Demo CC3K

By Marzuk Mashrafe, Jennifer Zhu, Jatinvir Matharoo

The executable (cc3k) is made using the `make` command.

It can be run on its own to play a randomized game of ChamberCrawler3000 every time. But for the purposes of this demo, we will be using some additional command line arguments that will help us demonstrate the requirements of this project:

    -C, --colour[=STATE]   // STATE is one of true or false (true by default)
                Draws the game in colour. There is a chance your computer does not
                support this feature (it does on the student environment) which is
                why it is OFF by default

    --print-seed[=STATE]   // STATE is one of true or false (false by default)
                Prints the seed used for random generation

    -S=SEED   // A Number
                Used as seed for random generation

    -W
                Disables the Welcome Message

    FILE-NAME   // A text file (may include path) that exists
                Used for supplying the game with a pre-drawn board

    -L=NUM   // A Number (default = 5)
                Specify the number of levels in the game

    --board=FILE   // FILE is the name of an existing text file
                Overrides the default floor plan with a specified one for gameplay

Using colour will give you a slightly better "gaming" experience. If you enter the `-C` or `--colour` or `--colour=true` commands and get garbage output, unfortunately you will not be able to use colour display. Please re-run the program without these arguments in that case.

Our demo has two parts. First, we will go on a case by case basis to demonstrate the requirements of the project. Then we will have demos to show different player and enemy abilities.

Part 1: Core Features
1. Player Selection Command
2. Direction Commands
3. Attack/Potion/Gold Usage Commands
4. Enemy Stop Command
5. Restart/Quit Commands
6. Bonus Enhancements

Part 2: Character Race/Enemy Type Interactions
1. General Case: Shade Character
2. Specific Cases: Drow, Vampire, Shade, Goblin Characters
3. Miscellaneous: files helpful for additional testing

Core Features

Case 1: Player Selection Command

Type the following in the terminal:

```
$ ./cc3k
```

You should see something like the following:

```
m2mashra@ubuntu2004-016:~/cs246/f21/e/cc3k/basicversion$ ./cc3k

 |  | |~~~~~ |    /~~~\  /~~~\ |\    /| |~~~~~
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Please type one of the letters and press Enter to start (q to quit):
s -   Shade  (125 HP, 25 ATK, 25 DEF)
d -   Drow   (150 HP, 25 ATK, 15 DEF)
v - Vampire  (50  HP, 25 ATK, 25 DEF)
t -   Troll  (120 HP, 25 ATK, 15 DEF)
g -   Goblin (110 HP, 15 ATK, 20 DEF)
```
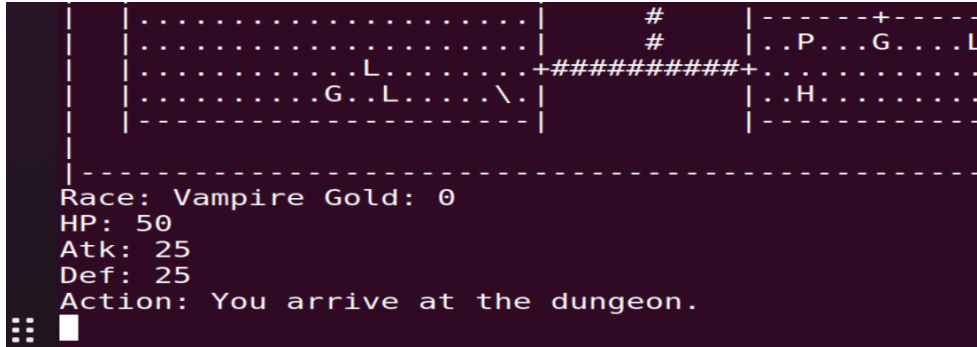
Type one of (s, d, v, t, g) to select a player.

Player Race should be Indicated like this:

```
 |   |....................|       #     |------+-----
 |   |....................|       #     |..P...G....L
 |   |.............L........+###########+............
 |   |..........G..L.....\.|             |..H.........
 |   |--------------------|             |-----------
 |
 |------------------------------------------------------
 Race: Vampire Gold: 0
 HP: 50
 Atk: 25
 Def: 25
 Action: You arrive at the dungeon.
```

Case 2: Direction Commands

1. Continuing from Case 1.

```
|  |.....................|     #     |------+-----
|  |.....................|     #     |..P...G....L
|  |................L.......+##########+..........
|  |.........G..L.....\.|           |..H..........
|  |---------------------|           |------------
|
|---------------------------------------------------
Race: Vampire Gold: 0
HP: 50
Atk: 25
Def: 25
Action: You arrive at the dungeon.
```

2. You should see something like the above.
3. Type any of `(no, so, ea, we, ne, nw, se, sw)` and press Enter
4. You should be able to move in the specified direction.
5. Typing anything else (excluding other valid commands) will do nothing.
6. Use the direction commands to move around as you wish.
7. You cannot move to any invalid floor tiles.

