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SE 101 Project: *BoosterCat*

What will it do?

The *BoosterCat*, a gaming gadget, provides a pet nursing simulation, where the player enjoys the company of a virtual cat and helps it to survive. In order for the pet to grow up healthily, basic needs, such as food, cleanliness, and happiness, must be met; otherwise, it may result in death. The *BoosterCat* will communicate with the player through emotions and reminders of its needs. The goal of the game is to keep the BoosterCat alive for as long as possible.

Major Software Components

The BoosterCat's emotions are expressed through emoticons and its status with LED lights. Its lifespan will be recorded using a timer.

As the BoosterCat's condition deteriorates over time, it will prompt the player on the LCD screen with one of the following scenarios depending on its statuses:

1. Feed the hungry BoosterCat
   a. Press button
   b. The status goes from Healthy to Hungry so the LED changes to red
2. Pet the lonely BoosterCat
   a. Put fingers on (hold) temperature sensors within 5 sec
   b. If lonely, the status goes from Happiness to Sadness so the LED will go to blue
3. Clean the dirty BoosterCat
   a. Shake off the litter within 10 seconds
   b. The status goes from Healthy to Anger so the LED will go to green

Table 1: LED colours with its equivalent status

LED Colour	Red	Green	Blue
Status	Anger	Dirty	Sad

Hardware Components

- ❖ Digital I/O Pushbuttons
- ❖ I²C 3-axis Accelerometer
- ❖ I²C Temperature sensor
- ❖ 128x32 pixel OLED Display (LCD)
- ❖ LED
- ❖ Tiva-C