Mason Powell

Mr. Saathoff

CS 101

4/23/2017

AP Create Task

2a. Being asked to develop a program that uses mathematical and logical concepts, I chose to use [www.scratch.mit.edu](http://www.scratch.mit.edu) to create a program with Scratch’s JavaScript editor. Wanting to include expressions, arithmetic operators, and statements; I chose to write the code to a game/program that uses Health, Energy, and Happiness to keep a sprite/Sim player alive for the duration of the game/program. Beginning the program, a sprite introduces the objective of the game (Keeping the sprite alive using Health, Energy, and Happiness). The program is kept under a timed limit, and different factors affect the condition of the sprite. After the Sim explains the objective and gives the necessary instructions, there are 3 factors that will keep him alive (All 3 starting at 100). Feeding him bananas increases Energy by 25 units, listening to music increases Happiness by 25, and playing basketball increases Health by 30, but decreases Happiness and Energy by 10 each. This is all accounted for while all three are decreasing at a constant rate, to keep the game realistic. If one or more of those factors reaches 0 before the timed limit, the sprite will not survive.

2b. Incorporating logistical and mathematical processes into a game was a difficult process. Performing this task independently made this even more difficult, as I did not have a partner for the project. Using variables, I implemented the system of factors throughout the whole game. Base 10 was also used to monitor them, as it made it easier to understand for the player. Given the opportunity, many different parameters were included into the program for variety and experience. These were mostly incorporated as the detection systems for the sprite, giving it the ability to react to certain conditions.

2c.