

Flappy chicken

Objective and requirements

We made a standard implementation of Flappy Bird, but with a chicken. We coded this in C and ran it on the DTEKV board, connected to a screen through VGA where the game was displayed.

To meet our goal, the game included the following:

- An interactable game with collisions, gravity, and graphics.
- It is able to run on the board and be shown on a screen through VGA.
- It has a clear and interesting game loop.

The solution

The game was implemented in C and developed collaboratively using Git for version control. The button on the DTEKV board controlled the chickens movement. The main game loop handled gravity, collision detection, and obstacle generation, updating the game state each frame. Graphics were rendered via the VGA interface, displaying the background, obstacles, and chicken sprite smoothly. Arrays and timers managed game data and ensured smooth gameplay.

Verification

Verification was performed through both functional testing and performance validation:

Functional testing:

- The game was played to confirm that all core features worked as intended.
- The chicken responded immediately to input and moved smoothly.
- Collisions were verified by observing that the game ended when the chicken hit an obstacle, the top or the ground.

Performance testing:

- The VGA output was verified to display correctly without flickering.
- Frame rate and input response time were evaluated to ensure smooth gameplay.

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Debugging and iteration:

Any issues observed during playtesting were logged and corrected through iterative testing.

Contributions

At the start of the project, we discussed how we wanted the game to function to ensure a shared understanding. We then divided the work according to our interest and strengths: Algot was responsible for the graphics, while Emelie implemented the game logic.

Reflections

This was an interesting project, where we both learned new things. We've both had a bit of experience with game development before, but now we had to recreate everything from scratch which was an entirely different experience. Usually game libraries come with predefined functions for drawing sprites and rectangles except here we got to define the structures ourselves. All, in all this was a fun project that gave us a deeper understanding of how graphics and basic game structure works.