

How to play Scrabble

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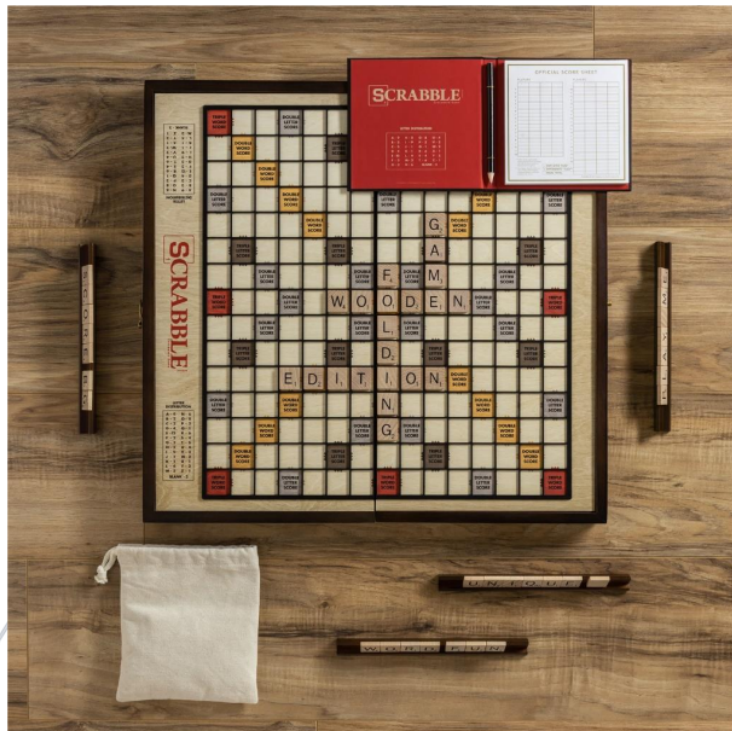
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Assessment 1

Analysing & Solving Problems (ACCA4019)



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Contents

Introduction.....	2
How to play Scrabble?	2
Includes a Scrabble board, letter hangers and letter tiles.....	2
Agree on the dictionary you will use for the challenge.	2
Put the 100 tiles in the bag and shake.	2
Draw tiles to decide who plays first.....	2
Fill the shelf with 7 tiles.....	3
A requirement features list for a possible computer-based solution for the game using the MoSCoW	3

Introduction

Scrabble is a popular board game in which players use cards to form words on a 15 x 15 grid board. Invented by Alfred Mosher Butts in 1938, the game was called Scrabble when the rights were acquired in 1948. Players begin by drawing seven letter tiles, taking turns building words on the board, and scoring points based on letter value and money. squares Play continues until all tiles have been drawn, a player has used all of his tiles, and no valid moves are left. Strategy is important as players aim to maximise scores and control the board. The player with the highest score wins. [1]

How to play Scrabble?

Includes a Scrabble board, letter hangers and letter tiles.

Lay out the board, place the 100-letter tokens in the game dresser bag, and take a card rack for each player. Make sure that each card box is placed in front of one of the four sides of the board. Also, give paper and pens to everyone. This way you can keep track of all your points. If your team wants to get in a better mood, each player can bring their own Scrabble scorebook.

Agree on the dictionary you will use for the challenge.

Sometimes during the game, someone may play a word that the other players think is invalid. In these cases, you should look up the word in the dictionary. Make sure everyone knows the dictionary to use and refer to when problems arise. Or use the official "Word Checker for Scrabble®" app instead. Prohibited words include Proper nouns (name, location, etc., starting with a capital letter) and Abbreviations such as 'CIA', 'FBI' or 'USA'. Use a prefix or suffix, such as "anti-" or "-ful". Hyphenated words like "short-lived" or "old". Other English words are incomplete and informal, such as "ridic" (for "ridiculous").

Put the 100 tiles in the bag and shake.

If you want to choose all the letters at random so no one knows what you're drawing, fill a bag with all the tokens, tie it with string and shake it up. Who goes first is determined by the tiles you draw, luckily.

Draw tiles to decide who plays first.

