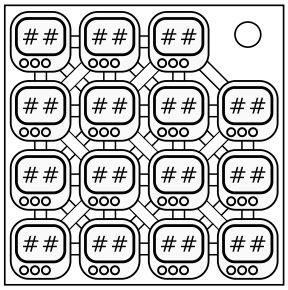
On the Subject of Connected Monitors



Wait, this doesn't seem that hard, what's all the fuss about. Wait, I have to do this up to 15 times? Holy mother of...

- This module contains 15 touch-screen monitors. Each one is connected to the surrounding monitors via wires. These wires cannot be cut.
- Each monitor...
  - ...can be one of five colors: red, orange, green, blue, or purple.
  - ...has a screen that displays a one or two-digit number. The same number can't appear on multiple displays.
  - ...contains anywhere from zero to three indicator lights. Each individual indicator light can be one of six colors: red, orange, green, blue, purple, or white.
- Each individual wire can be one of six colors: red, orange, green, blue, purple, or white.
- Each monitor will be given a score based on the previously mentioned details. Determine each monitor's score and touch the screens of all the monitors with positive(including 0) scores in a specific order.
- When a correct screen is pressed, it will display a check mark, and it can no longer be interacted with.
  - We will use the term "checked-off" to define that a monitor has been pressed correctly, displaying a check mark on it's screen, from this point forward.
- If an incorrect monitor is pressed, a strike will be given but the monitors will not change.
- If none of the monitors have a positive score, check-off the monitor with the highest then lowest score.
- If a monitor's screen is tinted green instead of blue, the number on the screen will change when a monitor it is connected to is checked-off, but only on the first occurrence (the screen will switch to the normal blue tint after the change). Only a maximum of 3 can appear.
- *See appendix ConMonEx for examples on how to complete each section.*

Section 1: Monitor Color (Starting Score)

- The monitor's color will determine the starting score.
- This will be the base for all future calculations.

Red	Orange	Green	Blue	Purple
+2	+1	0	-1	-2

Section 2: Numbers

- Add or subtract values to the current score based on if the number on the monitor satisfies specific conditions.
- Multiple conditions in a single row may apply.
- If a number is only one digit, **pretend the first digit is a 0.**
- Variable a represents the first digit, and variable b represents the second digit.

+3	+2	+1	-1	-2	-3
Divisible by 7	Last digit is a 7	b - a < 0	First digit is 2	Divisible by 6	a + 1 = b
a + b > 10	Divisible by 9	Prime	a is prime	Last digit is 8	Divisible by 10
Last digit is 0	First digit is 5	Last digit is 4	Last digit is 6	First digit is 3	b is prime

Section 3: Number of Indicator Lights

- Determine the number of indicator lights on that monitor.
- If the number on the display is even, add the value.
- If the number on the display is odd, subtract the value.
- If there are no indicator lights on that monitor, you can skip sections 3 and 4 (for that monitor exclusively).

Section 4: Color of Indicator Lights

- Add or subtract values to the current score based off of the color of the indicator lights.
- Lights are positioned in reading order.
- Lights contribute to the score via position, the value labeled in red (the light's position in the set of indicators on the monitor), and color occurrence, the value labeled in blue (the nth time that light's color has appeared in the set of indicators on that monitor).

Red		Orange		Green		Blue		Purple		White	
1st	+1	1st	-2	1st	-3	1st	+3	1st	+1	1st	-1
	+2		-3		-1		+2		-2		-3
2nd	-3	2nd	+2	2nd	+1	2nd	-1	2nd	-2	2nd	+2
	-1		-2		+3		+2		+1		-1
3rd	+3	3rd	+2	3rd	+2	3rd	-1	3rd	-3	3rd	+3
	+3		+1		+3		+1		-2		+3

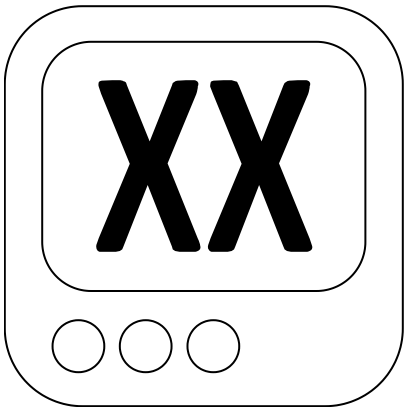
- If the light is blinking, use this table to determine the value based on its position.