Case 3: Attack/Potion/Gold Usage Commands/Simulation

8. To test Attack, run the following command:

```
$ ./cc3k TESTenemies.txt -L=7                                    .
```

9. This opens a test game specifically designed by us for you to test the program functionality.
10. Type f (Case 4) to disable enemy movements and navigate to within 1 block radius of an enemy.
11. Use command `a  dir` where dir is the direction of the enemy you want to attack.
12. Using the attack command when no enemy is in the described location does nothing.
13. To test Potion use, run the following command:

```
$ ./cc3k TESTpotion.txt                                                    .
```

14. Use command `u` `dir` where dir is the direction of the potion you want to use.
15. Using the potion command when no potion is in the described location does nothing.
16. Likewise with gold, it is the exact same. Run the following command:

```
$ ./cc3k TESTgold.txt                                                      .
```

17. Walk over to a gold pile and step on it.
18. Your Gold stat should update like so:

Case 4: Enemy Stop Command

19. Type `f` and press Enter to enable/disable Enemy movement.

Case 5: Restart/Quit Commands

20. Type `r` and press Enter to restart a game.
21. Type `q` and press Enter to end a game.
22. In either of these cases, your score will not be displayed. It is only displayed when the player completes all the levels or dies.

Case 6: Bonus Enhancements

23. Throughout the program, only smart-pointers have been used for memory management. No leaks are possible.

24. The game can accommodate any game board that is 79 columns wide and 25 rows high (not counting the 5 rows used for display). That means different levels can have different layouts. Although we did not get the time to implement the

generation of these floors at runtime, we have included for you, test files, that have different floor plans from the original project specifications. Here is how to run each of them:

```
$ ./cc3k demoAltLayout.txt -L=2        // Preset Board                          .
```

```
$ ./cc3k --board=jungle.txt            // Different Default Board                .
```

Character Race/Enemy Type Interactions

General Case: Shade Character.
In this demo we will use a Shade to demonstrate different enemy abilities.

1. Run `./cc3k demoEnemies.txt` to start the game.
2. Enter `s` to choose the Shade race. You will appear in a chamber with one of each enemy type as well as a bunch of potions, all of which are Restore Health potions.
3. Explore and fight different enemies to see the differences between enemy types. Use health potions if needed to stay alive, and use f to pause enemy movement if it is helpful. If you die before you have finished fighting all the enemies, repeat steps 1 and 2 to re-run the game.
   a. All enemies will stop moving if they find themselves next to you. If they moved to you, they will not attack first as they spent their turn moving. If you moved to them, they will attack first. Damage, remaining health, and whether or not they missed their attack are displayed at the bottom of the screen after "Action".
   b. Fighting a human:
      i. Move to the human ("H" on the map) and attack them repeatedly until they have died
      ii. Upon being defeated, the human will disappear and be replaced by a gold pile.
      iii. Walk over this pile to collect it. Your gold will increase by 4. Walk off the pile again to see that it has disappeared from the map.
   c. Fighting a dwarf:
      i. Move to the dwarf ("W" on the map) and attack them repeatedly until they have died. Notice that they take less damage than humans as they have more defence.

        ii.   Upon being defeated, the dwarf will disappear and either 1 or 2 gold (randomly decided) will automatically be added to your total.

d. Fighting an elf:
        i.   Move to the elf ("E" on the map) and attack them repeatedly until they have died. The elf will strike twice each turn, dealing either 0 (missed both attacks), 24 (missed one attack), or 48 (missed neither attack) damage each time.
        ii.   Upon being defeated, the elf will disappear and either 1 or 2 gold will be added to your total.

e. Fighting an orc:
        i.   See "fighting a dwarf". The difference will be that their attacks do more damage than a dwarf, and they will take more damage than a dwarf.

f. Fighting a halfling:
        i.   Move to a halfling ("L" on the map) and attack them repeatedly until they have died. The player will now miss half of their attacks.

