

CTF CHALLENGE 2

Objective : Reach 10,000 score points in "Bunny chases carrot"

How the game works :

The bunny and carrot both lie on a grid, so they have coordinates like
(1, 0) (0, 0), (7, 6), (5, 4), (5, 3)

When a socket connects to the game, the bunny resets to (0, 0) and the score is reset.

The server will send you two 32-bit ints which represent the
(x, y) position of the carrot when you connect.

```
void sendPositionOverSocket( sf::TcpSocket & sock, sf::Vector2i pos ){
    sock.setBlocking(true); // make sure you send the data all at once
    char buf[8]; // create an 8 byte buffer
    memcpy(buf,&pos.x,4); // copy position.x in the first 4 bytes of buf
    memcpy(buf+4,&pos.y,4); // copy position.y in buf, starting at buf+4
    sock.send(buf,8); // send the 8 bytes of data
    sock.setBlocking(false); // this feature is only needed on the server, no need
    to worry about it
}
```

This is how the server sends you a location.
'buf' is an array of chars (bytes).

Running this printing code on that 'buf' :

```
for ( int i = 0; i < 8; i++ ){
    cout << (int)buf[i] << ' ';
}
```

might yield this:

```
-----
5 0 0 0 3 0 0 0
-----
( carrot is at (5, 3) )
```

Sending is not fragmented : it will send you 8 bytes each time it sends you something.

The only info that it sends is the position of the carrot.

When you first connect, it sends you the position of the carrot, and when you eat a carrot,
it sends you the position of the new carrot. Nothing else.

Controlling the bunny:

You have to send the server one byte for the bunny to make one move.

You can however send an array of multiple bytes for the bunny to make more moves at once.

The following codes represent what the bunny should do:

```
0x0001: bunny.move(0,-1); // bunny goes up
0x0002: bunny.move(0,1); // bunny goes down
0x0003: bunny.move(-1,0); // bunny goes left
0x0004: bunny.move(1,0); // bunny goes right
anything else you send, that is not 1/2/3/4 is dropped.
```

If you send this buffer to the server :

```
-----
2 4 2 4 2 4 2 4
-----
```

the bunny goes 4 tiles right and 4 tiles down

When you reach 10,000 score points, you will get a big "CRACKED" message on-screen
Good luck!

Code can be found at : <https://github.com/antonioganea/ctf-server-2>