**Pseudocode**

***Classes***

*Dice: holds all the dice and calculates the scores the dice would give for each category*

*Category: contains the category score value and whether or not it was filled*

*Player: holds the player’s name, all 13 categories, whether or not the player got an upper category bonus, and the player’s total score*

*Game: Internalize all game processes into a class, including players, turns, rounds, dice rolling and score calculations*

***Functions***

*dspMenu(): display the start menu*

*gtPlyrs(): get the amount of and names of players*

*start(): driver function for the game class*

*Declare and initialize variables and pointers*

*Call gtPlyrs() function*

***Call initial() function***

*Initialize all players; set all categories to unfilled state*

*Bonus scores have not been gotten*

*Total score is set to zero*

*Have one turn for every player; after all player turns have passed, one round has passed; there are 13 rounds, one for each category*

***Start the turn of a player***

*Roll 5 dice*

*Repeat up to two times*

*If player wants to stop rolling, have them select all dice*

*Else, keep rolling*

*Have user select which category they want to fill*

*Sort the dice array*

*Call freq() function*

*Call seq() function*

*Categories:*

*Ones-Sixes: Find all dice of matching value to category, add the amounts of those dice to total score (ie. Having 3 fives dice and selecting the fives category will gain you 15 points)*

*Three-of-a-Kind: If there are three dice of the same value in the dice array, total all dice values and add to score*

*Four-of-a-Kind: If there are four dice of the same value in the dice array, total all dice values and add to score*

*Full House: If there is a three-of-a-kind and the remaining two dice are of the same value, add 25 points to score*

*Small Straight: If there are four dice values in a row (ie. 1-2-3-4; 3-4-5-6), add 30 points to score*

*Large Straight: If there are five dice values in a row, add 40 points to score*

*Yahtzee: If there is a five-of-a-kind, add 50 points to score, and allows the player to get Yahtzee bonuses; if the player gets another five-of-a-kind, they will gain a 100 point bonus to the category of their choosing; however, if this category is filled without a five-of-a-kind, the Yahtzee bonus is not available for the player*

*Chance: Add all dice values currently present in array, no requirements needed*

*After 13 rounds have passed, calculate the scores, determine the winner and display*