Spread the bag around the table and ask each player to draw a token. Then put each person's face on the table. The player with the letter closest to the letter "A" plays Scrabble first. When someone draws a blank tile, the game starts automatically.

- After arranging everyone's order, put all the letter tiles back in the bag and shuffle them again.

Fill the shelf with 7 tiles.

Whoever draws the tile closest to "A" goes first. Hold the bag above eye level so you can't see any of the tiles. Once all seven tiles have been removed, place them on the tile rack. The bag is then passed to the next player so everyone can write a card that fills the tile rack.

- Do not show your chips to your fellow players. One of the fun things about playing Scrabble is the fun surprises you get when you see someone else's spelling (or everyone is shocked by your awesome word choice). [2]

A requirement features list for a possible computer-based solution for the game using the MoSCoW***Must-Have(M):***

- User Authentication: Establish a secure login system for players to log in individually to the game.
- Interactive Scrabble Boards: Develop digital representations of Scrabble boards that look good to use.
- Letter Tile Management – Create a system that allows players to draw, transfer and place character tokens on the digital board.
- Scoring Mechanism: Includes a precise scoring algorithm that calculates the score based on the words generated and the coin squares used.
- Multiplayer Features: Multiple users can join a game session, each with their own characters.
- Dictionary Integration: contains a complete dictionary to validate the words presented during the play.

Should-Have (S):

- Chat Feature: Integrate a real-time chat function to facilitate communication between players during the game.
- Turn Timer: Implement an optional turn timer to encourage a reasonable pace during gameplay.
- Offline Mode: Allow players to engage in the game without an internet connection for a more flexible gaming experience.

Could-Have (C):

- AI Opponent: Develop an optional AI opponent for single-player mode to provide a challenging experience.

- Customizable Themes: Include the option for players to personalize the visual theme of the game board.
- Statistical Tracking: Implement a feature to record and display player statistics over time.

Won't-Have (W):

- Augmented Reality Integration: Exclude the integration of augmented reality features for simplicity and focus on core gameplay.
- Voice Recognition: Omit the implementation of voice recognition for word submission due to potential accuracy issues.

Prioritizing features using the MoSCoW method ensures that essential components are addressed first, followed by features that enhance the user experience and additional functionalities that may be desirable but not critical.

TASK 2

1, IPO Table for the dice game program.

Input	Processes	Output
First Dice Roll	First Dice Roll	Value
Second Dice Roll	Second Dice Roll	Total
Third Dice Roll	Third Dice Roll	

2. A list of variable names used/required

Total – TOT

First dice roll- DR1

Second dice roll- DR2

Third Dice roll- DR3

3. Pseudocode representation

1, DISPLAY " Could you enter first dice roll ?"

2, INPUT variable name for first dice

3, DISPLAY " Could you enter second dice roll?"

4" Could you enter first dice roll ?"

5, DISPLAY " Could you enter third dice roll ?"

6, INPUT " Could you enter third dice roll ?"

IF DR1=DR2 and DR2=DR3

7, DISPLAY " Congrats there is three of a kind"

If DR1=DR2 and DR2=DR3 or Total>=15

8, DISPLAY "Congrats player wins"

Else

9, DISPLAY "Player loses"

Insert first dice roll

DR1 [Enter]

Insert second dice roll

DR1 [Enter]

Insert third dice roll

DR3[Enter]

