iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 8 **Issue:** XI **Month of publication:** November 2020

DOI: https://doi.org/10.22214/ijraset.2020.32144

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 8 Issue XI Nov 2020- Available at www.ijraset.com

Vexed Fowls

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Abstract: ***This project mainly deals with the development of a 2D game application for Windows OS. Now, the video game market appears to be of an unprecedented stage, which means the springing up of more platforms lead to more competition. The video game market is not just serviced for PC, PS3 and Xbox. The mobile platforms basis on iOS, Android and Windows Phone rise sharply. As a result, "cross-platform" come into people's eyes. Real time 2D/3D games have existed for approximately ten years now.***
Rather than continually updating these older games to remain compatible with changing devices and market place requirements, our team have decided to focus on providing new experiences in the gaming world by using our skills.
We have used python programming language to build this game, python has some libraries such as Pymunk and PyGame, we used these libraries to build this game and our main aim is to build this game without using any GameEngine such as Unity etc. We use images, sprite etc in this game.
PyGame is one of the libraries in python language that is used to develop games. By the help of pygame we can add background music to the game. Also, we can define the structure of the game by using pygame library. With the help of pygame we will use sprites to animate the images.
Pymunk is a pythonic library that can be used to create 2D rigid body physics.
Perfect when you need 2d physics in your game, demo or other application! It is built on top of the very capable 2d physics library chipmunk.

I. INTRODUCTION

Our project namely "VEXED FOWLS" is similar to the game namely "ANGRY BIRDS". As Angry birds is very popular game and that game can not be developed without any gaming engine, but our motive is to develop a game similar to angry birds in a simple way without using any gaming engine. So, we have developed this game using simple python language and we have made this game compatible to desktops having operating systems like windows, Linux, Mac.
This game will have features like scoreboard, achievement stars, multiple levels, pause, resume, offline mode.
Scoreboard will be based on players performance. Scoreboard will depend on how we hit the pigs by birds, if the bird directly hits the pig then the player will score higher, if the bird first strikes structures then structure will hit the bird then the player will get low score, so scoreboard will be adjusted according to players experience and slingshot perfection.
Achievement stars directly depend upon the scoreboard, if the player scores below 800 points then there will be no star given to the player, if the score lies between 800-1000 then player will get 1 star, if the score lies between 1000-1200 then the player will get 2 stars and if the score is above 1200 then the player will get all the 3 stars.
This game will have multiple levels. The starting levels will be easy to play, but as the level increases the difficulty of the game will also increase. You will find separate design for each level and also there will be a background music while a player plays the game.
In this game we will have options to pause and resume the game, so whenever the player wants to pause and resume the game he can do so without any restriction.

II. METHODS USED

To develop this game, we have used simple python programming language. As python is easy to use, scripted language and is very famous in this era, so we use this language to make this game without using any gaming engine.
Some python libraries that we have used are as below:

1) *PyGame:* PyGame is one of the libraries in python language that is used to develop games. By the help of pygame we can add background music to the game. Also, we can define the structure of the game by using pygame library. With the help of pygame we will use sprites to animate the images.

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2) *Pymunk:* Whenever we need 2d rigid body phyiscs in our game we use pymunk in that case. It is built on top of the very capable 2d physics library Chipmunk. There is a one class in pumunk namely pymunk vec2d which is used whenever we need a vector. The vec2d class is used almost everywhere in pymunk to define vector gravity in space. With the use of pymunk we use different bodies in our project like static, kinematic and dynamic. In static wherever we place the body that will not move even if that body is hit. In dynamic if we will place the body at top position that will come downwards with the effect of gravity.
3) *Math:* It is one of the library in python which is used for calculations.