g. Fighting a dragon:
        i.   Move to a dragon ("D" on the map).
        ii.   Walk around the gold pile next to them (their dragon hoard). The dragon will still attack you even if you are next to only the gold and not the dragon.
        iii.   Move on top of the dragon hoard. No gold will be added to your total. Move off the spot again. The gold is still there and has not been picked up.
        iv.   Move next to the dragon and attack them repeatedly until they have died.
        v.   Upon being defeated, nothing will be added to your gold total.
        vi.   Move on top of the dragon hoard again. This time, the gold is added to your total. Move off of it again. The gold is now gone.

h. Fighting a merchant:
        i.   Move to one of the two merchants ("M" on the map).
        ii.   Move around the merchant. They will not attack you.
        iii.   Attack the merchant. They will begin fighting back.
        iv.   Move away and go to the other merchant (it is in a different chamber). They will now attack you upon your approach.
        v.   Attack this merchant repeatedly until they have died.
        vi.   Upon being defeated, the merchant will disappear and be replaced by a gold pile (merchant hoard).
        vii.   Walk over this pile to collect it. Your gold will increase by 4. Walk off the pile again to see that it has disappeared from the map.

Specific Cases:
The following cases cover the special abilities of the other player races.

Drow Character:
1. Run `./cc3k demoDrow.txt` to start the game.
2. Enter `d` to choose the Drow race. You will appear in a chamber with 6 potions, one of each type, as well as one human and one elf. The chamber above you is the same chamber as in the Shade demo, with one of each enemy type as well as a bunch of Restore Health potions.
3. Move around and use each potion. Their effects are magnified by 1.5. You can test the attack and defense changes on the human.
4. Move to the elf and fight it. The elf will only deal either 0 or 25 damage this time, not 50 damage, as it cannot attack drows twice.
5. If you wish, you can move to the chamber above to test the drow's interaction with the other enemy types. It will be similar to Shade.

Vampire Character:
1. Run `./cc3k demoVampire.txt` to start the game.
2. Enter `v` to choose the Vampire race. You will appear in a chamber with three Restore Health potions, a human, dwarf, and a halfling. The chamber above you is the same chamber as in the Shade demo, with one of each enemy type as well as a bunch of Restore Health potions.
3. Move around and use the health potions. Your HP will increase above the starting HP of 50.
4. Move to the human and fight it. You will gain 5 HP every attack (although your health may still be decreasing overall due to the damage dealt by the human).
5. Move to the dwarf and fight it. You will lose an additional 5 HP every attack on top of the damage dealt by the dwarf.
6. Move to the halfling and fight it. You will only gain 5 HP when your attack hits and not when you miss.
7. If you wish, you can move to the chamber above to test the vampire's interaction with the other enemy types. It will be similar to its interaction with the human.

Troll Character:
1. Run `./cc3k demoEnemies.txt` to start the game.
2. Enter `t` to choose the Troll race. You will appear in the same chamber as in the Shade demo.
3. Move to any enemy and fight it. After you have taken damage, you will gain 5 HP every turn (although your health may still be decreasing overall due to the damage dealt by the enemy).

4. Move away from the enemy and walk around. If your health is still not full, you will continue to gain 5 HP every turn.
5. If you wish, you can attack the other enemies to test the troll's interaction with the other enemy types. It will be similar to Shade.

Goblin Character:
1. Run `./cc3k demoGoblin.txt` to start the game.
2. Enter `g` to choose the Goblin race. You will appear in a chamber with two Boost Attack potions, a human, and an orc. The chamber above you is the same chamber as in the Shade demo, with one of each enemy type as well as a bunch of Restore Health potions.
3. Move around and use the boost attack potions. This is just to speed up the demo as the Goblin has a weak attack.
4. Move to the human and attack it repeatedly until it dies. Upon its defeat, you will automatically gain 5 gold that the goblin has stolen from the human. The human will also drop a gold pile, which you can pick up as before.
5. Move to the orc and fight it. It will deal 50% more damage to you compared with other races who also have 20 Def.
6. If you wish, you can move to the chamber above to test the goblin's interaction with the other enemy types. It will be similar to its interaction with the human.

Miscellaneous
The following files are helpful for testing some additional features:
- `./cc3k demoWin.txt` spawns you close to the staircase so you can test completing the game
- `./cc3k demoPotionCombat.txt` spawns you in a room full of different enemies and attack/defense potions, so you can test the stacking and application of potions in combat