

This program is divided into 3 parts: TermHeader.h, TermMain.c, TermSecond.c.

First of all let's start at TermHeader.h: We are defining our macros, structures and our functions in this header file in order to use them in other c files this essentially works like a user defined library. We are giving types to our structures elements in this file to use the structure in other c files likewise functions need to be declared in this file to use them in separate files too.

In the TermSecond.c file we have our functions that we have written for the main function. IntCon function uses an int array and int digit value then it concatenates the value which is given by the rand() function. IfComp function gets a char array, three pointers and two integers and its usage is that comparing the users guess and the actual number if the requirements are met the cow and the bull value goes up by 1. CharacterCh function uses one character array and its function is if the user has given a appropriate guess it scans if it has the numbers between 0 to 9.

In the TermMain.c file we have our main file. First of all we define a file pointer because in order for fopen() to work there is an interaction between these. After that we go in to while(1) loop a menu comes up ask us to enter a digit count we get the digit count by &DigCount then we allocate memory by using malloc and open room for pointer. we enter a for loop to pick a random number between number 0 and 9 we do this for the digit count we desire for, check for the exceptions and if there is a exception we go try to set a different number again. Because we have set a large size of an array the rest of it gets to set a different value we need to truncate it by a for loop again. After all this the program gets a secret number and tells the user then ask the user to guess the value that it has initialized. We concatenate the value using IntCon and give the name to new value Scnd_rand after that we update the attempt count in our structure, copy the string by using strcpy to Scnd_rand and with the help of atoi function we change the string into an integer value. We set a fail scenario if the user guesses to more than 10 the code states the user has lost or the user enter quit instead of a guess. We give user a chance to play another round if we don't play again it directly prints the details into txt file and if we choose to play another round again we write the values then we go to start of the codes above. In writing if there is a file named history.txt it opens in reading mode it closes the reading mode and then opens it on append mode else we open it directly in writing mode. If the player has played a round it respectively prints the line count, secret number ,guess list ,attempt count, result and it closes the file. After all this we set the attempt count 0 so if want to play again that value needs to be refreshed and we are sent to starting point of the program, if we don't want to play code is being exited with 0. If the user wins in given amount of attempts the code however once again writes the values then ask to play again if we play again it sends us to writing part like saying no and exiting after that.

