Project Title: StoryClime IoT
Student Name: Dan O'Brien
Student Number: 20091381
Date: 15 NOV 20
Module: Computer Systems, Computer Science, Year 1

StoryClime

StoryClime teaches children about the science that underpins our world by making them the protagonists of their own adventures stories. The StoryClime app uses information inputted by you, the parent (first name, age, name of imaginary friend), and data taken from a range of sources (such as NASA, the Hubble Telescope, National Geographic), to create unique comic book adventures for your child, narrated by their own imaginary friend (see Figure 1: StoryClime Adventure Example).

The StoryClime app is completely free for all Earthbound users. However, for parents that want to really push the limits of their child's imagination, StoryClime provides a complete learning suite, spanning both online applications and real world interactive objects. These premium Moonbound members will receive the StarClimber1 (see Figure 2: StarClimber1), a model space shuttle that will teach your child about their environment (temperature, pressure, and humidity) and the wonders of flight (pitch, yaw, and roll), through real time data displayed in the cockpit section of their StoryClime dashboard (see Figure 3: StoryClime Adventure Dashboard).

Platinum Marsbound members will receive all of this, and the StorySystem (see Figure 4: StorySystem), a model of the solar system that spins when your child launches into space and lights up their learning destination (from the Earth to the stars, and back!).

Tools, Technologies and Equipment

To build the StoryClime app prototype, I will use the application builder Glitch. The app will be written with JavaScript. I will use APIs to gather information from sources such as the NASA Mars Weather Station. I will employ a Raspberry Pi and a Sense Hat to gather the data from the StarClimber1 space shuttle model. This information will be relayed to the StoryClime app through ThingSpeak and IFTTT. The shuttle prototype itself will be fashioned from an oasis, which is lightweight and malleable. The Raspberry Pi will also work in conjunction with a motor to spin and light up the StorySystem when the launch button is pressed. The StorySystem prototype will be made from wire, cardboard, and Christmas lights. The Raspberry Pi will operate using Python.

Project Repository

The StoryClime repository can be found on GitHub at https://github.com/dananthonyobrien/storyclime.git.

