CS161

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**Assignment #4 – Game of Craps and Practice Recursion/Strings**

**Problem Statement:**

Write a C++ program that make a game “craps”. The rule of the game is a player rolls tow times dice, and sum values. The sum value is 7 or 11 the user win. If the first-time rolls sum is 4,5,6,8,9 or 10, the user need continues rolls the dice. If user rolls dice get those number or 7, then stop tolling the dice. If rolls 7, user loses money, if second time, the sum also is 4,5,6,7,9 or 10, user win money. However, if the first time the sum is 2,3 or 12, the user also loses money.

**Understanding the Problem:**

This problem is asking for random number. According to the sum of random number, to make sure user win or loses “money”. The random the number should between 1 to 6. If the first-time sum is 2,3 or 12 will stop running and give result. If the sum is 4,5,6,8,9 or 10 will continues running until those number or 7. After that return the result.

**Devising a Plan/Design:**

Ask for user the initial bank balance.

Ask for user wager, if bagger than balance stop the game, if smaller than balance it can continue.

Rolling a random number twice and make the random function.

Calculate the sum of the random number.

If the number is 7 or 11, the user win.

If the number is 2,3 or 12 the user loses.

If the number is 4,5,6,8,9 or 10.

Call the random function and continue roll twice.

If the number is 4,5,6,8,9 or 10 the user win.

If the number is 7 the user loses.

If other numbers, it will continue.

If win added money that user wager.

If lose, delete user wager.

**Testing:**

| **value** | **expected** | |
|---|---|---|
| **Balance=100**<br>**Wager=110** | **Do not have enough money** | **Same to expected** |
| **Balance =100**<br>**Wager = 10**<br>**Win ¦** | **User win and balance add 10** | **Same** |
| **Balance = 100**<br>**Wager =10**<br>**Loss** | **User win and balance decrease 10** | **Same** |

**Program#2**

**Understanding the Problem:**

This problem is read the user input and according to the user, output palindrome or reverse. Use string and get line function to save the input. Use the size function to read how long the string.

**Devising a Plan/Design:**

Ask user do they need reverse or palindrome

Ask user input

If the user needs reverse, use size to determine how long does the input

Use at() to output form lager to small

(use for loop, benign from size() end at i =0)

If user needs check palindrome

Use size() function to read how long does the input have.

Use at() to read the last one and read the first one

Comparison they are same or not

If not, output not palindrome

If same, check second

Use for loop (i++ or i--),loops size/2 times(if odd number does not need check the mid one, so just int size/2 times.

**Testing:**

| value | expected | |
|---|---|---|
| Want to reverse<br>Input: asd | dsa | Same |
| Want to check palindrome<br>Input: asd | Not a palindrome | Same to expected |
| Want to check palindrome<br>Input: asa | It is a palindrome | Same to expected |