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**De La Salle University • College of Computer Studies**

Statistical Guide to

**Yahtzee**

A Dice Game

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**Introduction**

Yahtzee is a dice game that can be played with 1 or more players. The game is played with five dice and a score board. The objective of the game is to gain the highest score possible.

**Mechanics of the Game**

*The Roll*

Each player’s turn consists of rolling the five dice at most three times. After the first roll, they can choose to keep any of the five dice and re-roll the remaining (it is possible that they do not like the roll at all and they re-roll all five dice). On the third roll, they may choose to switch up the kept dice and the dice to be re-rolled. Whatever comes out of the third roll is the final roll for the turn. They must now fill in a field in their score board, even if the value of which is a zero. The player may stop before the third roll.

*The Score Board*

The score board has two sections for each player: an upper section and a lower section. There a total of thirteen fields to be filled. No field can be filled in twice.

In the upper section, the fields to be filled in are Aces, Twos, Threes, Fours, Fives, and Sixes. These are based on the corresponding numbers on the five dice. For example, if one were to roll a 2, 2, 3, 3, 5; they could score a 4 in the Twos field since they have two 2’s, a 6 in the Threes field since they have two 3’s, a 5 in the Fives field since they only have one 5, or a 0 in the Aces, Fours, or Sixes since there no 1’s, 4’s, or 6’s. If a player can accumulate sixty-three total points in the upper section (three dice in each field), they get a thirty-five point bonus.

In the lower section, the fields to be filled in are Three of a Kind, Four of a Kind, Full House, Small Straight, Large Straight, Yahtzee, and Chance. If the roll shows three of any value, it is eligible for Three of a Kind, which is scored by adding all the values of the dice. If the roll shows four of any value, it is eligible for Four of a Kind, which is scored by adding all the values of the dice as well; note that a roll of this kind is also eligible for Three of a Kind. A Full House consists of a three of a kind of one value and a pair of a different value, for example, 1,1,1,5,5. This is given a flat score of twenty-five. A Small Straight happens when four of the five dice are consecutive numbers, for example, 3, 3, 4, 5, 6. The last four dice are consecutive. This is granted a flat score of thirty. A Large Straight happens when all five dice are consecutive numbers, for example, 2, 3, 4, 5, 6. This is granted a flat score of forty. The greatest challenge of the game is the Yahtzee, which is simply all five dice having the same value. This is granted a score of fifty, but if a player is (Syfu) fortunate enough to get multiple Yahtzees in one game, they are granted a one hundred point bonus for each. They have to fill in the appropriate field in the upper section, for example, a 5,5,5,5,5, will grant the player a twenty-five in the Fives box. If the box has already been filled, the player can choose any field in the lower section, all of them scored in the same way. In the previous example, if the Fives box is already filled, they can put a twenty-five (sum of all dice) in the Three or Four of a Kind fields, a twenty-five in the Full House field, a thirty in the Small Straight field, or a forty in the Large Straight field. If all lower section fields are already full and the appropriate upper section fields is already filled, a zero must be put in an empty field in the upper section. Extra Yahtzees cannot be credited if the Yahtzee box was marked with a zero. Chance is a failsafe; if your roll is undesirable, you may just add up all the values and put whatever total there is in the Chance field.

*End of the Game*

At the end of the game, the Upper Section, with the bonus, if any, is added with the Lower Section, with any Extra Yahtzee bonuses, to get the Grand Total. High score wins.

**Scope**