Cross Reference from Project

1 You are to fill-in with where located in code

Chapter	Section	Topic	Where Line #"s	Pts	Notes
2	2	cout			
	3	libraries	9-14	5	iostream, iomanip, cmath, cstdlib, fstream, string, ctime
	4	variables/literals	39		No variables in global area, failed project!
	5	Identifiers			
	6	Integers	31	1	
	7	Characters	46	1	
	8	Strings	39	1	
	9	Floats No Doubles		1	Using doubles will fail the project, floats OK!
	10	Bools	47	1	
	11	Sizeof *****			
	12	Variables 7 characters or less			All variables <= 7 characters
	13	Scope ***** No Global Variables			
	14	Arithmetic operators	163		
	15	Comments 20%+	128	2	Model as pseudo code
	16	Named Constants			All Local, only Conversions/Physics/Math in Global area
	17	Programming Style ***** Emulate			Emulate style in book/in class repositiory
3	1	cin	137		
	2	Math Expression			

	3	Mixing data types ****			
	4	Overflow/Underflow ****			
	5	Type Casting	170	1	
	6	Multiple assignment *****			
	7	Formatting output		1	
	8	Strings	39	1	
	9	Math Library		1	All libraries included have to be used
	10	Hand tracing ******			
4	1	Relational Operators			
	2	if	146	1	Independent if
	4	If-else	170	1	
	5	Nesting	159	1	
	6	If-else-if	162	1	
	7	Flags *****			
	8	Logical operators	146	1	
	11	Validating user input	138	1	
	13	Conditional Operator	146	1	
	14	Switch	176	1	
5	1	Increment/Decrement	163	1	
	2	While	134	1	
	5	Do-while	123	1	
	6	For loop	159	1	
	11	Files input/output both		2	
	12	No breaks in loops ******			Failed Project if included
	t		Total	3	

	to show			0	

Cross Reference for Project

2 You are to fill-in with where located in code

Chapter	Section	Topic	Where Line #"s	Pts	Notes
6		Functions	206		
	3	Function Prototypes	25	4	Always use prototypes
	5	Pass by Value	204	4	
	8	return	216	4	A value from a function
	9	returning boolean	142	4	
	10	Global Variables	N/A	XXX	Do not use global variables -100 pts
	11	static variables		4	
	12	defaulted arguments		4	
	13	pass by reference		4	
	14	overloading		5	
	15	exit() function		4	
7		Arrays			

	1 to 6	Single Dimensioned Arrays		3	
	7	Parallel Arrays		2	
	8	Single Dimensioned as Fu Argu		2	
	9	2 Dimensioned Arrays		2	Emulate style in book/in class repositiory
	12	STL Vectors		2	
		Passing Arrays to and from Functions		5	
		Passing Vectors to and fron Function		5	
8		Searching and Sorting Arrays			
	3	Bubble Sort		4	
	3	Selection Sort		4	
	1	Linear or Binary Search		4	
	t to show		Total	70	Other 30 points from Proj 1 first sheet tab

GAME INTRODUCTION:

In this project, I chose the game to be Hangman. It's a word guessing game where a word would be chosen by a person (in the project, the computer chooses the word randomly) and the other person would try to guess a letter. If the guess was right, the right guess would be placed on the corresponding position (if it's used in more than one position it will be placed in all of them), if a guess is wrong a body part of a stickman would be drawn, and if the body gets completed the player loses.

