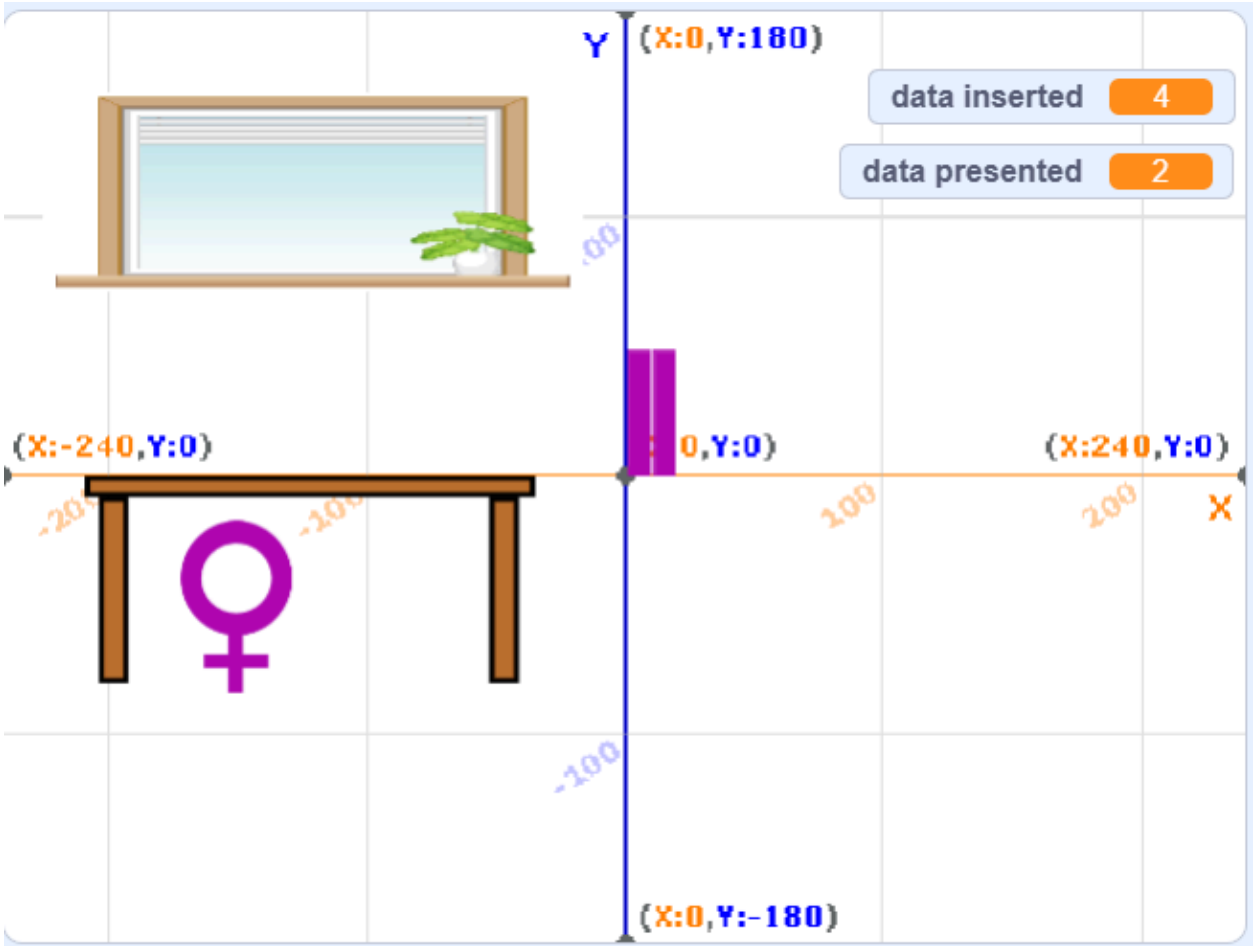
Explore the tool and any draggable sprites.

