Complexity Description of ScoreKeeper

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Below I will describe the worst case complexity of the ScoreKeeper class by describing the worst case complexity of each method in ScoreKeeper.

I will refer to the amount of characters in a string as n

convert_to_number(input,position)

This method converts a char in the string input at a given position and returns a value that corresponds to the char.

The worst case complexity of this method is **O(1)** because this method looks up returns values based on conditional statements.

calculate(input)

Calculate starts off by calling compute_number_of_throws and then executes one loop that loops n times. Each iteration of the loop consists of checking multiple conditionals O(1) resulting in a worst case complexity of **O(n)**.

Therefore, while ignoring constants, this method has a total worst case complexity of O(n) + O(1) = **O(n)**