Program:

```
/*
 * File:   main.cpp
 * Author: Youssef Koreatam
```

```
 * Created on February 11, 2022, 7:20 PM
 * Purpose:  Project: hangman
 */

//System Level Libraries
#include <iostream>  //Input-Output Library
using namespace std;
#include <cstdlib>
#include <ctime>
#include <iomanip>
#include <string>

//User Defined Libraries

//Global Constants, not Global Variables
//These are recognized constants from the sciences
//Physics/Chemistry/Engineering and Conversions between
//systems of units!
//Function Prototypes
//Execution begins here!

void chckWnr(int, string, string);
string chsWord(int);
```

```
int main(int argc, char** argv) {
    //Initialize Random Seed once here!
    srand(static_cast<unsigned int>(time(0)));
    //Declare Variables
    int   wordnum; // number/ position of the word
    //variables for the ASCII Art
    string wrong6;
    string wrong5;
    string wrong4;
    string wrong3;
    string wrong2;
    string wrong1;
    string wrong0;
    string logo;

    string play; // answer of the player
    string word; //  the chosen word
    string dashes; // dashes for the number of spaces
    string gsRt = ""; // right guesses
    char guess; // player guesses
    bool cont; // Boolean variable to continue / stop the game
    //Initialize Variables
    // ASCII art for visualization
```

```
          wrong6 = R"(
  +---+
  |   |
  O   |
 /|\  |
 / \  |
      |
==========)";
          wrong5 = R"(
  +---+
  |   |
  O   |
 /|\  |
 /    |
      |
=========
    )";
    wrong4 = R"(
  +---+
  |   |
  O   |
 /|\  |
      |
```

```
      |
=========
    )";
    wrong3 = R"(
  +---+
  |   |
  O   |
 /|   |
      |
      |
=========
    )";
    wrong2 = R"(
  +---+
  |   |
  O   |
  |   |
      |
      |
=========
    )";
    wrong1 = R"(
  +---+
```

```
  |   |
  O   |
      |
      |
      |
=========
    )";
    wrong0 = R"(
  +---+
  |   |
      |
      |
      |
      |
=========
    )";
    logo   = R"(
 _
| |
| |__   __ _ _ __   __ _ _ __ ___   __ _ _ __
| '_ \ / _` | '_ \ / _` | '_ ` _ \ / _` | '_ \
| | | | (_| | | | | (_| | | | | | | (_| | | | |
|_| |_|\__,_|_| |_|\__, |_| |_| |_|\__,_|_| |_|
```

```
                __/ |
               |___/
)";
cont = true;
do{ // while loop to keep the game going
wordnum = rand() % 10; // randomly choosing a word between 0 and 9


cout << "Do you want to play  game of hangman? Type y or n" << endl;
cin  >> play;
if(play == "n"){ // if a player chooses no, the games shuts down
    cont = false;
    cout << "Good Bye!";
}else if(play == "y"){
    cont = true;
}else{
    while(play != "y" && play != "n" && cont == true){
    cout << "Enter a valid option" << endl;
    cout << "Do you want to play  game of hangman? Type y or n" << endl;
    cin  >> play;
     if(play == "n"){
        cont = false;
        cout << "Good Bye!";
    }else if(play == "y"){
```

```
        cont = true;
}
}
}
if(play == "y" && cont == true){
    cout << logo << endl;
    cout << wrong0 << endl;
    cout << "Guess a letter:" << endl;

word = chsWord(wordnum);
cout << word << endl;  // to remove
for(int dashesV = word.length(); dashesV > 0; dashesV--){
    dashes += "-";
}
cout << dashes;
cout << endl;
int size = word.length();
for(int tries = 6; tries > 0;tries--){
cout << "Guess a letter: " << endl;
cin  >> guess;
if(guess >= 65 && guess <= 90){
    guess += 32;
}else if(guess >= 97 && guess <= 122){
```

```
    guess = guess;
}else{
    cout << "Please enter a valid letter as a guess!" << endl;
}
for(int i = 0; i < size; i++){
    if(guess == static_cast<char>(word[i]) && tries > 0){
        cout << word[i] << " is correct" << endl;
        tries < 6? tries +=1: tries=tries;
        gsRt += word[i];
        cout << gsRt << endl;
    }else{
        switch(tries){
            case 6: cout << wrong0 << endl;break;
            case 5: cout << wrong1 << endl;break;
            case 4: cout << wrong2 << endl;break;
            case 3: cout << wrong3 << endl;break;
            case 2: cout << wrong4 << endl;break;
            case 1: cout << wrong5 << endl;break;
            case 0: cout << wrong6 << endl;break;
        }
    }
}
    cout << "You have " << tries << " tries left." << endl;
```

```
        chckWnr(tries, gsRt, word);



    }
    }
    }while(cont == true);
    //Exit the program
    return 0;
}
void chckWnr(int tries, string gRt, string wrd){
if(tries == 0){
            cout << "You lost!" << endl;
        }else if(gRt == wrd){
            cout << "You won!" << endl;
        }
}
string chsWord(int wordnum){
    string word;
switch(wordnum){
            case 0: word = "apple";return word;break;
            case 1: word = "python";return word;break;
            case 2: word = "computer";return word;break;
            case 3: word = "science";return word;break;
```

```
            case 4: word = "football";return word;break;
            case 5: word = "battleship";return word;break;
            case 6: word = "water";return word; break;
            case 7: word = "flower";return word; break;
            case 8: word = "hardware";return word; break;
            case 9: word = "software";return word; break;
        }
}
```