SUPINFO Academic Dept.

SUPINFO
International University

INSTITUTE OF INFORMATION TECHNOLOGY

Group Projects
B1 - Architecture

Project presentation

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1 PROJECT OVERVIEW

Riddle Games is a game device vendor that sells small entertainment devices that plugs into TV sets. They mainly sell alternative versions of all-times video games classics like Pong or Mac-man.

Their product is a fancy-boxed x86-based electronic board very similar to old-fashioned PC's from a technical perspective. All games are contained into a single ROM soldered to the mainboard. In-house developers (or contractors) can also use a subset of DOS routines (interruptions/syscalls).

Riddle Games wants to add a new title to their game collection: A "Tamagotchi" light clone. As the board doesn't have much CPU power, the game must be written directly in assembly with Emu8086.

The following section describes the expected functionalities.

2 FUNCTIONAL EXPRESSION

2.1 THE GAME

The "Tamagotchi" is a pet-care game where the player is supposed to take care of its pet while it grows up. The pet behavior will directly depend on how the player took care of it in the earliest stages of its life.

The player can review the "state" of its pet by monitoring three meters: Hungriness, Happiness and discipline. The pet can also fire an alarm (visual or audible) when it needs attention.

The pet will start as a baby (simple round sprite) and grow into a child (round sprite) then to a teen (more complex sprite with arms and/or legs) to finally become an adult (final form). Each states older than baby must have multiple options depending on the care provided to the pet during its earlier life.

The player can take care of his pet by feeding it, playing with it and reprimand it.

2.1.1 Feeding the pet

The player has two options to feed its pet: Snack or meal. The meal just feed the pet while the snack feeds the pet and makes it happy. The meal feeds the pet more than the snack.

The pet gets hungry as time passes and with physical exercise.

The pet may refuse to eat time to time if it hasn't enough discipline.

2.1.2 Playing with the pet

The player has to guess a direction (left or right) where the pet is going to look in. If the player guesses rights, the pet gets happier.

Playing with the pet makes it hungry.

The pet may refuse to play time to time if it hasn't enough discipline.

2.1.3 Reprimanding the pet

When the pet doesn't behave correctly, it must be punished. Punishing the pet will increase its discipline meter if the punishment is justified. It will also decrease it happiness by a little. Punishing the pet for no reason will decrease the discipline meter and make the pet very sad.

2.2 GRAPHICS

You can use simple monochrome pixel-squared figures to represent the pet and the interface or complex colored sprites, at your option. Animated sprites are not required, but would also be very appreciated.

2.3 VIDEO RESOURCES

You can consider the following video as a good demonstration of what the game should be:

- http://www.youtube.com/watch?v=opru6qPsPa4

3 DELIVERABLES

Students should include the following elements in their final delivery:

- A zip archive with the project asm source code, runnable on EMU8086.
- Project documentation, based on the template.
    - Project report with members and tasks assignments

- Technical documentation explaining your choices and/or implementation choices/details on the following items (at least):
  - Your major technical concerns and how you dealt with them.
    - How did you draw on the screen?, Which data structures did you use?, ...
  - Random generator
  - Metric-based decision making (pet evolution)
- Game manual

The two first documents are academic documents. Address the reader as a teacher, not a client. The last one (game manual) should address the reader as a user. These documents can be in French or in English, at your option.

Students may also have to hand back their PowerPoint slideshow on the oral day, upon request.

4 GRADED ITEMS

The project will be graded as follows, on a 32/28 scale:

Documentation (2 points)

- Spelling and grammar (0.5 points)
- Relevancy (0.5 points)
- Project report (1 point)

Core game features (12 points)

- The player can feed the pet
  - ~~With snacks (1 point)~~
    - ~~It makes the pet happy (1 point)~~
  - ~~With meals (1 point)~~
  - ~~The pet can refuse to eat when hungry (low discipline) (1 point)~~
- ~~The player can play with the pet (1 point)~~
  - ~~It makes the pet hungry (1 point)~~
  - ~~The pet can refuse to play (low discipline) (1 point)~~
- ~~The player can reprimand the pet (1 point)~~
  - ~~When justified increase discipline and lower happiness (1 point)~~
  - ~~When not justified decrease discipline and lower happiness even more (3 points)~~

Different forms (8 points)

- The pet evolves over the time (4 point)
- The pet will get different form for each stage of development depending on the care it received (4 points)

Graphics (6 points)

- Sprites are animated (each sprite as more than one frame) (3 points)

- ~~Sprites moves on the screen (the sprite position changes) (3 points)~~

Bonus features (4 points)