

Using artificial intelligence as a game agent in Flappy Bird

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Purpose

Our goal is to recreate the game flappy bird in the python language using some GUI library (probably pygame). After the recreation, we want to switch the human player to an AI, which will learn how to play the game and (most likely) outperform the human players (we define “outperform” as it gets more points than us).

Functional specification

First, we have to implement the game itself, getting all the original textures (or similar ones if we cannot find them), and later we have to design the AI itself, could be an evolutionary algorithm, and/or using reinforcement learning, we have not decided on it yet.

System architecture

The game and GUI will have their own predefined functions, and the main execution loop for the application. When the player needs to do the action (jump / nothing) then in the first iteration there will be keyboard inputs, but later it just calls the ai function, which decides whether it wants to take the action or not. Probably there will be other helper functions and classes for the player and other objects in the game.

Work distribution

We do not know how to distribute the tasks before the project, but as a guess Mark will work more with the GUI and the game, and Virág will work more with the AI, but overall in a 50-50 distribution, so everything is balanced as all things should be.