CS246-S20 - Final Project

d23moham, rsarvari, and qctaian

Overview of Features

CC3k is a Rogue-like dungeon crawler where you adventure through a maze of chambers, where you fight enemies, collect priceless[1] treasures, and drink sketchy looking potions that you found on the floor.

Main Features

- <u>variety of players and enemies with special abilities</u>
    - friendly Merchants that suck at their job[2] but have great workers' unions[3]
    - jealous Dragons that guard their shining piles of jewelry and gold
    - no matter what you throw at a Troll, it'll heal itself up in no time

- <u>a stats and combat system with unique interactions between some characters</u>
    - Elves are so fast they hit you twice, but their Drow counterparts can keep up
    - Vampires, monsters that regain HP and have no limit - but allergic to Dwarves

- <u>potions with a variety of effects, leading to suspenseful playthroughs</u>
    - some potions raise or lower your ATK and DEF until the next floor
    - others heal or poison your HP - be aware of the risk when your HP is low!
    - you can't tell what a potion is before using it... what could possibly go wrong?

- <u>a variety of maps to play</u>
    - don't want to spend time making a layout file? Just play the default map!
    - alternatively, supply a path to a populated map file on the command line

Bonus Features

- <u>even more map and layout options</u>
    - ./cc3k [--path=<>] [--floors=<>] [--gen] [--seed=<>] [--demo] [--extraraces]
    - you can supply the <path/to/the/map> file with the layout and occupant locations
    - if it's not the default 5, you can also note the <number-of-floors> in the mapfile
    - if the map file is layout-only, auto-generate the enemies and items with -gen
    - you can supply an <int-seed> to make the RNG predictable and reproducible
    - -demo puts the game in demo mode, with a slight delay between actions
    - to enable our bonus feature races, use --extraraces

- <u>even more races</u>
    - Knight   - 120/25/40
    - Monk   - 100/40/15
    - Turtle   - 150/10/60
    - Magician - 120/70/5   : 2x potion effects
    - God   - 500/100/100 : no HP limit
    - Phoenix   - 100/45/10
    - Elephant - 100/30/30   : 2x damage to Shades
    - Demon   - 120/80/100
    - Wizard   - 130/50/10
    - Beastman - 130/25/75

- <u>a leaderboard system to introduce competition</u>
    - if you beat the game (get to the stairs on the last floor), your score is added
    - use the seeding function from above to compete with your friends on the same map!

- <u>all object lifetime management via smart pointers</u>
    - we use raw pointers when those pointers should not interfere with lifetime/ownership

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[1] I mean, we aren't going to lie to you, we didn't implement that bonus feature.
[2] No, really, they call themselves Merchants but they're total fakes.
[3] And it's not "all bark, no bite"... 70 ATK is pretty scary.

How to Demo

1. `./cc3k`
   - You've loaded into the default map, with randomly generated enemies and potions.
   - Walk around a bit (`no`, `nw`, `we`, `sw`, `so`, `se`, `ea`, `ne`).
   - Use a potion (`u <dir>`), and just walk over gold to collect it.
   - Hit `r` to go back to the race selection screen, and hit `q` to quit entirely.

2. `./cc3k --path=maps/puredemo.txt --floors=2 --demo --seed=12345 < puredemo.in`
   - <u>Running time: about 4 minutes.</u>
   - We'll show off a lot of interactions in this custom map file.
   - First observe how a player interacts with potions and gold.
   - Notice how the Dragon attacks the player, who is adjacent to the gold.
   - After killing the Merchant on the first floor, the next Merchant is hostile.
   - Also, when we climb the stairs, our ATK and DEF go back to normal.
   - We won! The leaderboard has been updated.[4]
   - The Drow has bonus potion effects on all potions.
   - Now see the Elf double-attack the player. (Compare with a Drow player.)
   - The Goblin is weak to Orcs. (Compare with a troll buffed with a BD potion.)
   - The Vampire is allergic to Dwarves. (Compare with a Human enemy).
   - The Goblin also steals extra gold from killed enemies.[5]

3. `./cc3k --path=maps/big-maze.txt --floors=1 --gen`
   - Notice how we supplied a floor that only had layout, a player, and the stairs.
   - With the --gen option, CC3k knows to generate the enemies and potions.
   - Generation scales with the size of the map.
   - This floor has more occupants than, say, the smaller default floor from ./cc3k.
   - If you got a dragon, get next to its gold to see that it still attacks you.

4. `./cc3k --path=maps/big-maze.txt --floors=1 --demo --seed=1235 < big-maze.in`
   - <u>Running time: about 3 minutes.</u>
   - This is just a full reproducible game of CC3k, using the seed feature.
   - Sit back and watch us exploit the totally-broken Troll to easily beat the game.

5. `./cc3k --extraraces`
   - This option enables the CC3k bonus races.
   - It's fully compatible with any of the other options, so feel free to experiment.
   - Be aware, though, that seeds from Classic don't line up with this mode.

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[4] Rodney is a bit melodramatic.
[5] Where is it coming from? Why isn't the Goblin a Merchant? Why are the actual Merchants useless?