

## Example Game Structure

```
struct game_t {
    space_type_t board
        [BOARD_HEIGHT][BOARD_WIDTH];
    piece_type_t cur_piece;
    int32_t cur_x;
    int32_t cur_y;
    int32_t cur_orient;
    piece_type_t next_piece;
    struct player_t* player;
};
```

## Can Two Structures Have Pointers to One Another?

But can

a struct `player_t` include  
a struct `game_t*` field

and

a struct `game_t` include  
a struct `player_t*` field  
at the same time?

Yes, both are pointers,  
and both sizes are known!

## Example of File-Scope Variables

```
// in player.c
static int32_t n_players = 0;
static struct player_t players[100];
static int32_t n_players_online = 0;
// in game.c
static int32_t n_games = 0;
static struct game_t games[100];
```

## First Function: `player_init` to Initialize a Player

Let's start with

- a function to initialize a player.
- Call it `player_init`.

One parameter is a `struct player_t*`.

The return value?

Let's say an `int32_t`:  
0 for failure, 1 for success.

**What information do we need for  
initialization?**