SE101 Project—Tamagotchi

Matthew Ban Kim | 20733942 | mjbankim
Shela Qiu | 20661734 | s38qiu

Project Overview

The goal of this project will be to mimic the Tamagotchi, a popular handheld digital pet. Some of the aspects from the original game will be incorporated, with some modifications - the user will raise a pet on screen, feeding and entertaining it as it progresses through life. The game will include the following features:

- Feeding the pet to fill its hunger meter
- Playing mini games to acquire in-game points to be spent on items (e.g. jumping over hurdles, answering trivia, or playing the lottery).
- Purchasing gifts for the pet using in-game points to increase its happiness
- Evolving the pet using points acquired in-game. The pet will go through five stages of life - baby, child, teen, adult, and seniorhood, at which point the game will end and start over.
- Cleaning the environment to keep the pet healthy. The pet will excrete waste at randomly generated times, and cleaning will be done by shaking the device.

Major Software Components

The LCD on the Orbit Booster pack will be used as the main user interface for gameplay, to display the pet and all other features of the game. The accelerometer will be used to detect shaking to clean waste produced by the pet, and the buttons on the board will be used to select options in the menus. The potentiometer will be used as a knob to scroll through menu options. The LEDs on the board will also light up depending on the pet's mood, displaying green for happiness and red for sadness.

Major Hardware Components

The hardware components of the project will include the EK-TM4C123GXL Launchpad by Texas Instruments and the Digilent Orbit BoosterPack add-on.

Anticipated Challenges

Since the flow of the game allows the player to decide what to do next, features can be easily added and taken off. It is possible that the project time constraints will limit the number of features that can be completed, so one of the biggest challenges will be to prioritize which components to finish first - the focus will be put mostly on mini games. In addition, graphics may be particularly challenging for the hurdles minigame, as the gameplay will need to be animated (both with the pet and the hurdles).