Boss Battle Hunting the Manticore 250 XP

The Uncoded One's airship, the *Manticore*, has begun an all-out attack on the city of Consolas. It must be destroyed, or the city will fall. Only by combining Mylara's prototype, Skorin's cannon, and your programming skills will you have a chance to win this fight. You must build a program that allows one user—the pilot of the *Manticore*—to enter the airship's range from the city and a second user—the city's defenses—to attempt to find what distance the airship is at and destroy it before it can lay waste to the town.

The first user begins by secretly establishing how far the *Manticore* is from the city, in the range 0 to 100. The program then allows a second player to repeatedly attempt to destroy the airship by picking the range to target until either the city of Consolas or the *Manticore* is destroyed. In each attempt, the player is told if they overshot (too far), fell short (not far enough), or hit the *Manticore*. The damage dealt to the *Manticore* depends on the turn number. For most turns, 1 point of damage is dealt. But if the turn number is a multiple of 3, a fire blast deals 3 points of damage; a multiple of 5, an electric blast deals 3 points of damage, and if it is a multiple of both 3 and 5, a mighty fire-electric blast deals 10 points of damage. The *Manticore* has 10 points of damage it can take and is destroyed after being dealt 10 points of damage.

However, if the *Manticore* survives a turn, it will deal a guaranteed 1 point of damage to the city of Consolas. The city can only take 15 points of damage before being annihilated.

Before a round begins, the user should see the current status: the current round number, the city's health, and the *Manticore*'s health.

A sample run of the program is shown below. The first player gets a chance to place the *Manticore*:

```
Player 1, how far away from the city do you want to station the Manticore? 32
```

At this point, the display is cleared, and the second player gets their chance:

```
Player 2, it is your turn.
-----------------------------------------------------------
STATUS: Round: 1  City: 15/15  Manticore: 10/10
The cannon is expected to deal 1 damage this round.
Enter desired cannon range: 50
That round OVERSHOT the target.
-----------------------------------------------------------
STATUS: Round: 2  City: 14/15  Manticore: 10/10
The cannon is expected to deal 1 damage this round.
Enter desired cannon range: 25
That round FELL SHORT of the target.
-----------------------------------------------------------
STATUS: Round: 3  City: 13/15  Manticore: 10/10
The cannon is expected to deal 3 damage this round.
Enter desired cannon range: 32
That round was a DIRECT HIT!
-----------------------------------------------------------
STATUS: Round: 4  City: 12/15  Manticore: 7/10
The cannon is expected to deal 1 damage this round.
Enter desired cannon range: 32
That round was a DIRECT HIT!
-----------------------------------------------------------
STATUS: Round: 5  City: 11/15  Manticore: 6/10
The cannon is expected to deal 3 damage this round.
Enter desired cannon range: 32
That round was a DIRECT HIT!
-----------------------------------------------------------
STATUS: Round: 6  City: 10/15  Manticore: 3/10
The cannon is expected to deal 3 damage this round.
Enter desired cannon range: 32
That round was a DIRECT HIT!
```

```
The Manticore has been destroyed! The city of Consolas has been saved!
```

Objectives:

- Establish the game's starting state: the *Manticore* begins with 10 health points and the city with 15. The game starts at round 1.
- Ask the first player to choose the *Manticore*'s distance from the city (0 to 100). Clear the screen afterward.
- Run the game in a loop until either the *Manticore*'s or city's health reaches 0.
- Before the second player's turn, display the round number, the city's health, and the *Manticore*'s health.
- Compute how much damage the cannon will deal this round: 10 points if the round number is a multiple of both 3 and 5, 3 if it is a multiple of 3 or 5 (but not both), and 1 otherwise. Display this to the player.
- Get a target range from the second player, and resolve its effect. Tell the user if they overshot (too far), fell short, or hit the *Manticore*. If it was a hit, reduce the *Manticore*'s health by the expected amount.
- If the *Manticore* is still alive, reduce the city's health by 1.
- Advance to the next round.
- When the *Manticore* or the city's health reaches 0, end the game and display the outcome.
- Use different colors for different types of messages.
- **Note:** This is the largest program you have made so far. Expect it to take some time!
- **Note:** Use methods to focus on solving one problem at a time.
- **Note:** This version requires two players, but in the future, we will modify it to allow the computer to randomly place the *Manticore* so that it can be a single-player game.