Assignment-03 Yahtzee-Extended

Description:

- Create a testing strategy for the Yahtzee scorer code that was generated and document your journey.

Approach

A. Outlining and defining functions
   1. `roll_dice(num_dice)`: Rolls a specified number of dice and returns the results.
   2. `display_dice(dice)`: Displays the current roll to the player.
   3. `player_choose_dice(dice)`: Allows the player to select which dice to keep and reroll.
   4. `player_choose_category(remaining_categories)`: Allows the player to choose a scoring category.
   5. `computer_choose_dice(dice)`: Determines which dice the computer should keep and reroll.
   6. `computer_choose_category(remaining_categories)`: Selects a scoring category for the computer.
   7. `calculate_score(dice, category)`: Calculates the score for a specific combination.
   8. `update_score_sheet(score_sheet, category, score)`: Updates the player's score sheet.
   9. `display_game_state(dice, score_sheet, remaining_categories)`: Shows the current state of the game to the player.
   10. `check_end_game(remaining_categories)`: Checks if all categories have been filled.
   11. `play_turn(current_player)`: Handles a single turn for either the player or the computer.
   12. `switch_players(current_player)`: Alternates between player turns.
   13. `determine_winner(player_score, computer_score)`: Identifies the player with the highest score.
   14. `display_winner(winner, player_score, computer_score)`: Announces the winner and displays final scores.
   15. `display_menu()`: Shows menu options to the player.
   16. `prompt_player(message)`: Prompts the player for input and returns their response.
   17. `display_message(message)`: Displays game updates and messages to the player.

B. Understanding Variables
    1. `dice`: An array to store the values of the dice rolled. (List)
    2. `score_sheet`: A dictionary or array to store the player's scores for each category. (Dictionary or List)
    3. `remaining_categories`: A list to track which categories are still available for scoring. (List)
    4. `player_score`: An integer to store the total score of the player. (Integer)
    5. `computer_score`: An integer to store the total score of the computer. (Integer)
    6. `current_player`: A string to keep track of whose turn it is. (String)
C. Developing a strategy
    1. Focus on maximizing points by selecting the best scoring category for each roll, considering the current roll and available categories.
    2. Implement decision-making logic to analyze the current roll, determine which dice to keep and reroll, and select the best scoring category. Prioritize scoring categories based on potential points and strategic goals.
    3. Test extensively to ensure the game functions as expected, including player interactions, computer decision-making, and overall gameplay experience.