

CprE 492 - sddec21-14

IT-Adventures

Report 2

September 14, 2021 - September 27, 2021

Client: IT Adventures

Faculty Advisor: Doug Jacobson

Team Members:

Dakota Berbrich - Robotics

Nolan Jessen - Robotics

Aaron Goff - Smart-IT

Noah Berkland - Smart-IT

Past Week Accomplishments

- **Smart-IT - Aaron and Noah**
 - Figured out interface between Python on Raspberry Pi and color sensor pickup in RVR
 - Began Module 2 outline
 - Researched for Module 2 Lesson plans
 - Created new Python code for solution guide to give to students
 - Created step-by-step video of how to implement Python code solutions
 - Updated timeline and website
 - Required to teach JSON for sensor data input, updated timeline to reflect teaching JSON & updated website FAQ
 - Discovered JSON inputs
 - The Sphero RVR utilizes JSON for its sensor inputs, we have started learning how to read and utilize this data.
- **Robotics - Nolan and Dakota**
 - Created and published first challenge (October)
 - Finalized and published lessons through Thanksgiving break
 - Publicly available on the IT Olympics website, after being verified by the rest of the team and the client
 - Started outlining small challenges based on previous years
 - New system requires different challenges, but many can be adapted to the micro:bit + RVR system
 - Designed basic parameters of main Robotics challenge

- Limiting factors include RVR capabilities and limitations, availability of supplies to make field, and ability to practice

Pending Issues

- Continuing lack of sensor interface for the RVR from the micro:bit poses challenge in making fully functional robotics challenges
- Attempting to understand how to utilize the built-in infrared and magnetometer sensors for Smart-IT

Individual Contributions

| Team Member | Contribution | Weekly Hours | Total Hours |
|-----------------|--|--------------|-------------|
| Dakota Berbrich | Looked over python examples for the Pi platform. Read over previous event challenges and brainstormed for those activities. Started planning for the final challenge. | 14 | 34 |
| Nolan Jessen | Created October challenge; initial brainstorming for final challenge | 14 | 44 |
| Aaron Goff | Writing Python code for step-by-step video walkthrough creation, monthly challenge creation, timeline update, website update, updated FAQ for RVR setup, learning and application of JSON. | 45 | 97 |
| Noah Berkland | Brainstorming and code writing for September and October Lessons. Began the Module 2 outline and research for writing lessons. | 16 | 34 |

Plans for Coming Weeks

- Senior Design Presentation 1
- Robotics - **Nolan and Dakota**

- December Challenge creation
- Finalizing December lessons and publication
- Start adapting and creating small challenges, both for practice and for competition
- **Smart-IT - Aaron and Noah**
 - Finalize Module 2 outline, lessons, and challenges
 - November and December Challenge Creation
 - Continue to create updated Python code relevant to what is needed for driving the RVR inputs and outputs
 - Including step-by-step instructions via video