# Summary + Overview

Vision / Goals

* Implement a Software-As-A-Service Wheel of Fortune Game.

Goals

* Interactive game where the user plays against the computer.
* Computer develops intelligence by utilizing Machine Learning or IA models.

Major Components

Front End –

* Game Display: Spinning Wheel, Grid, etc.
* Graphs: Data visualizations

Back End –

* Data Extractions: Extract phrases from an external source via web scrapper (file: v1.0.0\_data\_scrape\_script.ipynb)
* Storage: Data stored in Postgres & CSV (file: all\_categories\_and\_phrases\_csv)

Analytics –

* Machine Learning Models: Tested multiple models.
  + Models with low scores = 3: Neural Network (Deep Learning), SVM, & Kmodes.
    - In the exception of Word2Vec, the data inputted is extracted from the web-scrapped data.
  + Model with high score = 1: Word2Vec
    - Architecture adapted Skip-Gram, score close to 1.
  + ML not implemented in overall game because this case is more fit for IA (hard code IF statements + conditions); predicting text of a large data set comprising multipole unique text data is somewhat impossible to achieve high accuracy score.
  + The score generated from Word2Vec is a “similarity score” – how close are the words to the input in context.

# Guideline – Run Code

## Visualizations

**Display Bubble Graph**

1. Enter the folder “Static – Visualization”
2. Open the “index.html” file, graph should populate

## Machine Learning

**Running Models**

To run the most successful Word2Vec

1. Open the file name “Supervised\_Model\_Word2Vec\_Final” in Jupyter Notebook, the file is in the “Data-Processing” Folder.
2. Run the Kernel

To run other models (scores are zero) – Apply steps 1 and 2 from above to the below files.

1. Supervised\_Model\_Neural\_Final.ipynb
2. Supervised\_Model\_SVM\_Final.ipynb
3. Unsupervised\_Model\_Kmodes.ipynb

## Game

1. Enter on the “Static – Game” folder and then click the “index.html” file, game screen should populate asking for credentials.
2. User the below login credentials:
   * User: [antonio@wof.com](mailto:antonio@wof.com)
   * Password: 123
3. After a few seconds, a wheel will populate to decide who will play first (computer 1, computer 2, or user).
4. Once the user’s turn comes up, selections can be chosen at the bottom of the page (“Buy a Vowel”, “Solve a Problem”, etc.).