**Pseudo Code**

*Bring in user libraries*

*Declare Namespace*

*Initialize global constants*

*Initialize enum for main menu*

*Initialize enum for settings menu*

*Initialize Nested Data Struct*

*Initialize Player Struct*

*Function prototypes*

*Enter Main*

*Declare random seed for dice rolling*

*Initialize variables and filestream*

*Do*

*Open file stream*

*If it fails output an error*

*Else*

*Input file into variable for number of players*

*Close the file*

*Call to menu function to display menu*

*Take in user choice*

*Choices options*

*Case play game results in a call to the game function with the the continue game flag set to false*

*Case continue game calls to game function with the flag set to true*

*Case settings is a function call to settings menu*

*While choice is greater than 0 and less than 2*

*Exit main*

*Enter menu*

*Output menu options to console*

*Exit menu*

*Enter game*

*Initialize values and filestreams*

*If continue game flag is true*

*Load all save information from files*

*Declare dynamic structure*

*If continue game flag is true*

*Fill dynamic structure with data from game file*

*If continue game is false*

*Ask player name*

*Get player initials using initials function*

*Set all initial game values*

*Do*

*Roll player dice*

*Ask for how many dice to reroll*

*Reroll that number of dice and repeat until total rolling is 3 iterations*

*Output scoreboard for individual player and ask player for point selection*

*The player can only select a category they haven’t chosen yet*

*Using a switch statement allow for each option to have its own logic*

*If ones count ones*

*If twos count twos*

*If threes count threes*

*If fours count fours*

*If fives count fives*

*If sixes count sixes*

*If three of a kind check for that condition*

*If four of a kind check for that condition*

*If full house*

*Count each of the numbers on the dice.*

*Check for 3 of one kind and 2 of another*

*If small straight*

*Check for 1234*

*Check for 2345*

*Check for 3456*

*If large straight*

*Check for 12345*

*Check for 23456*

*If Yahtzee check for 5 of a kind*

*If chance add up all the dice*

*Iterate player counter unless it is more than the number of players then reset it*

*If end of game phase tally points and output and then exit the game loop*

*Else ask player if they would like to save the game and exit. If not not then continue the loop*

*While exit flag is false loop*

*Delete the pointer declaration for player structure*

*Exit game function*

*Enter settings function*

*Initialize values*

*Allow user to change number of players*

*Save choice to file for next play*

*Exit settings function*

*Enter roll dice function*

*Copy player structure*

*Roll each dice using a random number*

*Exit roll dice function*

*Enter roll function*

*Reroll individual dice using random numbers*

*Exit roll function*

*Enter char getInitials function*

*Return char*

*Exit function*

*Enter searchNum function*

*Search for the number using a for loop*

*Return true if found*

*Otherwise return false*