



**AMITY UNIVERSITY**  
——— U T T A R P R A D E S H ———

**AMITY SCHOOL OF ENGINEERING AND  
TECHNOLOGY**

**3GAME: VOCABULARY & LOGICAL TESTING**

Submitted to:

Mrs Rajni Sehgal

Submitted by:

Nidhi Bansal

A2305216577

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Nidhi Bansal  
A2305216577

## ABSTRACT

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3GAME is a logical & vocabulary testing game where you can check your vocabulary with your logic. It is build with interactive graphics and can be translated into different languages. This quiz will give you an insight about your general knowledge, vocabulary and of course your logical vocabulary. The game will basically analyse your general knowledge with logic. Learning through game is quite fun, easy and interesting.

The quiz is developed as to make it interactive and interesting for the player. They will face three round in this game. Each round will test different skills of the player. There will be marks awarded in each round and on the basis of each round marks, the player will get promoted to the next round and so on. At last, a result will get generated which will provide details about the marks scored during the quiz/game by the player.

The quiz is developed in Python Programming Language and have a good Graphical User Interface. The player will enjoy this quiz.

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## CHAPTER 1 : INTRODUCTION

3GAME is an interactive, python-based graphical user interface game. This game tests the vocabulary of the player. There are different levels in this game or quiz.

The game starts with the main window. On the main window, the player can click “PLAY” button which leads to a widget where the player has to provide his/her personal details like his/her name, gender. After saving the details, a rules widget will show up and followed by windows and so on.

There are three rounds in this game.

The First Round is about guessing the logo and will test the general knowledge of the player. There will be an image of a logo with four options, the player has to guess the right answer and proceed to the next question. There are three question in the this round each of one mark. At least two questions’ answer should be correct to proceed to the next round.

The Second Round is about vocabulary testing. There will be two different questions with hints and each of two marks. The First question has four options, it will check the vocabulary. The Second question contains “rearrange the word” question, where the player has to write the answer in the given box. At least one of the two answer should be correct to proceed to the next round.

The Third Round is about logical vocabulary testing. There will be only one question in this round. It will contain an image, the player has to think logically to guess the correct word for the given image. There will not be any hint provided in this round. The player has to write the answer in the given box.

After completing the game/quiz, a result will be generated which shows the personal details of the player and the details of the scored marks in each round.

## CHAPTER 2 : WHAT IS 3GAME

This chapter describes details about the 3GAME, about its features, etc. There are two subtopics in this chapter as follows-

### 2.1 A BRIEF INTRODUCTION

3GAME is a vocabulary testing game. It will tell “How strong is your vocabulary on the basis of the marks obtained during this game quiz”.

In this game, anyone can test his/her knowledge of vocabulary. It just not based on vocabulary testing like in typical games; it will also test your logical vocabulary. “What is logical vocabulary” is that there will be some questions in which you need to think logically or sensibly and after that apply your vocabulary on that logic.

3GAME is quite of intermediate level but if you are good in vocabulary, you can win the game. Although just knowing vocabulary will not work here, it will also test your general knowledge, and mainly your logic.

Different levels of the game test different skills of the player.

In the first round, it tests the general knowledge of the player.

In the second round, it tests the strength of the player vocabulary

In the third round, it tests the logical vocabulary of the player.

This quiz game is also very interactive to play; it is mainly based on GUI (Graphical User Interface) programming. There will be the instructions which will tell you how to play the quiz and after finishing your quiz, you will be awarded your result.

### 2.2 FEATURES OF 3GAME

- 3GAME is an interactive quiz game which tests the vocabulary of the player.
- It has three rounds.
- Before starting the game, the player has to provide his/her personal details like name and gender.

- First round has three questions of each one marks. A player has to score at least 2 marks out of 3 marks to proceed to the next round.
- Second round has two questions of each two marks. There is a hint with each question though the player will not be awarded marks if he/she takes the hint. It is required to obtain at least 2 marks out of 4 marks in this round to proceed to the next round.
- Third round has only one question of 3 marks. There is no hint in this round. A player will be provided with a image and he has to guess the word by looking at it, after guessing, he can write the answer in the provided box and end the game.
- After ending the game, a result will shown up which will show the result of the player.

## CHAPTER 3 : MAKING OF 3GAME

This Chapter contains the details of the making of the 3GAME. This chapter will tell about the programming language used, why that programming language used, what are features, about the installation of the software, why that software has been chosen, which editor and packages used, etc.