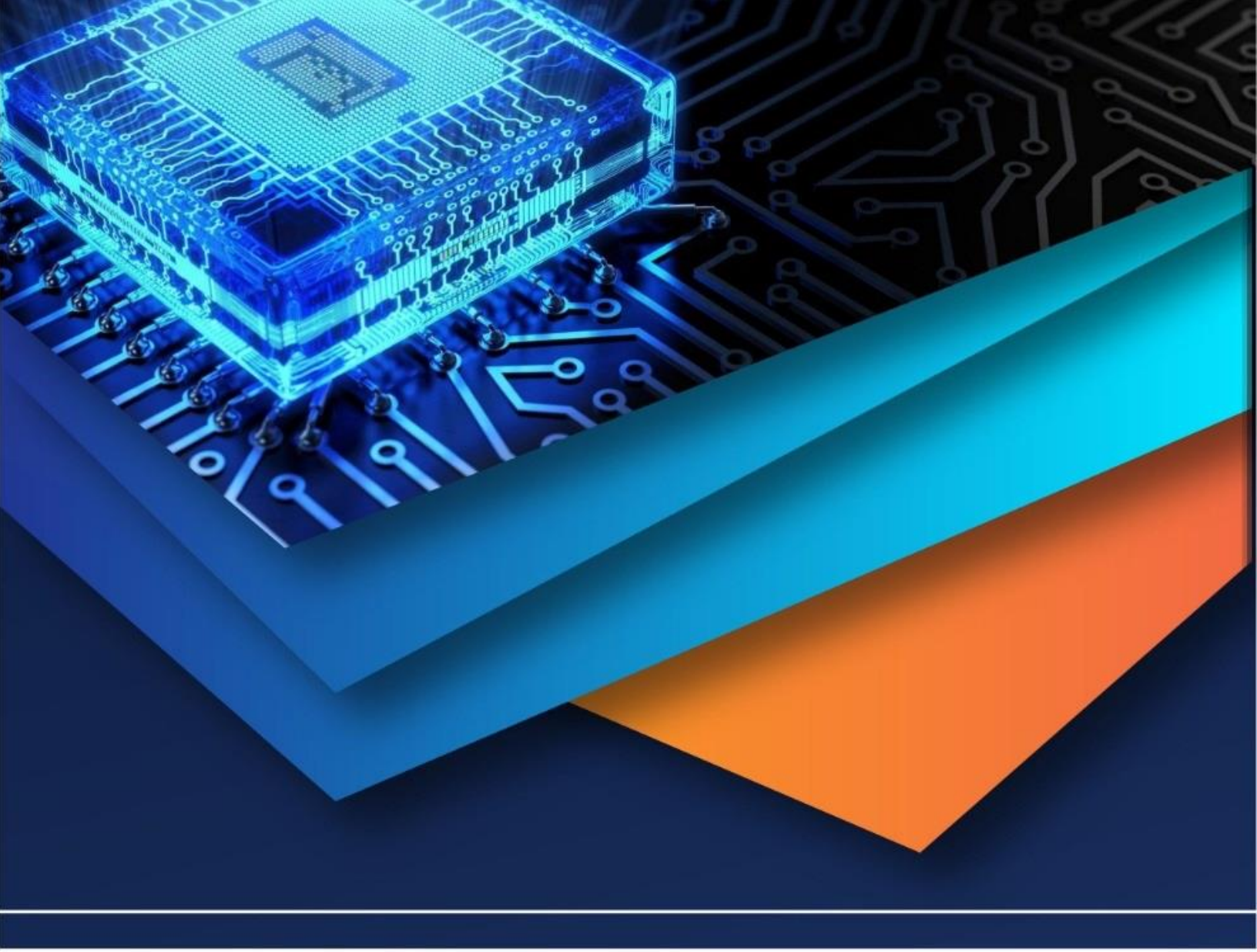
III. CONCLUSION

By studying methods properly and applying them we have developed the game named "VEXED FOWLS". With the use of python and its libraries we have created this game without using any Gaming Engine in order to make it simple to understand with lower graphics.
We played this game as well and experience all of the features that we have mentioned above.
We worked on our motive properly and we hope all the players will find this game satisfactory.

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[1] Python: https://docs.python.org/3.8/
[2] PyGame: https://www.pygame.org/docs/
[3] Pymunk: http://www.pymunk.org/en/latest/pymunk.html

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