Abdul Azeem

Introduction Provide an overview of the Red-Blue Nim Game and explain the two game versions (Standard and Misère). Highlight the objectives and goals of implementing this game in Python

Python Code

```
import random

# Set up the game
num_red = int(input("Enter number of red marbles: "))
num_blue = int(input("Enter number of blue marbles: "))
version = input("Enter game version ('standard' or 'misere'): ").lower()
first_player = input("Who plays first? ('human' or 'computer'): ").lower()

# Validate inputs
if version not in ['standard', 'misere']:
    version = 'standard'
if first_player not in ['human', 'computer']:
    first_player = 'computer'

```

```
# Simple move selection for the computer
def computer_move(num_red, num_blue):
    red_move = random.randint(0, min(2, num_red))
    blue_move = random.randint(0, min(2, num_blue))
    return red_move, blue_move

# Main game loop
current_player = first_player
game_over = False

while not game_over:
    print(f"\nRed marbles: {num_red}, Blue marbles: {num_blue}")

    if current_player == 'human':
        # Human move
        print("Your turn! Enter your move:")
        red_move = int(input("Number of red marbles to remove: "))
        blue_move = int(input("Number of blue marbles to remove: "))


```

```
        if red_move > num_red or blue_move > num_blue:
            print("Invalid move! Try again.")
            continue
    else:
        # Computer move
        print("Computer's turn...")
        red_move, blue_move = computer_move(num_red, num_blue)
        print(f"Computer removes {red_move} red marbles and {blue_move} blue marbles.")

    # Update the game state
    num_red -= red_move
    num_blue -= blue_move

    # Check for game-over conditions
```

```
    if num_red == 0 or num_blue == 0:
        game_over = True
        if version == 'standard':
            print(f"Game over! {current_player} loses.")
        else:
            print(f"Game over! {current_player} wins.")
    else:
        current_player = 'human' if current_player == 'computer' else 'computer'
```

```python
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current_player = first_player
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while not game_over:
    print(f"\nRed marbles: {num_red}, Blue marbles: {num_blue}")

    if current_player == 'human':
        # Human move
        print("Your turn! Enter your move:")
        red_move = int(input("Number of red marbles to remove: "))
        blue_move = int(input("Number of blue marbles to remove: "))

        if red_move > num_red or blue_move > num_blue:
            print("Invalid move! Try again.")
            continue
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    else:
        # Computer move
        print("Computer's turn...")
        red_move, blue_move = computer_move(num_red, num_blue)
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    # Update the game state
    num_red -= red_move
    num_blue -= blue_move

    # Check for game-over conditions
    if num_red == 0 or num_blue == 0:
        game_over = True
        if version == 'standard':
            print(f"Game over! {current_player} loses.")
        else:
            print(f"Game over! {current_player} wins.")
    else:
        current_player = 'human' if current_player == 'computer' else 'computer'

```

Result

PROBLEMS 5 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Number of red marbles to remove: 1
Number of blue marbles to remove: 2
Invalid move! Try again.

Red marbles: 1, Blue marbles: 1
Your turn! Enter your move:
Number of red marbles to remove: 1
Number of blue marbles to remove: 1
Game over! human loses.
```