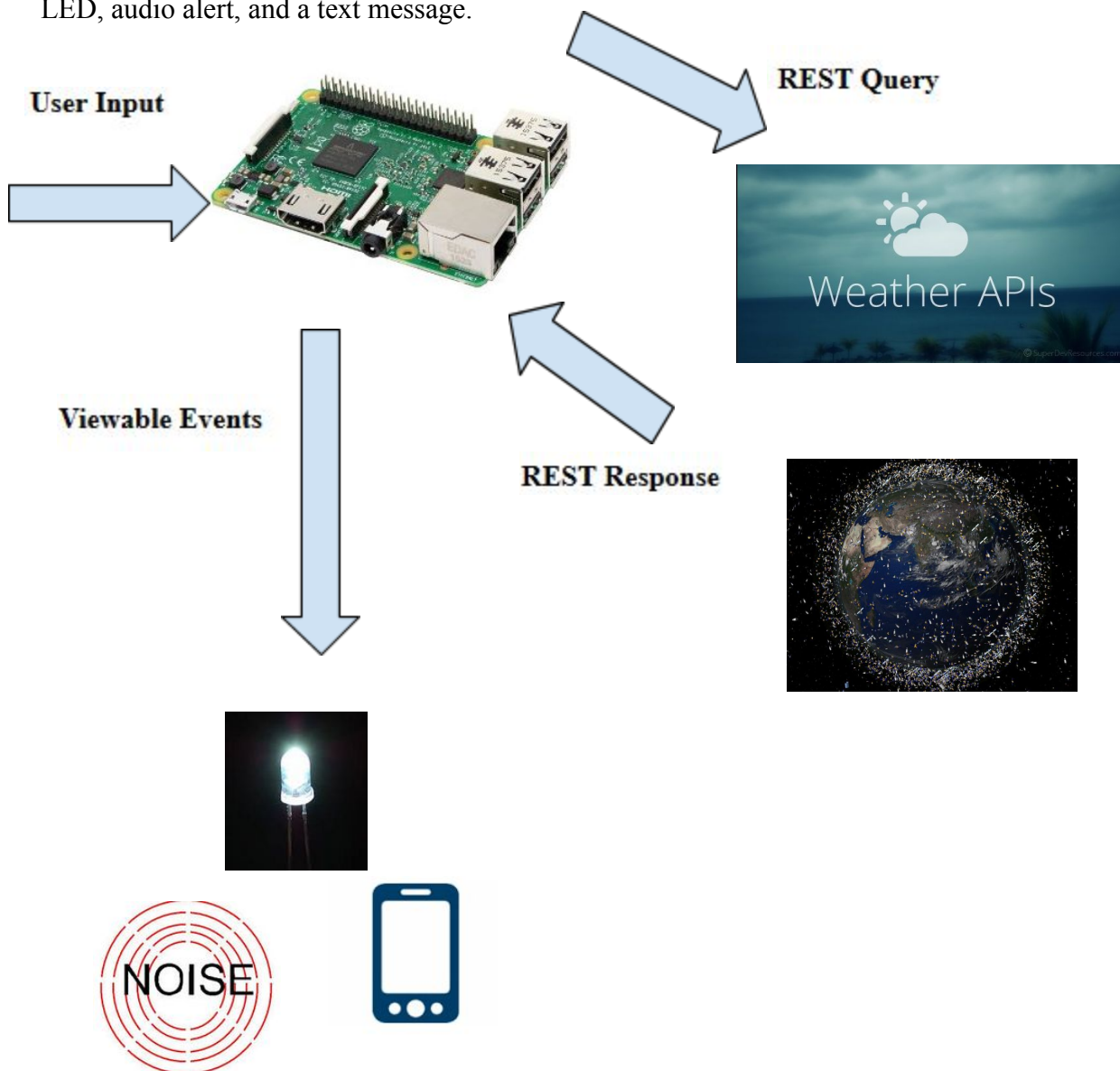


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ECE 4564 Assignment 3 – Group 16

Project Overview

For our third project assignment, only one RaspberryPi will be required which will be acting as an Artificial Satellite Monitor Gateway. The project will utilize two APIs, Space-Track and Open Weather Map, which will be accessed using RESTful queries. The information extracted from the two APIs will then be operated on using numerous modules including PyEphem. Once all necessary calculations are met, the user will be prompted accordingly through a flashing LED, audio alert, and a text message.



Design Process

The team began by working on their individual responsibilities. Once all of the individual responsibilities were completed, they all grouped up to combine their individual codes. Once they were able to combine their code, they began checking that the viewable events were working to the project specifications. Once they had the viewable events working correctly, the group went through the validation process to test their code in the same manner that they will be graded on. The team made sure that their codes would run on more than one RaspberryPi incase there was a last minute issue with any single one.

Team Responsibilities

The group began working on the project in parts due to the amount of different parts the project utilizes. Daniel had begun by making sure the audio and text message alerts were working properly on their own. He then made sure he was able to access the Open Weather Map API and made edited our code to accept the necessary command line arguments. Kenta and John made sure that all necessary APIs were working correctly. After they had gained access, they began making calculations on the Space-Track API in order to calculate the required fields for the project. Anup took the information that was outputted from all of the APIs and parsed it accordingly so we were able to store it. Notice that although the group delegated responsibilities individually, they would all work together when one member would run into a problem. This way they were all able to stay on the same time frame and complete the project efficiency.

Conclusions

The group initially had a few problems when first working with the APIs. When first utilizing the provided code form the instructor for the Space-Track, we were not able to extract the name of the satellite correctly from the API. Therefore when we were trying to make calculations on tle formatted data, we were getting errors in python because we only had two arguments when tle format requires three. In regards to the weather API, we were first trying to utilize the NOAA API. After failing to try and get future dates and reading the instructors announcement, we switched to the Open Weather Map API.

The final issue that we had run into was making sure the our code worked according to the “five viewable events” requirement in the project specification. Our code originally was printing more than five dates. After we fixed the number issue, the group finished by testing their final code and making sure that they viewable events worked according.

After finished the project, we were much more comfortable with storing data from RESTful queries and using the APIs in different manners. The project also helped us effectively delegate responsibilities due to the amount of different parts that this project required.