### 3.1 ABOUT THE PROGRAMMING LANGUAGE

There are several programming languages available but 3GAME is made by using Python. Python is used because it supports graphical user interface programming and in very less number of code lines, one can easily make a good GUI.

#### 3.1.1 Why Python is used

Python is a very interactive, high-level and powerful language. It was founded in the late 1991 by the developer Guido Van Rossum.

Python is way easier programming language than any other programming language. Multiple programming can be done by using this language. Making Graphical User Interface is way easier in Python.[2]

#### 3.1.2 Features of Python-

- One of the simplest language: It is very easy to code and learn python. It does not require that much effort.
- Minimal coding is required: It is one of its type language where you do not need to write more number of code lines.
- Powerful language: As the python has simpler syntax and more readability, that's why it is more powerful than Java.
- Very easy to learn for the beginners in the coding: The beginner can learn Python easily. It is sometimes like learning English though strict in rules.
- High-level Language: A high level language is that in which a programmer can do coding and closer to the human language. Python is a High-Level Language.
- Like Java, it is also platform-independent: Python can perform very well on any platform whether it is windows, macOS or linux.



- Object-oriented language: Python is a Object-oriented language but not fully. It does not allow that much strong encapsulation which is one of the core properties of an Object-oriented language.
- Support Graphical User Interface: GUI making is quite easy with Python.

## 3.2 INSTALLATION OF PYTHON

There are different ways and websites to install the Python in your laptop or desktop. There are some direct python application software like python3.6, pycharm etc available on internet.

### 3.2.1 About ANACONDA:-

Anaconda is used to make 3GAME because it has user level installation facilities. It is available for WINDOWS, macOS, LINUX.

System requirements for ANACONDA-

- 32 or 64 bit computer
- Minimum 3 GB disk space to download
- Operating system- WINDOWS, macOS or LINUX
- Python 2.7, 3.4, 3.5 or 3.6

### 3.2.2 Features of ANACONDA:-

- It is a free and open- source python software distribution. It can be download by the website [www.anaconda.org](http://www.anaconda.org) [1]
- It comes up with anaconda Navigator which is like a catalogue of Anaconda software.
- It has user level installation facilities.
- It comes with around 720 open source packages add-ons. And one can install any of the open source packages by using Anaconda Prompt.
- It removes the risk of messing up required system libraries.
- It has some pre-installed editors and packages as well.

### 3.2.2 Editor and Package used:-

EDITOR USED: Spyder IDE is used while developing the 3GAME. It is pre-installed in the ANACONDA.

PACKAGE USED: PyQt is used for providing Graphical User Interface in 3GAME. It is not pre-installed in the ANACONDA and need to be installed by using ANACONDA PROMPT. By writing “conda install pyqt=4” anyone can installed it in their desktop/laptop.

3GAME GUI is developed by using PyQt 4 though PyQt 5 is the newest version.

## CHAPTER 4 : DESIGNING OF 3GAME

This chapter describes the designing or drafting of the 3GAME- how it makes, what are the ideas behind the game, what are the methods used during designing, etc.

The design of the 3GAME is as simple as normal quiz game. It has main window firstly, then as the player proceed more and more window will show up. At last, the Result window will show up which will provides the result of the player's performance.

