

Name: _____

Networking In-Class

1. For this assignment, you will modify the MMO from your text-based game from last week and implement a few commands to make the game more rogue-like. The majority of your code changes will occur in `ChatState`, since this is where the line-oriented messages are handled.

- (a) But first, modify the `Talker` so that the initial health of each `Talker` is 100.
- (b) Then, add a command called `/who` that lists all of the players who are logged into the system, along with their health. As an example, `/who` might print something like the following to the client who ran the command:

```
Players logged into this MMO:  
Titus, 100  
Michael, 100
```

2. We will now implement a dice roll operation using the `/roll` command. This command should generate a roll (r) such that the value is $0 \leq r \leq 6$. This 0 value is important because sometimes we would like a roll operation to fail entirely. When implemented, the `/roll` command will send the following message to all connected clients (including yourself):

```
* Titus rolled a 6.
```

Note that all commands are output with a `*` in front of the line; this is to prevent other clients from faking commands, which was a problem in some of the original talkers.

3. You will now add your third and most complex command: `/attack player`, where *player* is a logged in client that you wish to attack.
 - (a) You should first use the `startswith` method in order to determine whether the command is actually `/attack`. Then, use the `split` string method to extract the user portion from the full string.
 - (b) Then, you should find the target player from the factory and make sure that this player actually exists in the system. For example, if the command is `/attack Titus`, but Titus is not actually logged in, then you should echo: `The player Titus was not found`. To do this, you can use `has_key` in combination with standard dictionary access techniques.
 - (c) If the target player is logged in, generate a random roll between 0 and 6, inclusive. The roll value is the amount of damage that you will cause the other player.

- (d) Subtract this amount of damage from the other player. If the value of the roll is non-zero, send the message to all clients using the following template: `Titus attacks Michael for 3 damage..` If the value of the roll is 0, instead send the following message: `Titus tries to attack Michael, but misses.`
- (e) If the person that has been attacked has a health less than or equal to zero, then the server should disconnect this player from the game. For the player who has lost all health, the server should send: `You have died.` For all other players in the game, the server should send: `Titus has died. Goodbye.`
- (f) You can disconnect the player by executing the `transport.disconnect()` method on the attacked player.
- (g) Finally, if the player enters a line that is not recognized as a command, then simply send it to all clients except for himself or herself. That is, the message will simply act like any other chat message.

Networking Take Home

4. For homework, you will add the command `/whisper player message`, which sends a message to the target player and only that player. This allows you to implement private communication between players in the chatroom. The command might look like the following:

```
Titus whispers: "Hello!" to you.
```

5. Submit `talker.py` in Moodle.