Problem Situation

Marcela Hernández Ramírez A01658023

TC1028. Group 117

October 2022

Computational Thinking for Engineering

Technological Institute and Higher Studies of Monterrey

School of Engineering and Science

Capstone Project

In this project, two programs will be carried out. Both have a positive impact on the education of children. Thanks to the test called PISA, which was carried out throughout the world in 2018, reporting that Latin America had a too low level academically speaking because onlythe 1% of students in Mexico had an outstanding score. What we are looking for by making this code through the Python application is to increase the number of Mexican outstanding kids.

Technology has been an important parameter that evolves as the years go by and cover several aspects such as children's education, so we made the games of "hangman" and "Random Numbers" with the purpose that children play and interact with them, learn new words and the meaning of them also, students will develop logical and analytical thinking all this through statistics and probability. This project is with the idea that children have most of their days influenced by technology, many of them use it to play, as well as to search for information for their projects and homework. Programs can be very helpful for children not only improve their math, writing, and science skills but find a love for the subjects and spark diverse interests. Something very important to mention regarding the programs is that they must be educational and have a level that is equal to children of that age, that is fun and that contains material in which students can identify with them and find a way in which they can project their knowledge and improvement based on tests and games having an entertaining time. It's important to emphasize that most programs have certain languages that become complicated and confusing for children so when we were creating these programs, we made the language as understandable for children as possible.

Hangman Game

Kids manual:

1: You must put your name so the computer can recognize your punctuation

2: When you put your name, the program will display a sentence with the meaning of a word related to science and mathematics.

3: You must try to guess the word by putting the letters that you think can be found in the word you are looking for

4: It is very important to know that if you miss a letter, you will lose, and the word will be incorrect.

Teacher´s manual:

This game will help students develop their mind along with their ingenuity, the game includes words related to math and science topics with the purpose that students recognize these words and understand the meaning of each one by playing.

1: The student must enter their name for the program to recognize it

2: When putting the name, the system should give you a meaning of a random word which you should solve

3: You will have several attempts in which you must use them by putting the letter of the word that you think it is, by not hitting it you lose attempts which can lead you to lose the game

4: When discovering the word, more words will come out.

At the end of the game the students will know a very important vocabulary that is going to help them.

Random Numbers Game

Kids manual:

1: This game is easier to play, but it's more tedious.

2: The program will ask you to guess a number with 4 different digits.

3: You must try to guess the number by putting different combinations. You'll have infinity chances.

4: It is very important to know that you can't lose in this game, but you'll only win if you guess the correct number.

Teacher´s manual:

This game will help students to develop logical and analytical thinking. All this through statistics and probability.

1: The program will start directly; the program won't ask for the name of the player.

2: You will have infinity of attempts in which you must use them by putting the correct number of the combination.

4: When discovering the number, the program will congratulate you.

At the end of the game the students will be satisfied to have solved the game.

Link of the drive folder with the games and the hangman words:

https://drive.google.com/drive/folders/12F_xn_O-Km7k9hDaH-AxkaRIBwk5G9Yf?usp=sharing