### 4.1 FLOWCHART OF THE 3GAME DESIGN

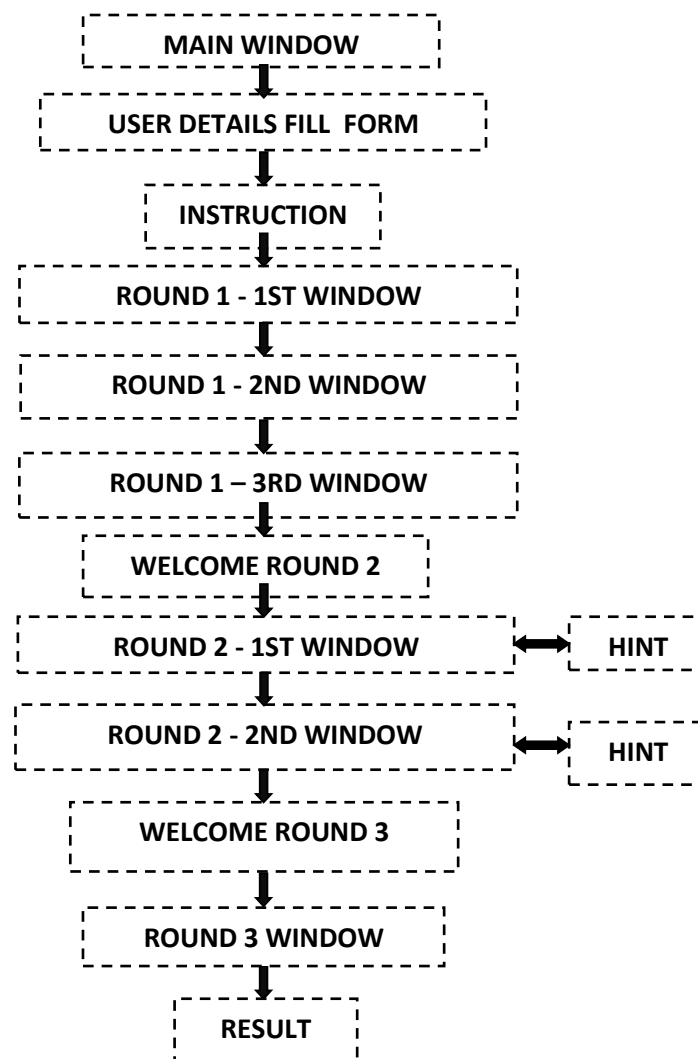


Fig 4.1: flowchart of 3GAME

Flowchart is the way to represent any game or program design in a simpler way. It tells how the game or quiz will proceed and what will happen at which phase.

## 4.2 METHODS USED

In GUI making of 3GAME, lots of methods are used of PyQt. A list of methods is as follows: [3]

- `setObjectName( )`: To set the Object name.
- `setFont( )`: To set the font of the text.
- `setAutoFillBackground( )`: To set whether to fill background automatically or not.
- `QtGui.QRadioButton( )`: To set the radio button on the window.
- `setGeometry( )`: To set the geometry of the window.
- `QtGui.QLabel( )`: To set the label on the window.
- `QtGui.QMenuBar( )`: To set the menu bar on the window.
- `QtGui.QPushButton( )`: To set the push button on the window.
- `setWindowTitle( )`: To set the window title.
- `setPointSize( )`: To set the font size.
- `setBold( )`: To set whether to make the text bold or not.
- `resize( )`: To resize the window.
- `setMinimumSize( )`: To set the minimum size of the window.
- `setMaximumSize( )`: To set the maximum size of the window.

## CHAPTER 5 : WORKING OF 3GAME

This chapter will tell “How does the 3GAME work?”. It contains the details of each and every thing which can happen to the quiz. The details are as follows:

### 5.1 HOW DOES THE 3GAME WORK

The working of the 3GAME is describe as follows:-

- 3GAME starts with the main window. In the main window, there is a button labelled as “PLAY”.



Fig 5.1: Main Window

Main window has a background image with 3GAME written in between of the window with a button called “PLAY”. [4]

- If a user clicks the Main Window PLAY button, the next widget gets open. In this widget, user has to fill in their details.

**ENTER YOUR DETAILS**

**Name:**

☐ Male ☐ Female

Fig 5.2: Gamer Details fill in form

In this widget, a player has to enter his/her personal details like Name, and has to select his gender by choosing any of the “Male” or “Female” radiobutton. After filling all the details, the player has to click on “Save” button.

- After fill up the details in this widget, the user can save the details. When the “Save” button get clicked, a new window get open. The name of the new window is “RULES” which shows the details of the game.

**RULES OF THE 3GAME**

**WELCOME TO THE 3GAME**

THIS GAME HAS THREE ROUNDS.

**ROUND 1 (BEGINNERS ROUND):** IN THIS ROUND, YOU NEED TO GUESS THE NAME OF THE LOGOS. LOGOS PICTURE AND 4 OPTIONS WILL BE PROVIDED. THERE WILL BE 3 QUESTIONS IN THIS ROUND. IF YOU GIVE AT LEAST TWO ANSWER CORRECTLY, YOU WILL BE PROMOTED TO THE NEXT ROUND. THERE WILL NOT BE ANY OPTION IN THIS ROUND.