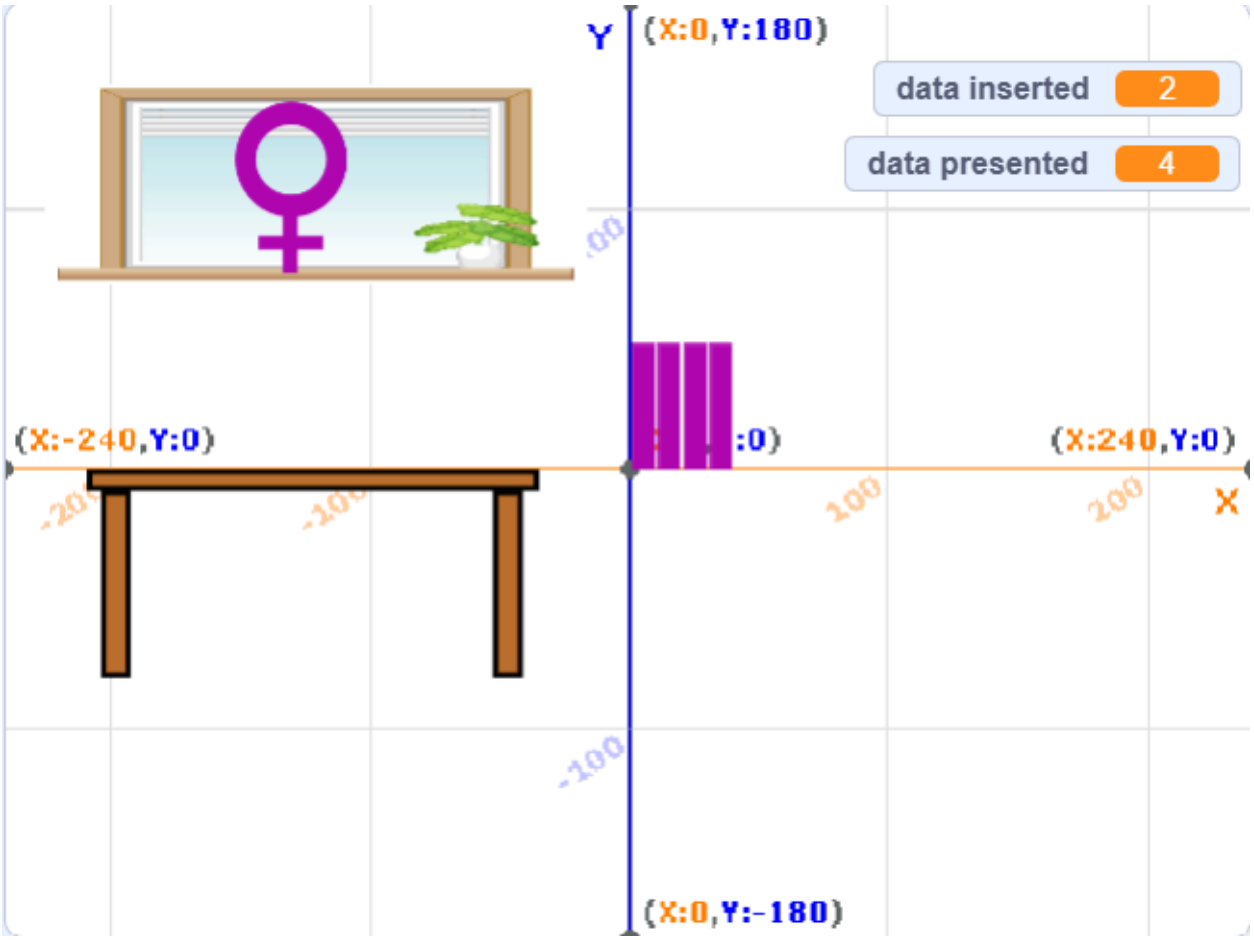
- Is there any position where the problem is solved?
- Is there a position where another unexpected outcome is observed?

Food for thought/Discussion

- What if the number of women in a sector is underestimated?
- What if the number of women in a sector is overestimated?
- What if the number of women in a sector is well-estimated but not balanced in terms of gender gap? What should be done?

Takeaway: How we use the tool (where we situate a component) affects the result.


Y
(X:0,Y:180)
data inserted
4
data presented
2
(X:-240,Y:0)
0,Y:0)
(X:240,Y:0)
100
200
X
-100
(X:0,Y:-180)


