Keychain Virtual Pet - Digimon 1999version

Prepared for: ECE241 Final Project
Tutorial #: 0106
Station #: 25
Mentoring TA: Xander Chin
Prepared by: Shuohe James Zhang
Yi Ashley Yuan
Arfa Tehreem

6 November 2017

EXECUTIVE SUMMARY

Objective

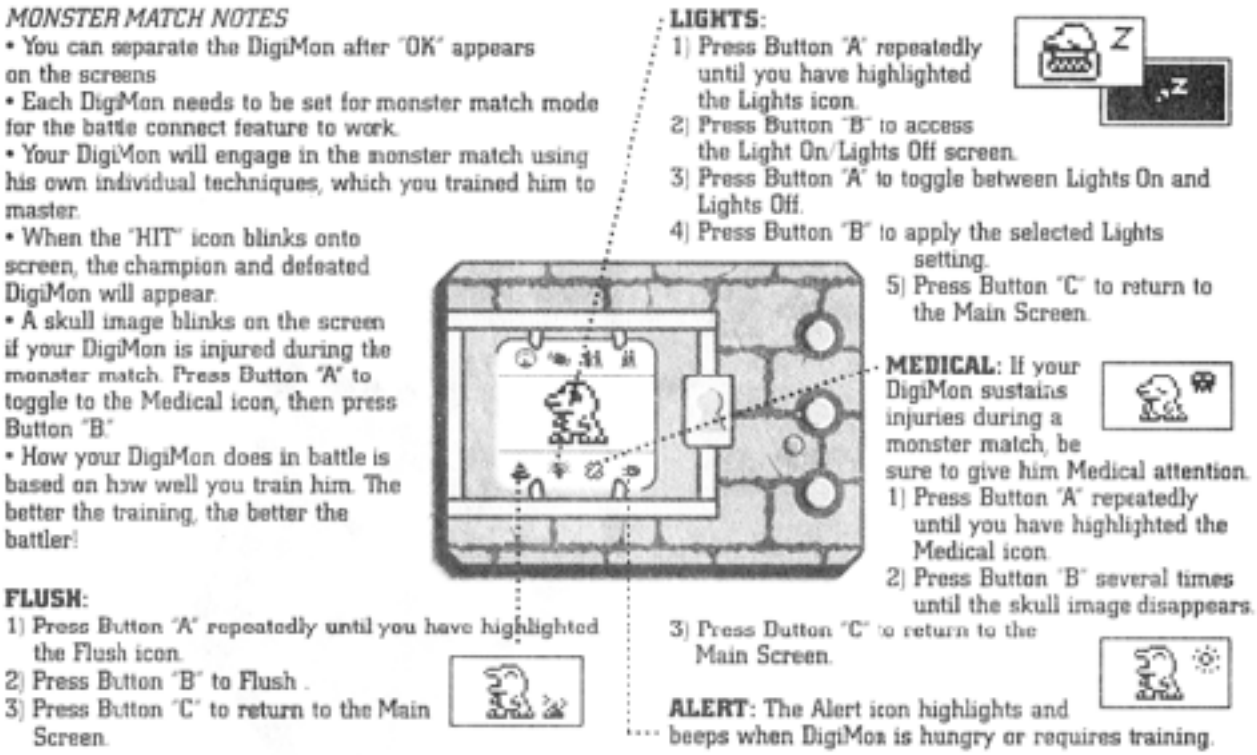
The final project for ECE241 of Station#25 is to designed a Keychain Virtual Pet program, using FPGA to develop in Verilog.

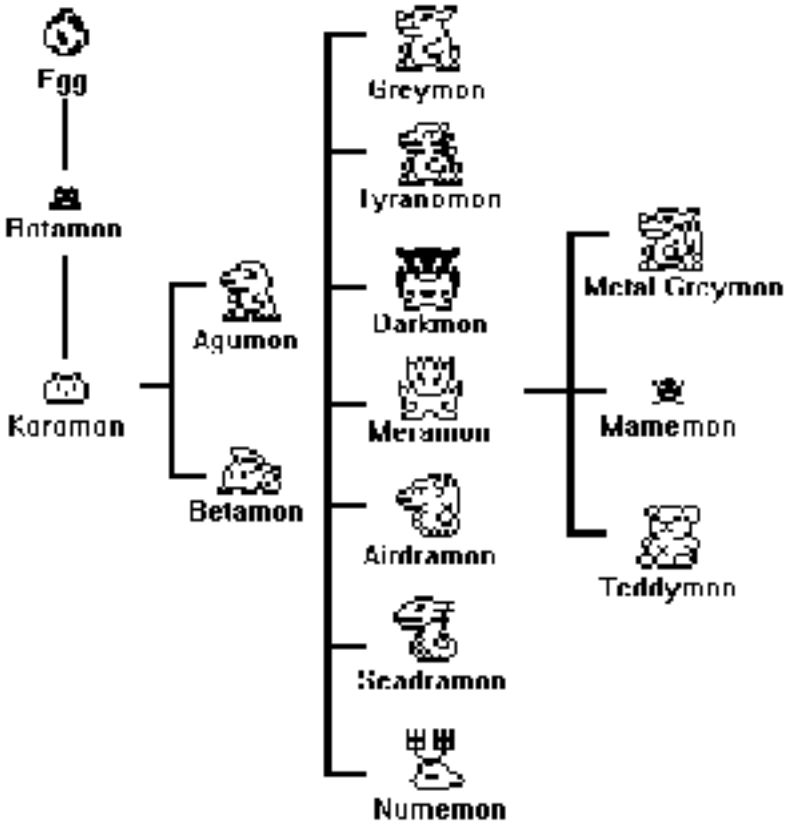
Goal

· Redesign the cultivating-mode game program and implement it all in the FPGA hardware
· Use the video graphics adapter(VGA) as the output
· Use the controller of Playstation4 Game Console, using IP core, as the input
· Design a Finite State Machine to control the front-end interface
· Design a Finite State Machine to store the back-end database
· Design a Finite State Machine to implement an animation effect of object's movement
· Other techniques including random access memory(RAM), register, shifter, counter, arithmetic logical unit(ALU), multiplexer, and etc, all the key concepts had been taught in ECE241.

Function

The game starts at hatching an egg. After the hatch, the baby monster will be cultivated by user, in evolution from phase to phase. User can feed the monster and check the status of growing value and age, or some other informations.





TIMELINE

Work	Object	Week
· Kick-off meeting with mentoring TA · Design the flow chart of functions · Work assignment and plan	1. Product Document 2. Verilog Skeleton 3. Block Diagram	Nov 6 - 7
· Implement the basic function without animation effect	1. Front-end Interface 2. Back-end Database	Nov 8 - 13
· Refine the program logic · Add audio and visual effect to the program	1. Object's movement algorithm 2. Animation of evolution 3. Sync the sound track	Nov 14 - 20
· Debug · Add extra controller · Consolidate all footage for final report	1. Design the fully functions 2. Extra input console	Nov 21 - 27
· Write the Final Report	1. Paper statement handed-in 2. PDF by email	Nov 27 - Dec 4