**ROUND 2 (INTERMEDIATE ROUND):** IN THIS ROUND, YOUR VOCABULARY WILL BE TESTED. THERE WILL BE 2 QUESTIONS WITH THE HINT. BUT IF YOU USE HINT, YOU WILL NOT BE AWARDED WITH MARKS THOUGH YOU CAN PROCEED TO THE NEXT QUESTION. IF YOU GIVE AT LEAST 1 ANSWER CORRECTLY, YOU WILL BE PROMOTED TO THE NEXT ROUND.

**ROUND 3 (EXPERT ROUND):** IN THIS ROUND, YOU LOGICAL SKILL WILL BE TESTED. THERE IS ONLY ONE QUESTION AND NO OPTION AND HINT WILL BE PROVIDED. TO WIN THE GAME, YOU NEED TO PASS THIS ROUND.

AFTER COMPLETING THIS GAME, A RESULT OF YOUR WILL BE GENERATED.

Fig 5.3 : Instruction of 3GAME

In this widget, there are rules shown which tells the player about the details of the game and how does it work, what will be the difficulties in playing this quiz, etc.

- Once the player goes through the rules, and clicked the “SKIP” button, the next window will show up which contains the first question of the “First Round”. There will not be any hint in this Round. And the player has to guess which one of the four options will be correct for the given logo.



Fig 5.4 :First Round- first question

This is the first question of the First Round. This question contains a logo image with given four options. The player has to click on the option which is right according to him/her after seeing the logo image. After selecting the option, he/she can proceed to the next question by clicking on the “PROCEED” button.

- After completing the first question and clicking the “PROCEED” button the player now see the new window which contains the second question of the first round.

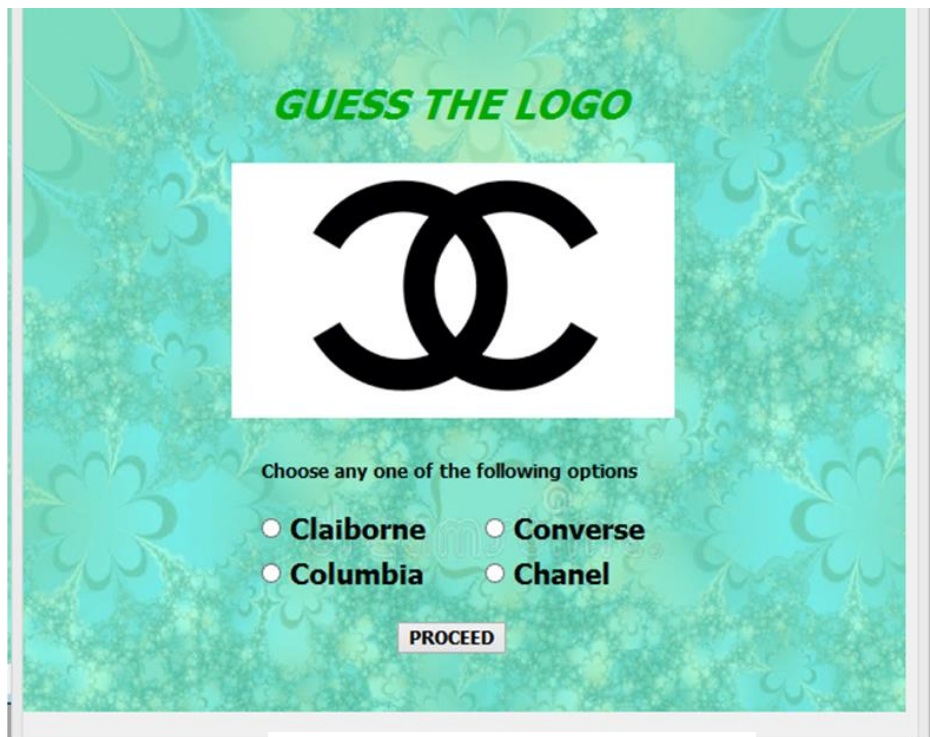


Fig 5.5 :First Round- second question

This is the second inquiry of the First Round. This inquiry contains a logo picture with given four choices. The player needs to tap on the choice which is appropriate as per him/her in the wake of seeing the logo picture. In the wake of choosing the alternative, he/she can continue to the following inquiry by tapping on the "PROCEED" button.[5]

- The player can move to the next question after finishing this and tapping on “PROCEED” Button. A new window which contains the next question will show up.