Y
(X:0,Y:180)
data inserted
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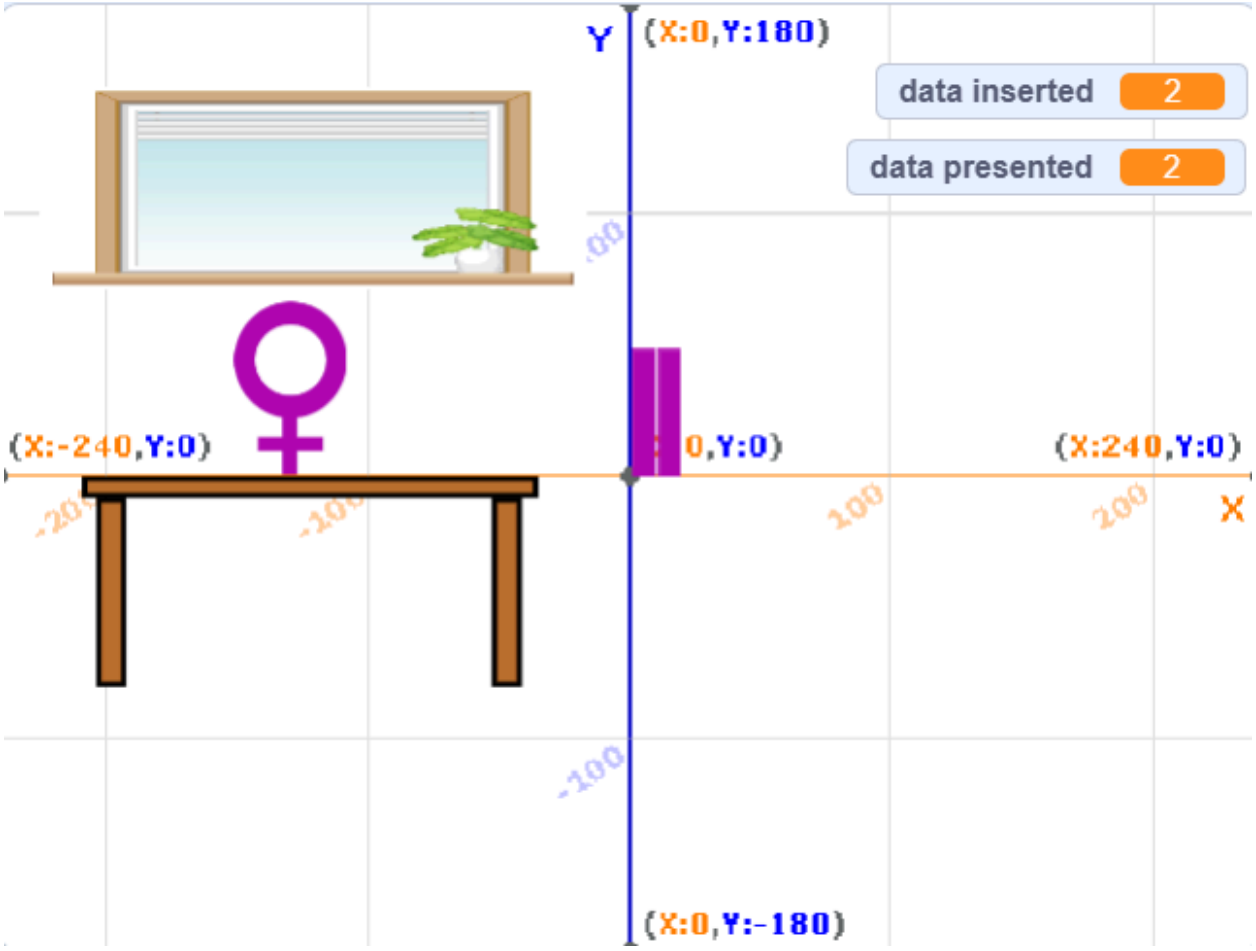
(X:-240,Y:0)
:0)
(X:240,Y:0)
X
100
200
-100
(X:0,Y:-180)



With coding (creator level):

Simple challenge: Hack the code so that the data presented are equal to the data inserted in any case.

Advanced challenge:

Copy the bar sprite and make it blue (stereotypically referred to male). Change the y position so that it is visible and comparable with the purple bar.

Create a male symbol as a new sprite.

Tip: You can download/export both sprites(bar, symbol) from the project given at the end of this section as a solution.

Now hack the codes so that when the user input is x (now given 2 times for each bar), the 2 bar makers are:

