***YAHTZEE!***

Dice Game

Elise Chue

CSC 5

Spring 2018

42483

**TABLE OF CONTENTS**

**INTRODUCTION**

**RULES**

**DEVELOPMENT NOTES**

**PSEUDOCODE**

**FLOWCHART**

**CONSTRUCTS/CONCEPTS USED**

**SCREENSHOT OF RESULTS**

**PROGRAM**

**INTRODUCTION**

I was introduced to Yahtzee by my sister-in-law a few years ago. It’s a fun and simple game that has the thrill of competition and gambling with statistics without having to go to a casino. It shares a few similarities with Poker in that scoring can be based off well known hand sequences (i.e. straight, full house, etc.) by rerolling for a better result.

**RULES**

* *Object of the Game*

Accumulate the most points.

* *Rules*

The game can be played from 1 to any number of players.

Players take turns rolling 5 dice. Each round

**DEVELOPMENT NOTES**

Actually programming a game has to be very literal which produces a little bit of a challenge for the amount of experience I have when translating it to code. For instance, I would not be able to play against a computer if I wanted a multi player game since the computer would need to have artificial intelligence to know which dice to keep given their options.

I decided to opt for a full 2 player game which is an improvement from my Project 1 version where I only programmed three solo rounds.

**PROJECT 1 CHECKLIST REVISIT**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Chapter** | **Section** | **Topic** | **Where Line #''s** | **Pts** | **Notes** |
| 2 | 2 | cout |  |  |  |
|  | 3 | libraries | 9 - 15 | 5 | iostream, iomanip, cmath,  cstdlib, fstream, string, ctime |
|  | 4 | variables/literals |  |  | No variables in global area, failed project! |
|  | 5 | Identifiers |  |  |  |
|  | 6 | Integers | 52 - 56 | 1 |  |
|  | 7 | Characters | 41, 45 | 1 |  |
|  | 8 | Strings | 263, 264 | 1 |  |
|  | 9 | Floats No Doubles | 66, 131 | 1 | Using doubles will fail the project, floats OK! |
|  | 10 | Bools | 61 | 1 |  |
|  | 11 | Sizeof \*\*\*\*\* |  |  |  |
|  | 12 | Variables 7 characters or less |  |  | All variables <= 7 characters |
|  | 13 | Scope \*\*\*\*\* No Global Variables |  |  |  |
|  | 14 | Arithmetic operators |  |  |  |
|  | 15 | Comments 20%+ |  | 2 | Model as pseudo code |
|  | 16 | Named Constants | 22, 50, 51 |  | All Local, only Conversions/Physics/Math in Global area |
|  | 17 | Programming Style \*\*\*\*\* Emulate |  |  | Emulate style in book/in class repositiory |
|  |  |  |  |  |  |
| 3 | 1 | cin |  |  |  |
|  | 2 | Math Expression |  |  |  |
|  | 3 | Mixing data types \*\*\*\* |  |  |  |
|  | 4 | Overflow/Underflow \*\*\*\* |  |  |  |
|  | 5 | Type Casting | 132 | 1 |  |
|  | 6 | Multiple assignment \*\*\*\*\* |  |  |  |
|  | 7 | Formatting output | 135, 279 - 285 | 1 |  |
|  | 8 | Strings | 290, 291 | 1 |  |
|  | 9 | Math Library | 132 | 1 | All libraries included have to be used |
|  | 10 | Hand tracing \*\*\*\*\*\* |  |  |  |
|  |  |  |  |  |  |
| 4 | 1 | Relational Operators |  |  |  |
|  | 2 | if | 109 | 1 | Independent if |
|  | 4 | If-else | 264, 272 | 1 |  |
|  | 5 | Nesting | 40,55,59 | 1 |  |
|  | 6 | If-else-if | 264, 268 | 1 |  |
|  | 7 | Flags \*\*\*\*\* |  |  |  |
|  | 8 | Logical operators | 195 | 1 |  |
|  | 11 | Validating user input |  | 1 |  |
|  | 13 | Conditional Operator |  | 1 |  |
|  | 14 | Switch | 193 | 1 |  |
|  |  |  |  |  |  |
| 5 | 1 | Increment/Decrement | 55 | 1 |  |
|  | 2 | While |  | 1 |  |
|  | 5 | Do-while | 40 🡪 112 | 1 |  |
|  | 6 | For loop | 55,59, | 1 |  |
|  | 11 | Files input/output both |  | 2 |  |
|  | 12 | No breaks in loops \*\*\*\*\*\* |  |  | Failed Project if included |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| \*\*\*\*\*\* Not required to show |  |  | Total | 30 |  |

**PROJECT 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Chap** | **Section** | **Topic** | **Where Line #''s** | **Pts** | **Notes** |
| 6 |  | Functions |  |  |  |
|  | 3 | Function Prototypes | 23 - 31 | 4 | Always use prototypes |
|  | 5 | Pass by Value | 60 | 4 |  |
|  | 8 | return | 266, 272 | 4 | A value from a function |
|  | 9 | returning boolean | 270 | 4 |  |
|  | 10 | Global Variables |  | XXX | Do not use global variables -100 pts |
|  | 11 | static variables | 262, 263 | 4 |  |
|  | 12 | defaulted arguments | 24 | 4 |  |
|  | 13 | pass by reference | 60 | 4 | Anytime calling a function and passing  an array is pass by reference |
|  | 14 | overloading | 25, 26 | 5 |  |
|  | 15 | exit() function | 142 | 4 |  |
| 7 |  | Arrays |  |  |  |
|  | 1 to 6 | Single Dimensioned Arrays | 43, 44 | 3 |  |
|  | 7 | Parallel Arrays | 43, 44 | 2 |  |
|  | 8 | Single Dimensioned as Function Arguments | 60 | 2 |  |
|  | 9 | 2 Dimensioned Arrays | 48 | 2 | Emulate style in book/in class repositiory |
|  | 12 | STL Vectors | 49 - 51 | 2 |  |
|  |  | Passing Arrays to and from Functions | 60 | 5 |  |
|  |  | Passing Vectors to and from Functions | 107 | 5 |  |
|  |  |  |  |  |  |
| 8 |  | Searching and Sorting Arrays |  |  |  |
|  | 3 | Bubble Sort | 63 | 4 |  |
|  | 3 | Selection Sort | 85 | 4 |  |
|  | 1 | Linear or Binary Search | 197 | 4 |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| \*\*\*\*\*\* Not required to show |  |  | Total | 70 | Other 30 points from Proj 1 first sheet tab |