Project 1

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CIS – 5

**Introduction**

Title: Baccarat

Baccarat can be played with a minimum of two people. At a casino, the players would be referred to as the house and the player. In Baccarat, each player is given two cards, which are worth points. Whoever has the most points wins. How many points a player has is determined by the sum of their cards. However, if the cards add up to ten or greater, then the points are worth the value of the right most digit of the sum of the cards. For instance, cards with a face value of 9 and 7 have a sum of 16, however, the player will only have a score of 6. Therefore, the highest possible winning sum would be a score of 9. Cards two through nine are worth their face value in points, while a king, queen, or jack are worth zero points. Aces are worth one point.

**Summary**

Project size: 148 lines

Number of variables: 20

In this program a file is open which holds the numbers zero through nine to represent the possible points a card is worth. Next a random number is generated which when added to a for loop will decide how many lines are read from that file. The last line read from that file will be a number held in the “hold” type of variables that is passed to a function where it is switched for a different number. That new number will represent the points on one of four cards. The process is repeated three more time to generate a total of four “cards.” The first two are added and assigned to the user. The second two are assigned to the “house.” If the cards add up to ten or more, then ten is subtracted from the sum. The sums are compared to see which is highest and who’s sum it was. If the player wins, a counter is incremented. The player is then asked if they want to play again. If the user wants to play again, a separate counter is incremented and then a “chance” of winning the next match is calculated. Over time this “chance” will approach 50%, given as the outcome of the game is random.

**Description**

The main ideas of this program are working with random numbers and the handling and reading in of a file.

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| --- | --- | --- | --- |
| **Cross Reference for Project 1** | | | |
|  |  |  | **Where in Code** |
| **Chapter** | **Section** | **Topic** | **Line number** |
| 2 | 2 | cout | 36 |
|  | 3 | libraries | 8 ->13 |
|  | 4 | variables/literals | 21 |
|  | 5 | Identifiers | 21 |
|  | 6 | Integers | 23 |
|  | 7 | Characters | 21 |
|  | 8 | Strings | 31 |
|  | 9 | Floats No Doubles | 26 |
|  | 10 | Bools | 38 |
|  | 11 | Sizeof \*\*\*\*\* |  |
|  | 12 | Variables 7 characters or less | 21 |
|  | 13 | Scope \*\*\*\*\* No Global Variables |  |
|  | 14 | Arithmetic operators | 40 |
|  | 15 | Comments 20%+ | 22 |
|  | 16 | Named Constants | 29 |
|  | 17 | Programming Style \*\*\*\*\* Emulate |  |
|  |  |  |  |
| 3 | 1 | cin | 126 |
|  | 2 | Math Expression | 40 |
|  | 3 | Mixing data types \*\*\*\* |  |
|  | 4 | Overflow/Underflow \*\*\*\* |  |
|  | 5 | Type Casting |  |
|  | 6 | Multiple assignment \*\*\*\*\* |  |
|  | 7 | Formatting output | 36,93 ->97 |
|  | 8 | Strings | 31 |
|  | 9 | Math Library |  |
|  | 10 | Hand tracing \*\*\*\*\*\* |  |
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| 4 | 1 | Relational Operators | 53 |
|  | 2 | if | 88 |
|  | 4 | If-else | 99 ->102 |
|  | 5 | Nesting | 107 |
|  | 6 | If-else-if | 107 |
|  | 7 | Flags \*\*\*\*\* |  |
|  | 8 | Logical operators | 114 |
|  | 11 | Validating user input |  |
|  | 13 | Conditional Operator | 100 |
|  | 14 | Switch | 135 |
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| 5 | 1 | Increment/Decrement | 53 |
|  | 2 | While |  |
|  | 5 | Do-while | 37 |
|  | 6 | For loop | 53 |
|  | 11 | Files input/output both | 31 ->33 |
|  | 12 | No breaks in loops \*\*\*\*\*\* |  |
| \*\*\*\*\*\* Not required to show |  |  |  |