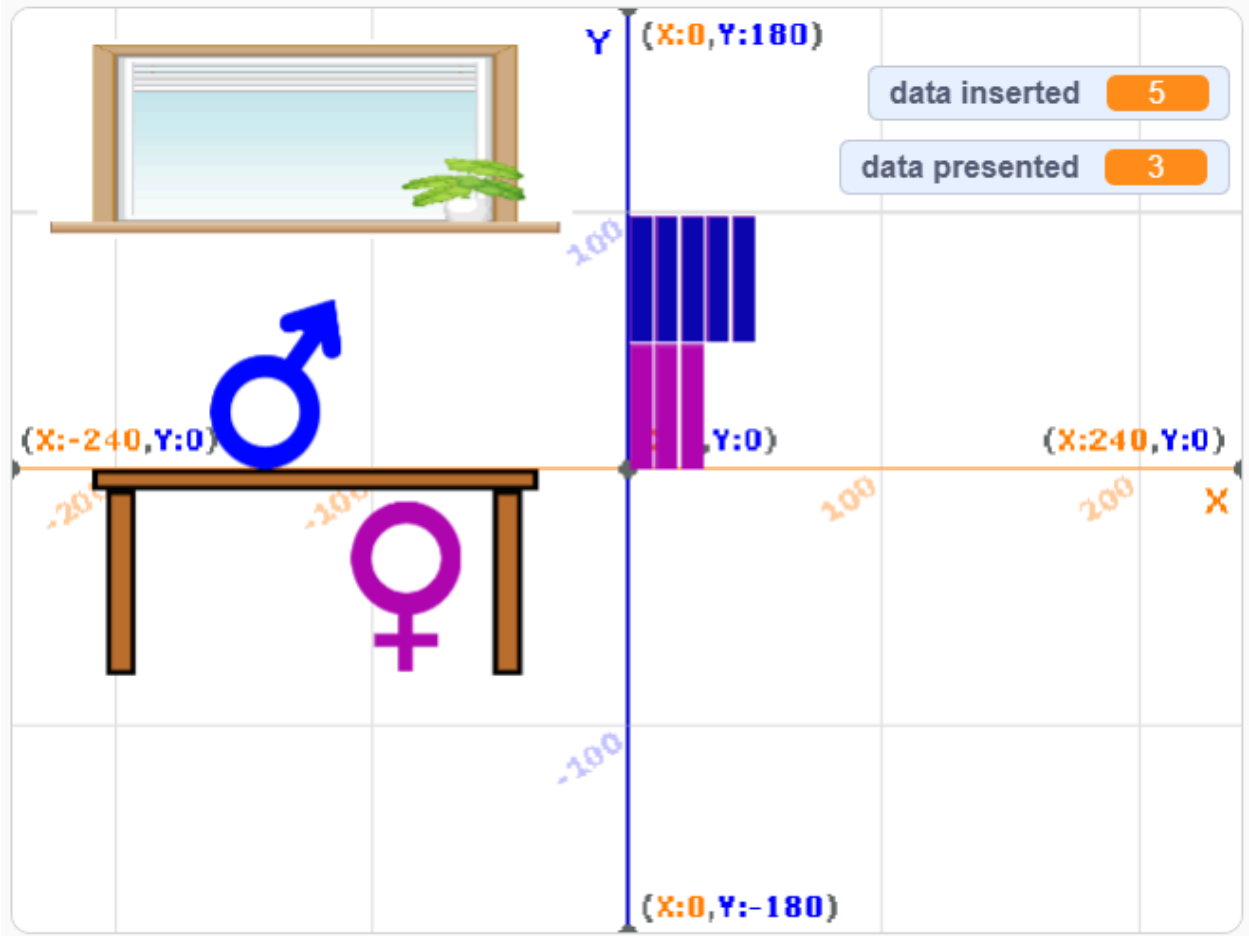
- Fair (same code). Make adjustments in male symbol's y position in if condition. Debug as you proceed checking both codes.
    - Unfair in use: Drag the 2 symbols in different positions, give the same input to see the inequality.
- Sided/biased (different code)
    - in favor of men
    - in favor of women

Experiment so that the code would either mitigate or exacerbate the gender gap…

Explore the two ways the result is biased (dragging and/or coding).

How could these 2 ways be related to each other?

A solution (same code): https://scratch.mit.edu/projects/1151892036



Discussion:

a) How do you feel that you can create a biased and an unbiased digital tool as well?
b) Where is the bias more “hidden”? When it comes to dragging among different positions or to code?
c) Can you imagine cases where a distorted image of something may help (some people-who)?
d) Do you believe we could support distorted data when the end justifies the means or present the truth by no means?
e) How do you feel that AI (driven by a given purpose) can try out things like you‘ve tried in this challenge?

More questions:

- How do we collect data?
- How is our data processed?
- How are our actions/beliefs affected by statistics hidden in algorithms (AI or not)?

Takeaway: How we create the tool affects the result or even our worldview.

PS. The code can also be used for another challenge beyond math, statistics and spreadsheets…How would you create/code a bar/graph maker?