P8

What's ncurses?

it's an API that abstracts raw terminal control codes into functions for developers to use. It used to be BSDcurses.

How to get it? (for ubuntu cuz I'm lazy for other distros, i mean just look it up)

```
sudo apt-get install libncurses-dev libncursesw5-dev
```

Initial usage

The library include usage is as below, `<ncurses.h>`, and you must include the external link `-lncurses` when compiling with gcc.

```c
#include <ncurses.h>
// …
gcc myapp.c -lncurses -o myapp
```

Now let's look at a simple and practical example

```c
#include <ncurses.h>
int main() {
    initscr();
    cbreak();
    noecho();
    keypad(stdscr, TRUE);
    if (has_colors()) {
        start_color();
        init_pair(1, COLOR_YELLOW, COLOR_BLUE);
    }
    WINDOW *win = newwin(5, 30, 1, 1);
    wbkgd(win, COLOR_PAIR(1));
    box(win, 0, 0);
    mvwprintw(win, 2, 2, "Press any key...");
    wrefresh(win);
    getch();
    delwin(win);
    endwin();
```
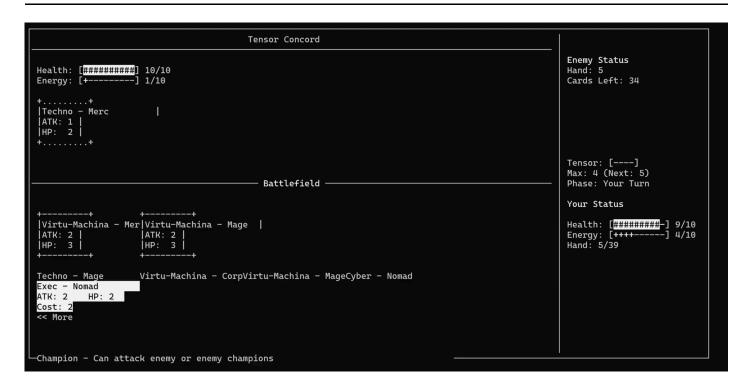
```
        return 0;
    }
```

Legend

Here, `initscr()` sets up ncurses by allocating and clearing the screen. `endwin()` is usually at the exit of the program to restore the terminal. `cbreak()` disables line buffering so `getch()` returns immediately on keypress. `echo()`/`noecho()` enables or disables automatic echoing of typed characters . `keypad(stdscr, TRUE)` enables function- and arrow-key input via `getch()`. Ncurses represents portions of the screen as `WINDOW*` objects, each with its own buffer and cursor. The default window is `stdscr`, covering the entire screen.

Here, it first detects if the terminal has access to color control, and it then initializes the colors. Afterwards, an instant of the WINDOW* object, `win` is created (since its in C, its technically a struct but whatever). `wbkgd` manipulates the background window, like color. `mvprintw(y,x,…)` moves the cursor then prints.

Foremost, these are the important ones, and the API is officially documented online.

Example project - Tensor Concord Card Game (TCC-G)

```
                            Tensor Concord
                                                    ┌─────────────────────┐
                                                    │ Enemy Status        │
  Health: [##########] 10/10                        │ Hand: 5             │
  Energy: [+---------] 1/10                          │ Cards Left: 34      │

  +.........+
  |Techno - Merc        |
  |ATK: 1 |
  |HP:  2 |
  +.........+
                                                     │ Tensor: [----]      │
                                                     │ Max: 4 (Next: 5)    │
  ──────────────────────── Battlefield ──────────── │ Phase: Your Turn    │

                                                     │ Your Status         │

  +---------+          +---------+
  |Virtu-Machina - Mer|Virtu-Machina - Mage  |       │ Health: [########-] 9/10
  |ATK: 2 |            |ATK: 2 |                      │ Energy: [++++------] 4/10
  |HP:  3 |            |HP:  3 |                      │ Hand: 5/39
  +---------+          +---------+

  Techno - Mage        Virtu-Machina - CorpVirtu-Machina - MageCyber - Nomad
  Exec - Nomad
  ATK: 2     HP: 2
  Cost: 2
  << More


  └Champion - Can attack enemy or enemy champions
```

Check it out here at my github.

And this is the repo

It is in C++, but eh

PS: I attempted this MGS-like video call project but couldn't make it in time for the HW deadline...