Arcavia – GDD

Table of Contents

[High Concept 2](#_Toc158063207)

[Requirements 2](#_Toc158063208)

[Technologies 2](#_Toc158063209)

[Languages 2](#_Toc158063210)

[Framework 2](#_Toc158063211)

[Sound 3](#_Toc158063212)

[Components 3](#_Toc158063213)

[arc-frontend 3](#_Toc158063214)

[arc-scripts 3](#_Toc158063215)

[arc-db 3](#_Toc158063216)

[Arcade Games 3](#_Toc158063217)

[Data 3](#_Toc158063218)

[Required entities 3](#_Toc158063219)

[Files 3](#_Toc158063220)

[Database 4](#_Toc158063221)

[Country 4](#_Toc158063222)

[Landmark 4](#_Toc158063223)

[Symbol 4](#_Toc158063224)

[Company 4](#_Toc158063225)

[Query 4](#_Toc158063226)

[Repository 5](#_Toc158063227)

[arc-frontend 5](#_Toc158063228)

[arc-scripts 5](#_Toc158063229)

[arc-db 5](#_Toc158063230)

[Graphics 6](#_Toc158063231)

[Symbols 6](#_Toc158063232)

[Gameplay 6](#_Toc158063233)

[Controls 6](#_Toc158063234)

[Automation & Scripts 6](#_Toc158063235)

[References 6](#_Toc158063236)

# High Concept

Arcavia is a web game application based on Arcade games combined with Trivia queries.

The game difficulty raises as long as the player passes levels.

The player can choose to play from 4 games and choose query category.

# Requirements

* The app should allow the user to choose one of the following games:
  + Bubble-Popper
  + Asteroids
  + Space Invaders (Raptor engine)
  + Maze Game (Pacman engine)
* The app game should consist of several rounds.
* The app should generate in every round series of queries to the user in increasing difficulty according to user rank
* The app should pop-up in the end summary page with score statistics of the user in every round
* The app should use DB of data collected from several data sources as
  + Countries
  + Landmarks
  + Symbols
    - Animals and Nature
    - Food and Drinks
    - Sports
  + Companies
* The app should use DB of queries generated by automated script gen\_queries
* The script gen\_queries should generate queries with parameters to make queries random and ranked by difficulty

# Technologies

## Languages

* Angular
* HTML5
* CSS3
* JavaScript

## Framework

* JS Canvas
* Code (text editor)

## Sound

* BFXR
* JS sound package

# Components

## arc-frontend

* Frontend application implemented in HTML, CSS, JavaScript

## arc-scripts

* Scripts implemented in Python 3

## arc-db

* Load json files into class objects or Google Firebase

# Arcade Games

* Bubble-Popper
* Asteroids
* Space Invaders
* Maze (Pacman engine)

# Data

Data location: C:/arcavia-data

## Required entities

* Countries
* Landmarks
* Symbols
* Companies

## Files

* csv\_files
* images
  + flags
  + landmarks
* json\_files
  + symbols.json
  + animals.json
  + countries.json
  + food\_and\_drinks.json
  + sports.json
  + landmarks.json
  + companies.json
  + companies.json

# Database

## Country

* country\_id
* country\_name
* capital\_city
* flag\_img
* population
* area

## Landmark

* landmark\_id
* landmark\_name
* symbol
* location: <COUNTRY>, <CITY>
* foundation\_year

## Symbol

* symbol\_id
* symbol
* title
* category

## Company

* company\_id
* company\_name
* logo

## Query

Query entity contains the following fields:

* query\_id (int)
* query\_name (string)
* answers\_arr (string)
  + “[A1, A2, A3, A4]” when A1-A4 are strings
* correct\_answer\_index (int) 0-indexed

## Symbol Categories

* ANIMALS\_NATURE
* FOOD\_DRINKS
* SPORTS
* COUNTRY\_FLAGS

# Repository

## arc-frontend

* index.html
* assets
  + data
  + image
  + sound
* css
* engines
  + bubble-popper
  + asteroids
  + maze
  + space-invaders
* lib
  + vector.js

## arc-scripts

* category.py
* collect\_countries.py
* collect\_symbols.py
* constants.py
* country.py
* symbol.py
* utils.py

## arc-db

# Graphics

## Symbols

* Animals & Nature
* Food & Drinks
* Sports
* Country Flags
* Landmarks

# Gameplay

## Controls

Mouse and Keyboard

# Automation & Scripts

Collect and create the following files:

* countries.json
  + country\_id [country-N]
  + country
  + capital\_city
  + flag
  + population
  + area
* landmarks.json
  + landmark\_id [lan-N]
  + landmark\_name
  + city
  + country
* symbols.json
  + symbol\_id [sym-N]
  + symbol
  + title
  + category

# References

**Game Engines**

* **Bubble Popper**
* **Asteroids - C:/p5/asteroids\_puzzle**
* **Space Invaders**
  + **C:\MyGames\Raptor Retro\raptor-retro\raptor-retro**
* **Maze**
  + **C:\p5\pacman**
  + **C:\MyApps\pacman**
* **C:\p5\bubble\_puzzle**

**Symbols and Emojies**

* https://tools.picsart.com/text/emojis
* <https://getemoji.com/>
* <https://emojicopy.com/>