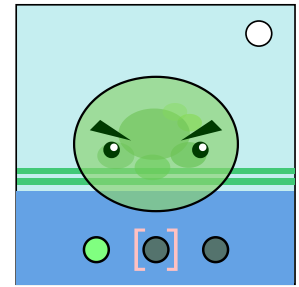# On the Subject of Ghost

What did I tell you about treating your retro bossfights with respect? Now they're on our bo... aww, this green blob guy looks kinda cute. :)

This module is themed after the game Nervous Brickdown, specifically the world 3 bossfight. On the module will be a floating green blob.

The defuser must kill the boss across three phases. Initially, there will only be a single blob, but upon successful attacks, the blob will split up into four pieces. Then, after those four blobs are successfully attacked, each of those will split up into their own set of four blobs, resulting in sixteen total pieces. Kill all sixteen of these blobs to disarm the module.

BE WARNED! On top of determining which blobs to hit, spikes will be flying out of the blobs, towards one of three LEDs at the bottom of the module. The LED that is being attacked is shown with a crosshair. The LED colored green represents your current position. To avoid an attack, move the green LED away from a crosshair by pressing any of the other LEDs.

The spikes will fly out at random times, but it will fly out more frequently if you are in a later phase.

Spikes won't fly out from the blob until either it has been hit, or any module on the bomb has been solved.

Phase One: One large blob

The blob must be pressed four times, each at different points on the timer. These times must be:

- When both seconds digits of the timer are even and different.
- When both seconds digits of the timer are odd and different.
- When both seconds digits of the timer are the same.
- At any time.

These instructions can be followed in any order, but you must follow each rule only once, otherwise a strike will be incurred. In the case of a strike, your presses will reset, and you must press the blob four times again.

In the case that there is less than 60 seconds left on the bomb, these rules can be ignored, and the blob can freely be pressed at any time.

Upon successfully pressing the large blob four times in a row, it will split into four pieces, indicating the end of Phase One and the beginning of Phase Two.

Phase Two: Four medium blobs

First, take all the characters of the serial number, converting letters into their alphabetic position, and create four values:

- The first value is the product of the first and second characters.
- The second value is the product of the third and fourth characters.
- The third value is the product of the fifth and sixth characters.
- The fourth value is the sum of all the characters in the serial number.

Then, apply an iterative process with each number, to obtain a four-letter code.

Each starting number will be referred to as y. In each iteration, a number n and a string s are relevant. n will always be the length of s. s will always start out as "ABCD".

- Take y modulo n to obtain a value v.
- Take the vth letter x (0-indexed) from s.
- Add this to the final code.
- Remove x from s.
- Divide y by n, rounding down.

Repeat this process until you have four four-letter codes, one from each value calculated from the serial number characters.

Remember theese codes for Phase Three.

Each of the four blobs are assigned the letters A through D in reading order. Hit each of the blobs in the order of each of the four codes. You should hit the blobs four times each, for a total of sixteen hits. If, at any point, you hit the wrong blob, a strike will be incurred, and your input will reset.

Upon sucessfully hitting the blobs sixteen times, each of the four blobs will split up into four more blobs each to form a total of sixteen pieces, indicating the end of Phase Two and the beginning of Phase Three.

Phase Three: Sixteen small blobs

First, take the first positions of each code in order, and pair them up with that code number in order. Then, take the second positions of each code in order, and again, pair them up with that code number in order. Repeat this for all four characters in all four codes. Refer to the example below.

After obtaining sixteen letter-number pairs, press these blobs in that order, where A, B, C, and D represent the columns from left to right, and 1, 2, 3, and 4 represent the rows from top to bottom.

Upon hitting the sixteen blobs in the correct order, the module will be disarmed.

If, at any point, the incorrect blob is hit, a strike will be incurred.

Example:

The codes in this example are ABCD, DCAB, ADBC, CBDA.

- Take the first positions of each code in order: A, D, A, C.
- Pair them up with that code number in order: 1, 2, 3, 4.
- The first four pairs are A1, D2, A3, C4.

- Take the second positions of each code in order: B, C, D, B.
- Pair them up with that code number in order: 1, 2, 3, 4.
- The next four pairs are B1, C2, D3, B4.

- Take the third positions of each code in order: C, A, B, D.
- Pair them up with that code number in order: 1, 2, 3, 4.
- The next four pairs are: C1, A2, B3, D4.

- Take the fourth positions of each code in order: D, B, C, A.
- Pair them up with that code number in order: 1, 2, 3, 4.
- The final four pairs are: D1, B2, C3, A4.