Figure 1: StoryClime Adventure Example

Figure 2 : StoryClime Adventure Dashboard

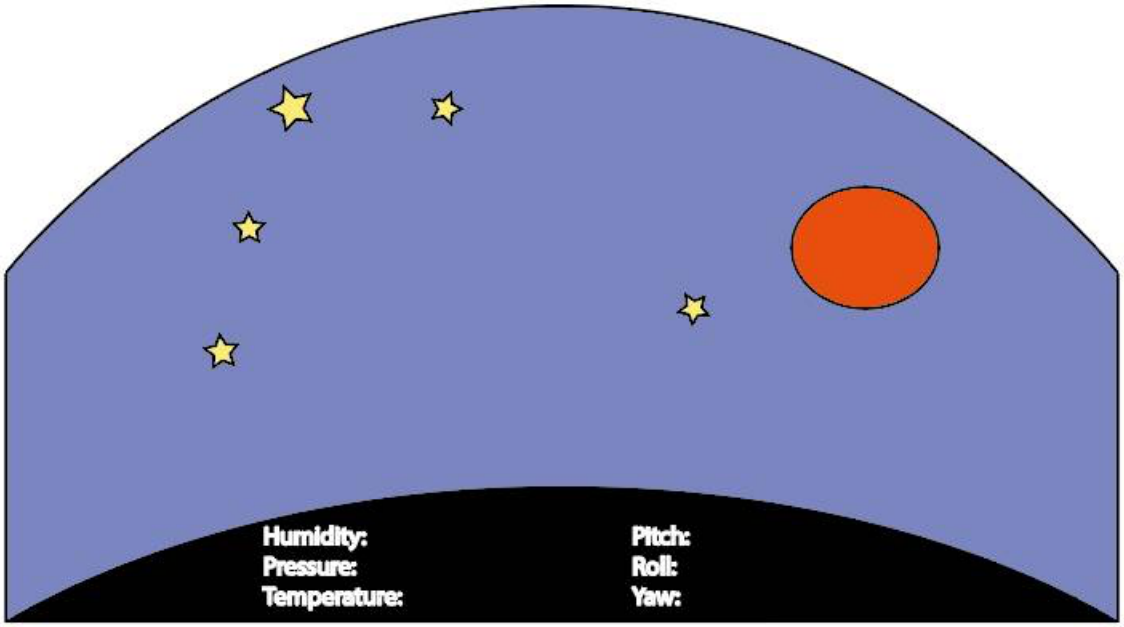
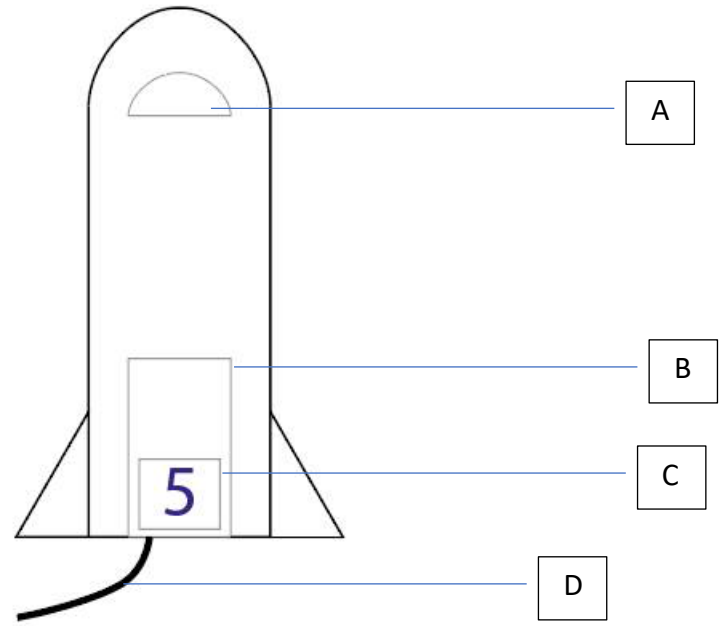
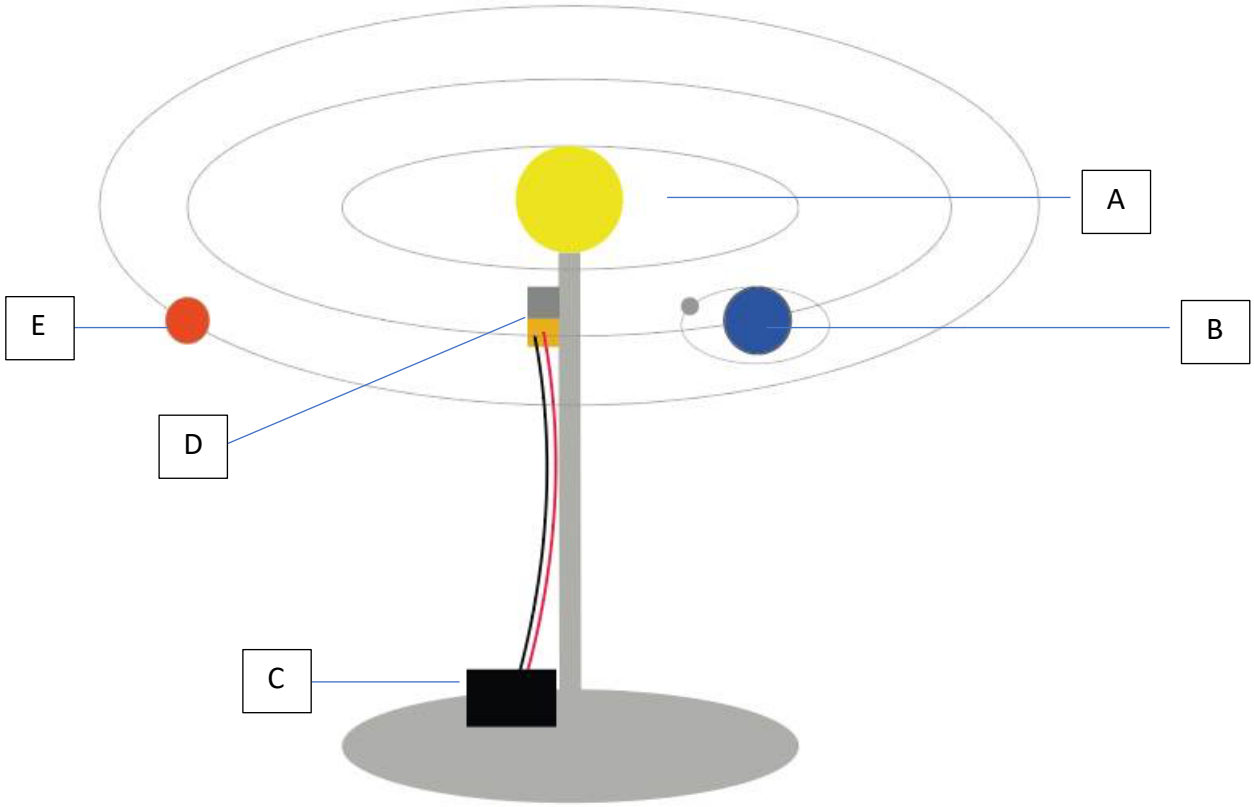


Figure 1: StarClimber1



A. Cockpit (see Figure 2)
B. Raspberry Pi
C. Sense Hat
D. Power source

Figure 3: StorySystem IoT



A. Sun
B. Earth and Moon
C. Motor board and battery pack
D. Motor to turn solar system mobile
E. Mars