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**PYTHON PROJECT REPORT**

**on**

SCRABBLE GAME

Submitted as partial fulfillment for the award of

*BACHELOR OF TECHNOLOGY DEGREE*

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Computer Science & Engineering

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**DECLARATION**

I hereby declare that the Project titled **“SCRABBLE GAME”** is submitted in fulfillment of the requirements of the Project-Based Learning of programming language in Computer Science & Engineering to Galgotias College of Engineering & Technology, Greater Noida. It is a bonafide record of my work carried out under the supervision of Mr.R.S.kohli and DR.Y.B Singh, Assistant Professor, Department of CS-B,GCET, Gr. Noida.

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**Certificate**

This is to certify that the project titled **“**Text adventure game**”** submitted by Sobia Siddiqua,is a bonafide work carried out by him/her under my supervision. In my opinion, the project work fulfills the curriculum requirement of the Project-Based Learning of Python subject.

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# TABLE OF CONTENTS

|  |  |  |
| --- | --- | --- |
| **Contents** |  | **Page No.** |
|  |  |  |
| Title Page |  |  |
| Declaration of the Student |  |  |
| Acknowledgement |  |  |
| INTRODUCTION |  |  |
| Game Code |  |  |
| Current features |  |  |
| Conclusion |  |  |
| Bibliography |  |  |
|  |  |  |

INTRODUCTION

***Scrabble*** is a [word game](https://en.wikipedia.org/wiki/Word_game) in which two to four players score points by placing tiles, each bearing a single letter, onto a [game board](https://en.wikipedia.org/wiki/Board_game) divided into a 15×15 grid of squares. The tiles must form words that, in [crossword](https://en.wikipedia.org/wiki/Crossword) fashion, read left to right in rows or downward in columns and are included in a standard [dictionary](https://en.wikipedia.org/wiki/Dictionary) or [lexicon](https://en.wikipedia.org/wiki/Lexicon).

The game is played by two to four players on a square game board imprinted with a 15×15 grid of cells (individually known as "squares"), each of which accommodates a single letter tile. In official club and tournament games, play is between two players or, occasionally, between two teams, each of which collaborates on a single rack

**Game Code:**

import random

# Scrabble letter distribution and their respective scores

letter\_scores = {

'A': 1, 'B': 3, 'C': 3, 'D': 2, 'E': 1, 'F': 4, 'G': 2, 'H': 4, 'I': 1, 'J': 8,

'K': 5, 'L': 1, 'M': 3, 'N': 1, 'O': 1, 'P': 3, 'Q': 10, 'R': 1, 'S': 1, 'T': 1,

'U': 1, 'V': 4, 'W': 4, 'X': 8, 'Y': 4, 'Z': 10

}

# Scrabble tile distribution

letter\_distribution = {

'A': 9, 'B': 2, 'C': 2, 'D': 4, 'E': 12, 'F': 2, 'G': 3, 'H': 2, 'I': 9, 'J': 1,

'K': 1, 'L': 4, 'M': 2, 'N': 6, 'O': 8, 'P': 2, 'Q': 1, 'R': 6, 'S': 4, 'T': 6,

'U': 4, 'V': 2, 'W': 2, 'X': 1, 'Y': 2, 'Z': 1

}

# Function to initialize the player's rack

def initialize\_rack():

rack = []

for \_ in range(7):

tile = draw\_tile()

rack.append(tile)

return rack

# Function to draw a random tile from the distribution

def draw\_tile():

tiles = [letter for letter, count in letter\_distribution.items() if count > 0]

tile = random.choice(tiles)

letter\_distribution[tile] -= 1

return tile

# Function to calculate the score of a word

def calculate\_score(word):

score = 0

for letter in word:

score += letter\_scores[letter]

return score

# Function to check if the word can be formed from the rack

def can\_form\_word(word, rack):

rack\_letters = list(rack)

for letter in word:

if letter in rack\_letters:

rack\_letters.remove(letter)

else:

return False

return True

# Function to update the rack after playing a word

def update\_rack(word, rack):

rack\_letters = list(rack)

for letter in word:

rack\_letters.remove(letter)

for \_ in range(len(word)):

tile = draw\_tile()

rack\_letters.append(tile)

return ''.join(rack\_letters)

# Main game loop

def play\_scrabble():

print("Welcome to Scrabble!")

rack = initialize\_rack()

score = 0

while True:

print("\nYour rack:", rack)

word = input("Enter a word (or 'quit' to exit): ").upper()

if word == 'QUIT':

break

if not can\_form\_word(word, rack):

print("You do not have the necessary tiles to form that word.")

continue

word\_score = calculate\_score(word)

score += word\_score

print("Score for", word + ":", word\_score)

rack = update\_rack(word, rack)

print("\nFinal score:", score)

print("Thanks for playing!")

# Start the game

play\_scrabble()

**OUTPUT:**

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**Current Features:**

1. Dynamic Paths: The game offers two distinct paths for players to choose from, adding an element of exploration and decision-making.
2. Randomized Outcomes: The game incorporates random events and outcomes,ensuring that each playthrough feels unique.
3. Expanding this aspect of the game could involve unique abilities, strengths, and weaknesses, requiring strategic decision-making and combat mechanics.

Conclusion:

The Scrabble Game, with its current features and future scope, aims to provide players with an immersive and thrilling experience. By expanding the game's world, enhancing gameplay mechanics, and incorporating player feedback, the motive is to create a captivating and dynamic memory building that keeps players engaged, entertained, and motivate to explore more.

# BIBLIOGRAPHY

-wikipedia

-slideshare.net

-python programming by Sumita Arora