Fig 5.6 :First Round- third question

This is the third question of the First Round window and hence the last question of this Round. The player has to choose the correct option and proceed to the next round by tapping on “PROCEED” button.

- When the player completes the question and clicked the “PROCEED” button, a pop-up type of window will show up which welcomes the player to the next round.

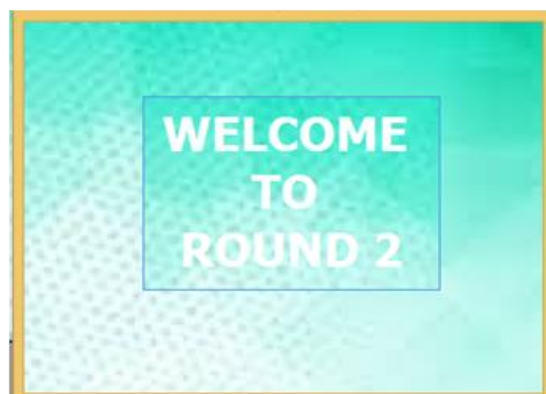


Fig 5.7: Welcome to round 2 widget

This is the welcome widget which tells the player that he has finished the First Round and now he/she are proceeding to the next i.e. Second Round.

- After showing the message “WELCOME TO ROUND 2” the widget will get close after some time and a new window will open up which contains the first question of the second Round.

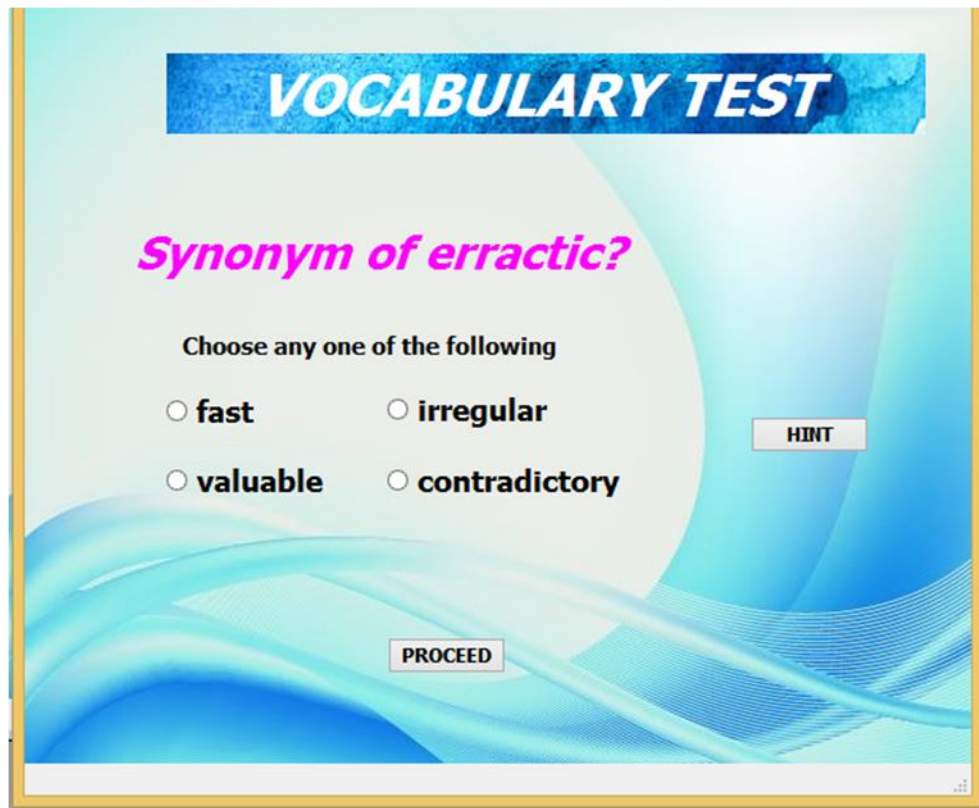


Fig 5.8 : Second Round- first question

In this window, there is a vocabulary question with four given options. There is hint also in this Round. A player can use the hint by clicking on “HINT” button though the marks will not be awarded if he/she uses the hint. But they can proceed to the next question/Round. There is another “PROCEED” button also, if the player click on the proceed button; he/she will go to the next question window.

