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class Node:
    def __init__(self, label, outcome=None):
        self.label = label
        self.outcome = outcome
        self.children = []

def build_game_tree():
    root = Node("Root")
    rock = Node("Rock")
    paper = Node("Paper")
    scissors = Node("Scissors")

    root.children = [rock, paper, scissors]

    rock.children = [Node("Rock vs. Rock", "Draw"), Node("Rock vs. Paper", "Player 2 wins"), Node("Rock vs. Scissors", "Player 1 wins")]
    paper.children = [Node("Paper vs. Rock", "Player 1 wins"), Node("Paper vs. Paper", "Draw"), Node("Paper vs. Scissors", "Player 2 wins")]
    scissors.children = [Node("Scissors vs. Rock", "Player 2 wins"), Node("Scissors vs. Paper", "Player 1 wins"), Node("Scissors vs. Scissors", "Draw")]

    return root

def play_round(player1_choice, player2_choice):
    # Determine the outcome based on player choices
    if player1_choice == player2_choice:
        return "Draw"
    elif (
        (player1_choice == "rock" and player2_choice == "scissors") or
        (player1_choice == "paper" and player2_choice == "rock") or
        (player1_choice == "scissors" and player2_choice == "paper")
    ):
        return "Player 1 wins"
    else:
        return "Player 2 wins"

def display_tree(node, level=0):
    print(" " * level + "|-- " + node.label + f" ({node.outcome})")
    for child in node.children:
        display_tree(child, level + 1)

def main():
    game_tree = build_game_tree()

    while True:
        print("\nGame Tree:")
        display_tree(game_tree)
        print("\nChoose your move (rock, paper, scissors) or 'quit' to exit:")
        player1_choice = input("Player 1: ").lower()
        if player1_choice == 'quit':
            break

        if player1_choice not in ['rock', 'paper', 'scissors']:
            print("Invalid input. Please choose 'rock', 'paper', or 'scissors'.")
            continue

        player2_choice = input("Player 2: ").lower()
        if player2_choice == 'quit':
            break

        if player2_choice not in ['rock', 'paper', 'scissors']:
            print("Invalid input. Please choose 'rock', 'paper', or 'scissors'.")
            continue

        result = play_round(player1_choice, player2_choice)
        print(f"Result: {result}")

if __name__ == "__main__":
    main()

```



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Game Tree:
|-- Root (None)
|   |-- Rock (None)
|       |-- Rock vs. Rock (Draw)
|       |-- Rock vs. Paper (Player 2 wins)
|       |-- Rock vs. Scissors (Player 1 wins)
|   |-- Paper (None)
|       |-- Paper vs. Rock (Player 1 wins)
|       |-- Paper vs. Paper (Draw)
|       |-- Paper vs. Scissors (Player 2 wins)
|   |-- Scissors (None)

```

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|-- Scissors vs. Rock (Player 2 wins)
|-- Scissors vs. Paper (Player 1 wins)
|-- Scissors vs. Scissors (Draw)
```

Choose your move (rock, paper, scissors) or 'quit' to exit:

Player 1: rock

Player 2: paper

Result: Player 2 wins

Game Tree:

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|-- Root (None)
  |-- Rock (None)
    |-- Rock vs. Rock (Draw)
    |-- Rock vs. Paper (Player 2 wins)
    |-- Rock vs. Scissors (Player 1 wins)
  |-- Paper (None)
    |-- Paper vs. Rock (Player 1 wins)
    |-- Paper vs. Paper (Draw)
    |-- Paper vs. Scissors (Player 2 wins)
  |-- Scissors (None)
    |-- Scissors vs. Rock (Player 2 wins)
    |-- Scissors vs. Paper (Player 1 wins)
    |-- Scissors vs. Scissors (Draw)
```

Choose your move (rock, paper, scissors) or 'quit' to exit:

Player 1: quit