Arcavia – GDD

Table of Contents

[High Concept 2](#_Toc157066139)

[Requirements 2](#_Toc157066140)

[Technologies 2](#_Toc157066141)

[Languages 2](#_Toc157066142)

[Framework 2](#_Toc157066143)

[Sound 2](#_Toc157066144)

[Components 3](#_Toc157066145)

[Arcade Games 3](#_Toc157066146)

[Bubble-Popper 3](#_Toc157066147)

[Raw Data 3](#_Toc157066148)

[Game Flow 3](#_Toc157066149)

[Screens 4](#_Toc157066150)

[Gameplay Screen 4](#_Toc157066151)

[Level Complete Screen 4](#_Toc157066152)

[Menus 4](#_Toc157066153)

[Main Menu 4](#_Toc157066154)

[Gameplay Menu 4](#_Toc157066155)

[Game Pause Menu 4](#_Toc157066156)

[Game End Menu 4](#_Toc157066157)

[Graphics 4](#_Toc157066158)

[Symbols 4](#_Toc157066159)

[Text Fonts 5](#_Toc157066160)

[Sound Effects 5](#_Toc157066161)

[Gameplay 5](#_Toc157066162)

[Controls 5](#_Toc157066163)

[Automation & Scripts 5](#_Toc157066164)

[References 6](#_Toc157066165)

# 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
  + Cities
  + Landmarks
  + etc.
* 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

* Frontend (Angular, JS)
* Scripts (Python)
* DB (loaded json files into class objects / Google Firebase)

# Arcade Games

## Bubble-Popper

Asteroids

Space Invaders

Maze (Pacman engine)

# Raw Data

Raw data location: C:/arcavia-data

## Required entities

* Animals
* Countries
* Food and Drinks
* Sports
* Landmarks
* Cars
* Companies

## Files

* csv\_files
* images
  + flags
  + landmarks
* json\_files
  + all\_symbols.json
  + animalsandnatureemojis.json
  + countries.json
  + countryflags.json
  + foodanddrinksemojis.json
  + sportemojis.json
  + landmarks.json TBD
  + cars.json TBD
  + companies.json TBD

# Database

## Country

* country\_id
* country\_name
* Flag
* Capital\_city

## Landmark

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

## Animal

* animal\_id
* animal\_name
* symbol

## Car

* car\_id
* car\_name
* logo

## 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

# Repository

## arc-frontend

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

## arc-scripts

* collect\_countries.py
* collect\_symbols.py
* constants.py
* country.py

## arc-db

# Screens

## Gameplay Screen

## Level Complete Screen

# Menus

## Main Menu

## Gameplay Menu

## Game Pause Menu

## Game End Menu

# Graphics

## Symbols

* Animals & Nature
* Food & Drinks
* Sport
* Country Flags

# Gameplay

## Controls

# Automation & Scripts

Collect and create the following files:

* countries.json
  + country
  + capital\_city
  + flag
  + population
  + area
* landmarks.json
  + landmark\_name
  + city
  + country

# 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://getemoji.com/>
* <https://emojicopy.com/>