Red		Orange		Green		Blue		Purple		White	
1st	+2	1st	+4	1st	-6	1st	-4	1st	+6	1st	+4
2nd	-6	2nd	-2	2nd	+6	2nd	-4	2nd	-2	2nd	+2
3rd	-2	3rd	+6	3rd	-6	3rd	+4	3rd	+2	3rd	-4

Section 5: Connections

- Add or subtract values to the current score based on the colors of the wires connecting the monitor to the surrounding ones.
- The center square is for reference, and each box surrounding it represents the wire in that respective compass direction.

- Each wire's value is amplified by how many connected wires are that specific color (for example, if there are 3 blue wires and the determined values of those 3 blue wires are **[1, 2, 3]**, then the applied values would be **[3, 6, 9]**. This applies for every color).
- Apply these values to the current score to determine that monitor's overall score.

NW	Red	-3	N	Red	-3	NE	Orange	-3
	Green	-2		Blue	-2		White	-2
	Purple	-1		Orange	-1		Green	-1
	Blue	+1		White	+1		Blue	+1
	Orange	+2		Green	+2		Purple	+2
	White	+3		Purple	+3		Red	+3
W	Blue	-3				E	White	-3
	White	-2					Orange	-2
	Green	-1					Red	-1
	Purple	+1					Green	+1
	Orange	+2					Purple	+2
	Red	+3					Blue	+3
SW	Purple	-3	S	White	-3	SE	Red	-3
	Green	-2		Orange	-2		Orange	-2
	White	-1		Purple	-1		Blue	-1
	Orange	+1		Green	+1		Green	+1
	Blue	+2		Blue	+2		White	+2
	Red	+3		Red	+3		Purple	+3

Section 6: Pressing Order

- Any monitor with a negative score must not be pressed under any circumstance, unless every monitor has a negative score (instructions on first page).
- Based on the color of the monitor in the bottom left corner, determine the pressing order for all monitors with positive scores.
- Remember that the numbers on monitors with green screens will change if a monitor connected to it is checked-off (only on the first occurrence), which has a chance of affecting the outcomes of sections 2, 3 and 6.
    - If a monitor's number changes and it, in turn, makes the monitor's score positive, start again from the beginning of the Pressing Order.
- If two or more monitors have the same key, press the monitors in descending order based on the monitors score.
    - If two or more monitors have the same key and score, press the monitors in descending order based on the monitors index in reading order.
- **Key:**
    - Re = Red Monitor
    - Or = Orange Monitor
    - Gr = Green Monitor
    - Bl = Blue Monitor
    - Pu = Purple Monitor

    - Ev = Score is Even
    - Od = Score is Odd

- Red:
    - PuOd, GrOd, OrEv, BlEv, PuEv, GrEv, ReOd, ReEv, OrOd, BlOd.
- Orange:
    - PuEv, GrEv, ReEv, OrEv, GrOd, PuOd, OrOd, BlOd, BlEv, ReOd.
- Green:
    - BlOd, GrEv, ReEv, ReOd, BlEv, OrEv, OrOd, PuOd, GrOd, PuEv.
- Blue:
    - ReEv, ReOd, PuOd, OrEv, OrOd, GrOd, BlEv, PuEv, GrEv, BlOd.
- Purple:
    - PuEv, GrOd, PuOd, BlEv, GrEv, ReEv, ReOd, BlOd, OrOd, OrEv.

Appendix ConMonEx: Connected Monitors Examples

Section 1: Monitor Color (Starting Score)

- I really shouldn't have to explain this one.

Section 2: Numbers

- Run through each condition to see if the number would apply to each of the 18 conditions.
- Let's say the number on a monitor's screen is 26. The following conditions would apply:
  - First digit is 2
  - a is prime
  - Last digit is 6
- If a condition applies, apply the value at the top of that column to the current score.
  - First digit is 2 **(-1)**
  - a is prime **(-1)**
  - Last Digit is 6 **(-1)**
- When put together, the total value that would be applied to the current score would be **-3.**
- Let's say the number on a monitor's screen is 5. Since the number is only one digit, it would be interpreted as "05". The following conditions would apply:
  - Prime
  - b is prime
- If a condition applies, apply the value at the top of that column to the current score.
  - Prime **(+1)**
  - b is prime **(-3)**
- When put together, the total value that would be applied to the current score would be -2.