There will be two scenarios in this window:

1. Either the player goes for the hint
2. Or the player goes for the next question

- If the player clicks on the “HINT” button, a HINT window will show up that is

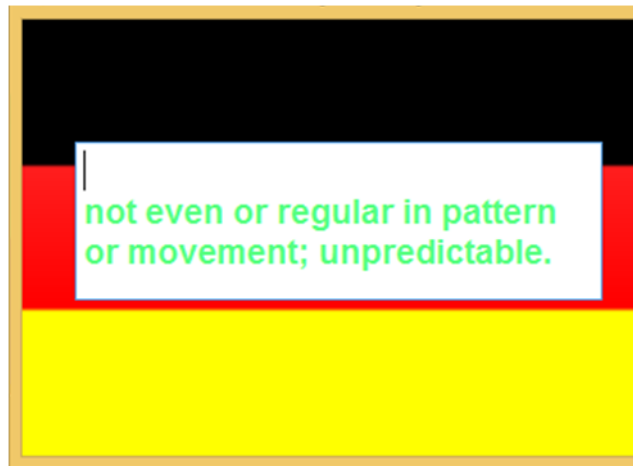


Fig 5.9: Hint1

This widget will give the hint of the question and will get close after sometime.

- If the player clicks on the “PROCEED” button, a new question window will showed up

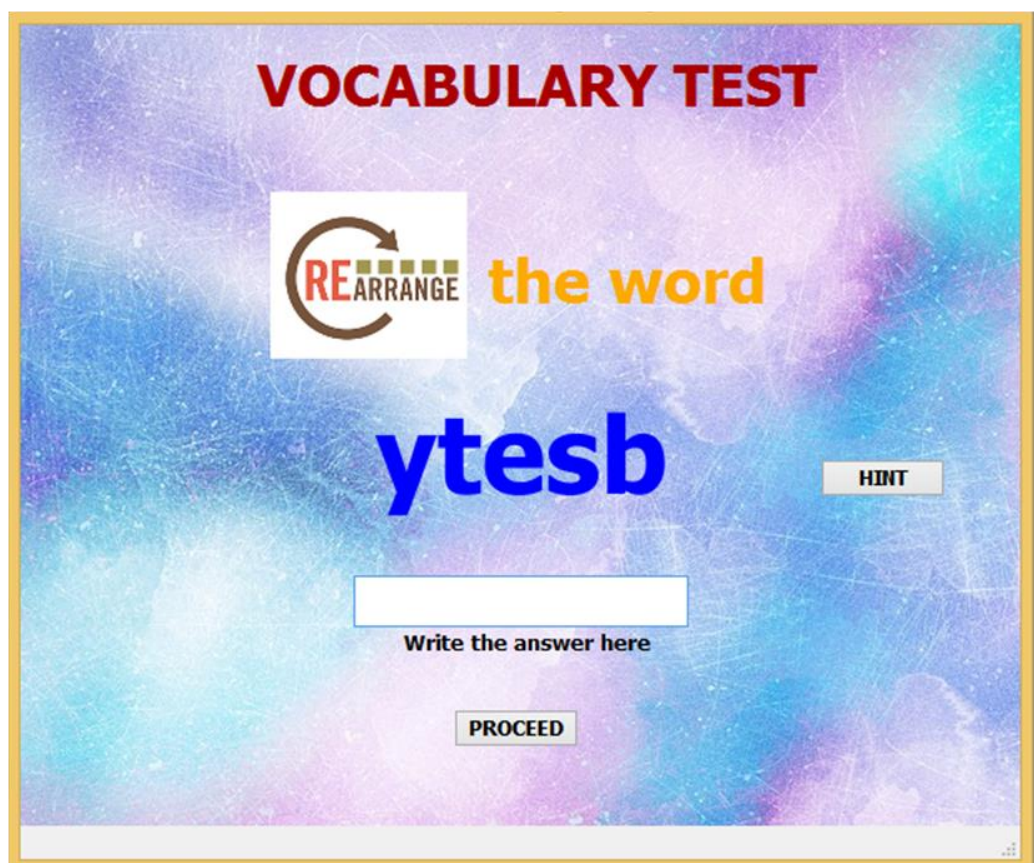


Fig 5.10 : Second Round- second question

In this window, a question of rearranging the word will show up. The player has to write the answer in the given box. He/she can take the hint also or go for the next round/question.

