



Date handed out: Wednesday 4 April 2012

Date submission due: Wednesday 18 April 2012

Project Objectives

The main goal of this project is to help you exercise selection statements, random numbers, loops, nested loops and simple functions.

Kismet

Kismet is the trademarked name of a commercial dice game. Kismet is played with five tri-colored dice, and players try to score the highest combinations possible. In this project, you will implement a simplified version of the Kismet game, which is played between two players. Players roll a dice, up to three times, attempting to obtain highest scored dice combinations. The player with the highest total score wins the game.

This game consists of: five white dice, with coloured pips, 1 and 6 coloured black, 2 and 5 red, 3 and 4 green and a scoreboard. The following figure shows the dice used in this game:

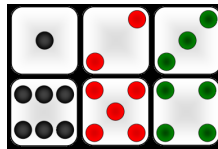


Figure 1 The faces of the dice used in Kismet game.

In this project, you will implement the Kismet game with two players. Whoever gets the highest total score at the end of the game will win the game. The game will be played as follows:

This game will be played in 6 rounds and in each round you will calculate the score of each player and their total score. The player who gets the highest score at the end of the game will win the game. The following steps will be followed in each round:

- a. The first player rolls all five dice trying to gain a scoring combination. After reading the dice, the player may stop and take a score OR may pick up one dice and roll again. After the second roll, the player may stop and take a score OR pick up one dice and roll again. After the third roll, your program has to calculate two scores for this player: basic score and Kismet score. The calculation method for these scores is given below (see section 1 and section 2). The overall score for this player is the total of basic and kismet scores so far. After the score is calculated for this player, now the turn is given to the second player.
- b. The steps in part (a) are now followed for the second player.





The game is finished when each player plays his or her 6 rounds. At the end of the game, your program has to announce the winner who is the player with the highest score.

1. Basic score calculation

Your basic score will depend on the round. There are six rounds: Aces(ones), Deuces(twos), Treys(threes), Fours, Fives, and Sixes. That means in each round, the score will be calculated by adding the total of dice that match the round. For example, after the third roll, dice displaying (3, 4, 4, 6, and 4) may be entered as a score of 12 Fours round (the total pips on the dice displaying 4), a 3 in the Treys round (3x1), or a 6 in the Sixes round (6x1).

2. Kismet score calculation

The Kismet score is calculated based on creating dice combinations. It is in this section that the colored dice come into play, as they determine scoring criteria below:

Category	Description	Score	Example
Straight	1-2-3-4-5 or 2-3-4-5-6	30	
Flush	All dice showing the same color.	35	
Kismet	All five dice showing the same number	Sum of all dice + 50	
Yarborough	Any combination.	Sum of all dice	

Sample Run

Please note that you do not have to strictly follow this interaction pattern. As long as the game is played with the rules specified above, you can design the interaction differently.

Player 1 - Round 1:

Dice 1: 3, Dice 2: 4, Dice 3: 4, Dice 4: 6, Dice 5: 4

Do you want to get a score or roll a dice (s/r)? s

Your basic score is 0 and your kismet score is 21 with a total 21!

Player 2 - Round 1:

Dice 1: 6, Dice 2: 6, Dice 3: 4, Dice 4: 6, Dice 5: 6

Do you want to get a score or roll a dice (s/r)? r

Which dice you would like to roll again (1-5)?3

Dice 1: 6, Dice 2: 6, Dice 3: 6, Dice 4: 6, Dice 5: 6

Do you want to get a score or roll a dice (s/r)? s

Your basic score is 0 and your kismet score is 80 with a total 80!

Player 1 - Round 2:

Dice 1: 5, Dice 2: 2, Dice 3: 4, Dice 4: 3, Dice 5: 5

Do you want to get a score or roll a dice (s/r)? r

Which dice you would like to roll again (1-5)?1

Dice 1: 1, Dice 2: 2, Dice 3: 4, Dice 4: 3, Dice 5: 5

Do you want to get a score or roll a dice (s/r)? r

Which dice you would like to roll again (1-5)?3

Dice 1: 1, Dice 2: 2, Dice 3: 3, Dice 4: 3, Dice 5: 5

Do you want to get a score or roll a dice (s/r)? r

Which dice you would like to roll again (1-5)?4

Dice 1: 1, Dice 2: 2, Dice 3: 3, Dice 4: 4, Dice 5: 5

Your basic score is 2 and your kismet score is 30 with a total 53!

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Player 2 - Round 6:

Dice 1: 6, Dice 2: 6, Dice 3: 6, Dice 4: 6, Dice 5: 6

Do you want to get a score or roll a dice (s/r)? s

Your basic score is 30 and your kismet score is 80 with a total 230!

THE WINNER IS PLAYER 2!!!

Grading:

Your program will be graded as follows:

Grading Point	Mark (10)	Mark
Setting up Kismet for two players with 6 rounds	2	

<p>For each player:</p> <p>Rolling 5 dice at the beginning of the game in order to get a scoring combination</p> <p>Deciding whether the player may stop and take a score OR may pick up one dice and roll again till the end of 3rd roll</p>	2	
<p>Calculation of the score of each player at the end of each round</p> <p>a. Basic score calculation</p> <p>b. Kismet score calculation</p> <ul style="list-style-type: none"> • Checking the category of the colored dice according to the table in part 2 • Correct calculation according to the category 	3	
<p>Display the dice values for each turn of each player</p> <p>Finding and displaying basic score, kismet score and total score</p>	2	
<p>General program set up</p> <p>Libraries, variable declarations, overall program layout</p>	1	