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Hangman Code

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#include <stdio.h>
#include <cs50.h>
#include <string.h>
#include <ctype.h>

//function prototypes

int makeMove(char board [], char guess, string correctWord, int boardSize);
bool gamehasEnded(char board [], string correctWord, int wrongLetters);

int main (void)
{
   string words [] = {"arkansas", "pennsylvania", "iowa", "michigan", "washington",
"connecticut", "oklahoma"}; //initializing the array

   int wordNum;

   do
   {
      wordNum = get_int("Please pick a number 1 through 7 to guess a word: \n");//asking user to
choose a word from the 7 available words
   } while ((wordNum < 0) || (wordNum > 7));

   string correctWord = words[wordNum - 1];  //saving the word that the user will guess

   int n = strlen(correctWord);  //counting the number of letters in the word chosen by the user

   char board [n];  //initializing board size based on the length of the chosen word

   int wrongLetters = 6;  //allowing the user 6 incorrect tries

   char guess;  //stores a letter chosen by the user

   bool gameRuns = true;  //initializing variable which makes the hangman game run
```

```
   printf("Welcome to hangman! Your goal is to guess what the word is by choosing letters. You have a max of six incorrect guesses.\n");
   printf("If you cannot guess the word, you will be hanged! Ready to play? Let's get started\n");

  //setting up the hangman board

   for (int i = 0; i < n; i++)
   {
      board[i]  = '_';
      printf("%c", board[i]);
      printf(" ");
   }
   printf("\n");

   while(gameRuns)
   {
     printf("You have %i wrong guesses left.\n", wrongLetters);

     //giving the user a hint after 3 incorrect tries
     if (wrongLetters <= 3)
     {
        printf("Hint: It's a US state.\n");
     }

     do
     {
         guess = get_char("Choose a lowercase letter: ");
     } while (!islower(guess));

     int letterCount = makeMove(board, guess, correctWord, n);

     if (letterCount > 0)
     {
        printf("Yes! It's up there!\n");
     }
     else
     {
        printf("Sorry. There is no %c\n", guess);
        wrongLetters--;
```

```
        }

        if (gamehasEnded(board, correctWord, wrongLetters))
        {
            gameRuns = false;
        }
    }

     if (wrongLetters == 0)
    {
        printf("Sorry, you have used up all your guesses. Better luck next time! Here is the
word:\n");
        printf("%s\n", correctWord);
    }
    else
    {
        printf("How smart! You got the word! That's one more state in your knowledge tree.\n");
    }

}
   //This function checks whether the user's letter is in the word, and if so, prints the letter in the
corresponding space on the board. It also checks if a letter
   //has already been guessed
   int makeMove(char board [], char guess, string correctWord, int boardSize)
   {
      int letterCount = 0;

       for (int i = 0; i < boardSize; i++)
       {
          if (board[i] == guess)
          {
             printf("This letter has already been guessed.\n");
             return letterCount;
          }
       }

       for (int i = 0; i < boardSize; i++)
       {
          if (guess == correctWord[i])
          {
```

```
            board[i] = guess;
            letterCount++;
        }
        printf("%c", board[i]);
        printf(" ");
    }
    printf("\n");
    return letterCount;
}

// this function checks if the game of hangman has ended, which has if either of the two conditions are true.
bool gamehasEnded (char board [], string correctWord, int wrongLetters)
{
    if (wrongLetters == 0)
    {
        return true;
    }

    for (int i = 0, n = strlen(correctWord); i < n; i++)
    {
        if (board[i] != correctWord[i])
        {
            return false;
        }
    }
    return true;
}
```