Section 3: Number of Indicator Lights

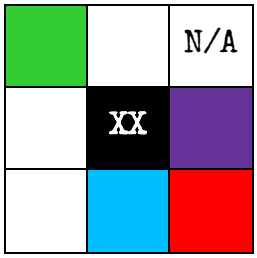
- I shouldn't have to explain this one either...

Section 4: Color of Indicator Lights

- Let's assume that there are 3 indicator lights (note that there can be less than 3) on the monitor in the following order:
  - **Orange, Green, Orange (Blinking)**
- Let's start with the first light.
  - Since the light is orange, in the first position, and not blinking, apply the red value for the [Orange 1st] square on the first table. (-2)
  - Since this is the first occurrence of a light being orange on that monitor, apply the blue value for the [Orange 1st] square on the first table. (-3)
- Now onto the second light.
  - Since the light is green, in the second position, and not blinking, apply the red value for the [Green 2nd] square on the first table. (+1)
  - Since this is the first occurrence of a light being green on that monitor, apply the blue value for the [Green 1st] square on the first table. (-1)
- Now onto the last light.
  - Since the light is blinking, we will have to check the second table.
  - Since the light is orange and in the third position, apply the value for the [Orange 3rd] square on the second table. (+6)
  - Since this is the second occurrence of a light being orange on that monitor, apply the blue value for the [Orange 2nd] square on the first table. (-2)
- After combining all of the obtained values (-2, -3, +1, -1, +6, -2), that will be the overall score that needs to be applied to the current score, which in this case is **-1**.

Section 5: Connections

- Let's say that the colors of the wires surrounding the monitor look like this.



- Each of the 8 boxes surrounding the monitor diagram on the table in Section 5 represent the compass direction that the wire branches out in.
- So, since the wire in the northwest corner is green, we would go to the northwest square, find the value located next to green, and apply that to the total. Do this for all wires.
- After all wires have been checked, these are the totals.

-2	**+1**	N/A
-2	XX	+2
-1	+2	-3

- However, each wire's value is multiplied by how many wires of that color are connected to the monitor.
  - Since there's only 1 green, blue, red, and purple wire each, the values of those wires are unchanged.
  - But since there are 3 white wires connected to the monitor, the values of those 3 wires are multiplied by 3, making the north wire **+3**, the west wire **-6**, and the southwest wire **-3**.
- So overall, these are the values. Which totals to **-7**.

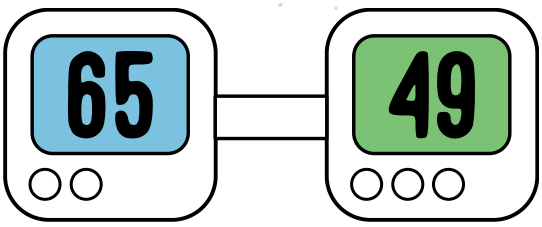
-2	+3	N/A
-6	XX	+2
-3	+2	-3

Section 6: Pressing Order

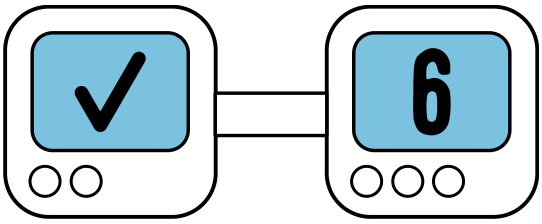
- I think the only two things that need clarifying are the blue vs. green tint rule, and the restart sequence rule.

- Blue vs. Green Tint Rule:

If a monitor with a blue tint is connected to a monitor with a green tint...



...and the monitor with the blue tint is checked-off...



...that will trigger the green-tinted monitor. The number on the screen of the monitor with the green tint will change, and the screen's tint will switch to blue (meaning it won't change again).

- Restart Sequence Rule:

- If a monitor with a green tint is triggered, and the new number on its screen causes the total score to become positive, start over from the beginning of the Pressing Order after the change.
- This has a higher chance of not having any effect if you're near the beginning of the pressing order, but we'll put it this way:
  - Say you've determined that the Pressing Order is the Blue set. You've just completed the fourth type (Orange w/ even numbers). But after checking off that display, a red monitor with a green tint triggers, causing its score to become positive. It's score is now even. Red monitors with even numbers are first in the pressing order. You will have to go back and check off that monitor before continuing with the rest of the order.