Here also, there will be two scenarios

- Either the player clicked on the hint button
  - Or the player clicked on the proceed button
- 
- If the player clicked on the “HINT” Button- A new window will show up which contains the hint and will close itself after sometime.
  - If the player clicked on the “PROCEED” Button, a welcome page will show up which contains the message “WELCOME TO ROUND 3” and will get close itself after sometime.
  - After the Welcome message again, a new window will show up which contains the THIRD ROUND QUESTION.

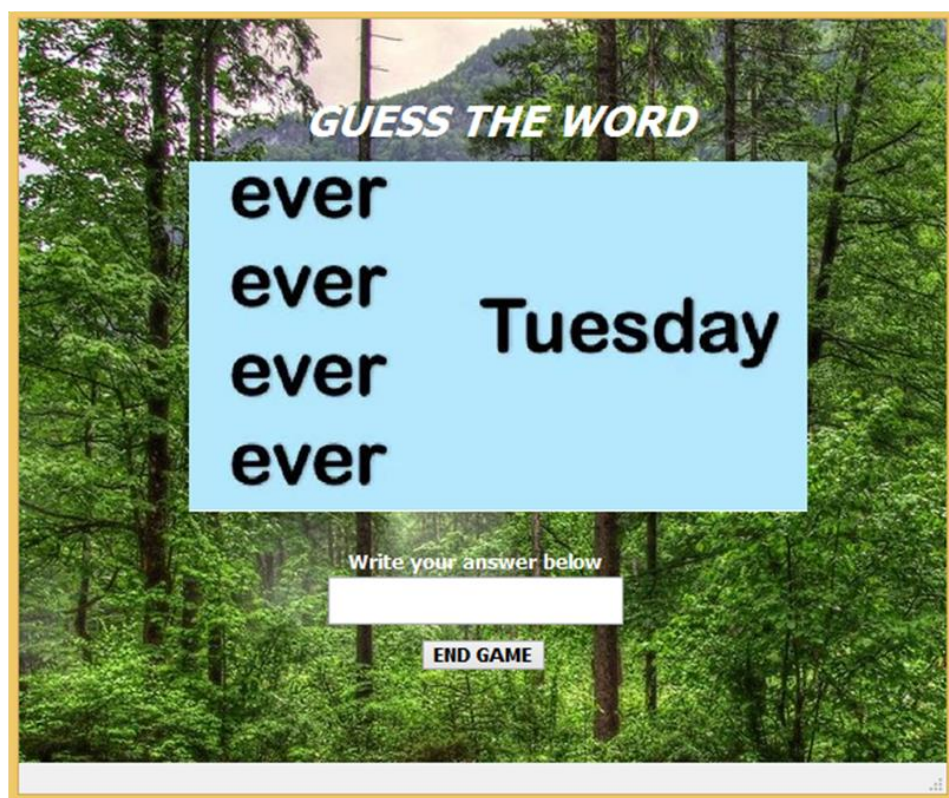


Fig 5.11: Third Round question

There is a logical question in this last round window. A player has to write the answer in the given box. There is no hint in this last round question.

After writing the answer, the player can click on “END GAME”. This will end the game and a result window will show up.



- The last window is the Result window which will show all the details of the player.

**RESULT**

Name:  Gender:

ROUND 1 SCORE

ROUND 2 SCORE

ROUND 3 SCORE

TOTAL SCORE:

Fig 5.12 : Result window

This window will show all the details of the player- Name, Gender, Round 1 score, Round 2 score, Round 3 score and the total score.

## CONCLUSION

3GAME is a quiz where you can get the information about your logical vocabulary. This quiz is made by using Python. It is a powerful, interactive, object-oriented programming language. It is simple to use, anyone can learn python easily. Python also provide many libraries where you can create a good GUI. Python provides a higher functionality with less number of code lines.

By playing 3GAME quiz, one can work on ones vocabulary after getting the result. This can provide a help in teaching vocabulary to the students.

This game is suitable especially for schools.

This game can also be retranslate into different languages which can help more number of students.

## REFERENCES

- [1] <https://anaconda.org/>
- [2] <https://pythonspot.com/gui/>
- [3] <https://www.tutorialspoint.com/python/>
- [4] <https://www.w3schools.com/python/>
- [5] <https://www.programiz.com/python-programming>