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Assignment Cover Letter

(Individual Work)

Student Information:		**Surname**	**Given Names**	**Student ID Number**
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Course Code	**: COMP6335**	**Course Name**	**: Introduction to Programming**
Class	**: L1CC**	**Name of Lecturer(s)**	: 1. Jude Martinez
Major	**: CS**		
Title of Assignment (if any)	: Magic Rock Papers Scissors		
Type of Assignment	**: Final Project**		
Submission Pattern			
Due Date	**: 23-11-2018**	**Submission Date**	**: 23-11-2017**

The assignment should meet the below requirements.

1. Assignment (hard copy) is required to be submitted on clean paper, and (soft copy) as per lecturer's instructions.
2. Soft copy assignment also requires the signed (hardcopy) submission of this form, which automatically validates the softcopy submission.
3. The above information is complete and legible.
4. Compiled pages are firmly stapled.
5. Assignment has been copied (soft copy and hard copy) for each student ahead of the submission.

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Signature of Student:

Magic Rock Paper Scissors

Name: Alessandro Christopher Leonardo
ID: 2201815162

1. Description

Concept:

This project is a Pygame project. It aims to create a graphical rock paper scissors experience and develops upon it further. The premise is simple, Rock beats Scissors, Paper beats Rock, and Scissors beats Rock. However, an extra layer is added by the addition of "Magic". The enemy here makes decisions based on a simple random number algorithm. By using the Magic function, the player disrupts this and skews the odds of the computer into picking either one of the three. By doing this, the player may expect to win more games than a regular rock paper scissors game.

2. Discussion

Implementation:

The entire program is run on the Pygame package. Pygame is a package which allows its user to create games on Python, using simple concepts like rects, surfaces, to simulate a game.

How it works:

The program works quite simply. When the game is launched, the user is presented with a play button. Then you are presented with a screen of 2 pictures, one is a graphical represantion of you and the other represents the opponents, and 4 buttons. The pictures do not have a functionality due to the nature of the game, rather it is simply there to add the illusion of combat.

There are two HUD features, one is the score at the top and the other is the probability on the right. The probability represents how likely it is for the opponent to use a certain move. For example, a probability of "Rock:1 Paper:1 Scissors:1" shows that the odds of using any of the three is equal. On the other hand, a probability of "Rock:10 Paper: 1 Scissors 1" represents that the opponent has a 10 in 12 (10 + 1 + 1) odds of picking Rock, so the player would be advised to pick Paper hear if they wish to win.

The 4 buttons are Rock, Paper, Scissors, and Magic. Choosing Rock, Paper, or Scissors triggers the "combat" function, in which the enemy move and the player's move is compared and is score either loss, draw, or a victory. The Magic button serves to alter the enemy's probability. The button can be used up to two times, and is reset after every combat. The player may choose to use twice for the maximum, or less if the odds are already great and they do not wish to risk changing it. Due to the random nature of the Magic button, if you have a probability of ("Rock: 5 Paper: 2 Scissors: 2"), pressing the Magic button might result in you having ("Rock:5 Paper:5 Scissors: 2"), which is worse than the first since now instead of having a high chance of winning by choosing Paper, now it's a 50/50 between Paper and Scissors.

Class Explanation:

The classes in this program are used to create the objects in the game and their properties, it is quite straight forward. The Probability, the Player object, the Enemy object, and all the buttons all use their separate classes. There are no inheritances in this program.

Video Demonstration:
https://www.youtube.com/watch?v=0SbUD3D8K2g&feature=youtu.be