If DR1=DR2 And DR2=DR3

There is three of a kind

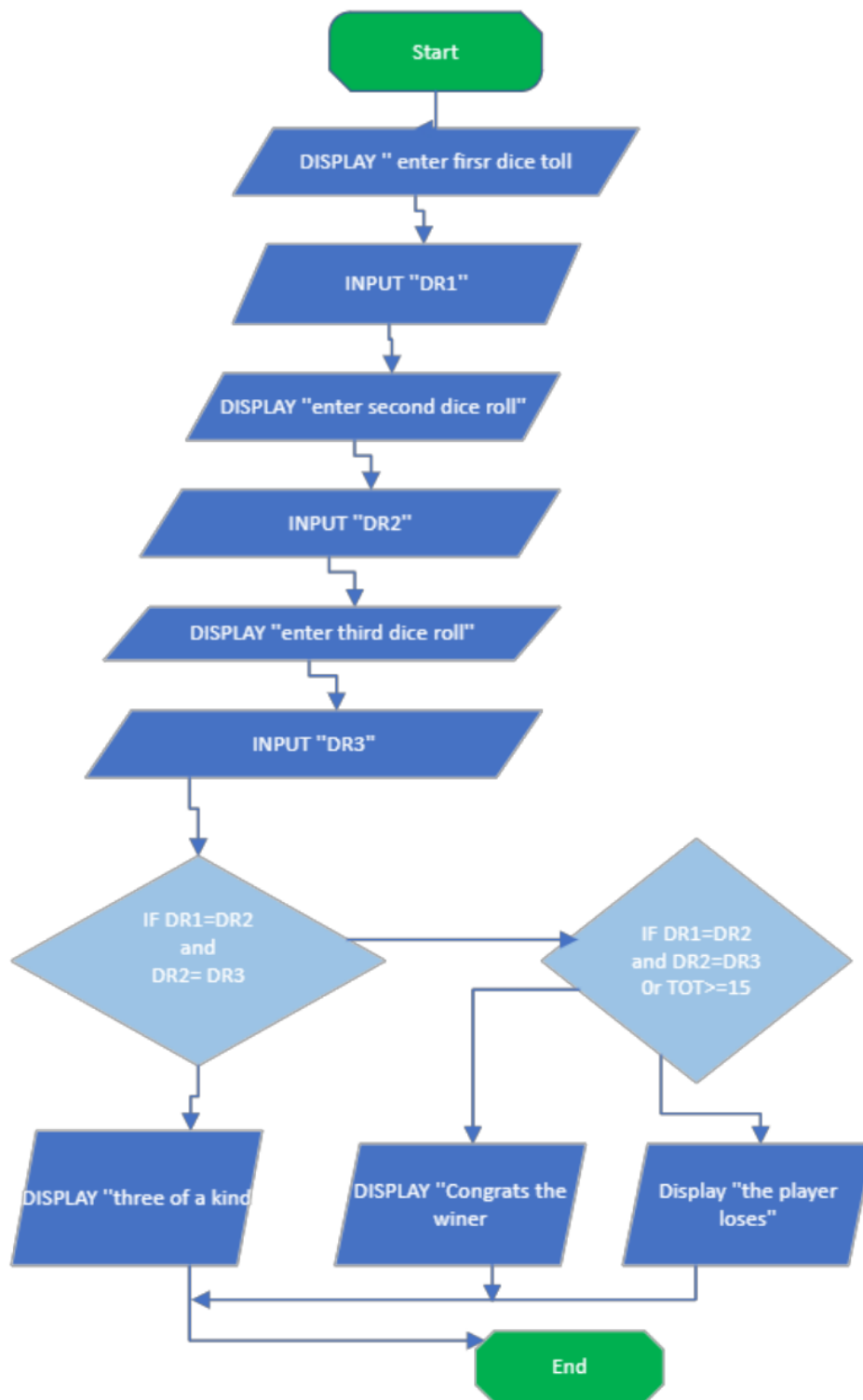
IF DR1==DR2 and DR2==DR3 or TOT>=15

Congrats player wins

Else

"Player loses"

4, Flowchart



5, Trace Table

Line	Throw 1	Throw 2	Throw 3	Three of kind	Is total >=15?	Win or Lose
1	1	2	1	No	No	Lose
2	3	3	3	Yes	No	win
3	5	6	4	No	Yes	win
4	2	4	1	No	No	lose
5	6	6	6	Yes	Yes	win

References

[1] (September 29,). *Scrabble*. Available: <https://www.coololdgames.com/tile-games/scrabble/>.

[2] (July 20,). *How Do I play Scrabble*. Available: <https://www.wikihow.com/Play-Scrabble>.

How to play Scrabble

GRADEMARK REPORT

FINAL GRADE

64/100

GENERAL COMMENTS

There is a good breakdown of the rules of scrabble with references utilised. Flowcharts presented are professionally laid out. Some of the pseudocode and flowcharts shown could be optimised further to reduce un-needed steps.

Document is presented well and has good formatting.

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10