

**The University of the West Indies**

**Department of Computing and Information Technology**

**COMP 3990 Project**

**Status Report**

**Project**: < WeatherPal> **Date**: <28/04/2020>

**Iteration**: <15>

**Implementation Status**

Briefly describe the prototype or what can currently be demonstrated by the system; i.e. what is now available for feedback from the customer and testing within the development team? Attach or include a few sample screen shots to illustrate the progress.

We have assembled a weather station currently capable of recording air quality levels, ambient temperature, barometric pressure, humidity, rainfall, wind direction and wind speed. We could not add the UV sensor as yet because materials needed to create a weatherproof housing whilst being transparent to UV light has not left China since purchased a few months ago. However the weather station is set up in such a way that this sensor can be plugged in later on and function as intended. Photos and screenshots will be uploaded on GitHub page and linked here when available.

The current prototype has authentication capabilities via a login screen. It can also attain stations by name and search their logs and display their realtime station data as a chart. A station can be favourited for future use.

**Highlights**

<List any items of note. Breakthroughs, accomplishments, major decisions, or changes in the project plan. Are you on schedule, ahead of schedule or behind schedule?

* Started and made progress on app UI
* Completed functions to display all the logs of a station and add stations to favourites list

I believe we are on schedule.

**Risks or Issues List**

List any risk or issue that is critical for the success of the project. This could be anything from “*we need to get test data*” to “*how do we ensure that the system is usable*” to “*performance is unacceptable*”. This should be a complete historical list that is kept from the beginning of the project until the end. *Status* should be one of *New*, *Ongoing*, *Closed*.

The resolution column should be filled in if the issue or risk has been taken care of.

A project may be expected to have around 1-3 active issues or risks that are being managed (New or Ongoing) at any given time. If you have more than three, then either you have a project in serious trouble or your criteria for what is "critical to success" is too loose.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date Entered | Risk or Issue | Description | Resolution | Status |
| 21/01/2020 | Difficulty in getting UV-transparent materials to house the UV sensor. | Our UV sensor requires a weatherproof enclosure whilst being exposed to UV light from outside. Regular glass is not UV-transparent and will mess with the accuracy of our readings while no glass will give the highest accuracy but it will result in exposure to rain etcetera. | Fused silica glass have been ordered in addition to special glue. The idea is to place the sensor in one of our weatherproof PVC enclosures and glue the fused silica sheet on one side to allow UV light to enter. However the purity of the glass ordered from the seller is unknown. | Pending  Currently in the US waiting to ship to Trinidad |
| 03/03/2020 | Wind direction readings no longer being detected by the current weather station | The MCP3008 IC ADC which was used to measure analog voltage from our wind vane sensor seems to have stopped working. | Checked connections multiple times but nothing seems incorrect. After some hours of fiddling decided to reinstall Raspbian to see if the problem is software related. Will continue on this in the coming weekend. | The ADC started working again on its own on Monday 9th March |
| 10/03/2020 | UV sensor damaged | Whilst trying to extend the cable connection to the sensor for outdoor setup, accidently connected ground to 3.3v pin and 3.3v to ground pin which destroyed the sensor. | A new sensor has been purchased with expedited shipping | Replacement sensor was received on  Monday 23rd March |
|  |  |  |  |  |

**Tasks in Progress or Completed in** the **Last Iteration:**

<List the tasks that each member of the project worked on up to the present time.>

|  |  |  |  |
| --- | --- | --- | --- |
| Task Name | Description | Team Member Responsible | % Complete |
| Gathering necessary hardware for building the Pi Weather Station |  | Vinod Lochan Dassrath | 100% |
| Determining what technologies we should to use in our system |  | Vinod Lochan Dassrath,  Jose Bravo Mata,  Ronald Jaglal | 70% |
| Starting the design of the app interface |  | Ronald Jaglal | 50% |
| Creating project website |  | Ronald Jaglal | 100% |
| Documenting functional requirements |  | Jose Bravo Mata | 100% |
| Documenting non-functional requirements |  | Vinod Lochan Dassrath | 100% |
| Writing User stories |  | Jose Bravo Mata | 100% |
| Designing Context diagram |  | Jose Bravo Mata | 100% |
| Finalizing Project Proposal Document |  | Vinod Lochan Dassrath | 90% |
| Designing Use Case Diagram |  | Vinod Lochan Dassrath | 90% |
| Establish Project Timeline Documents |  | Vinod Lochan Dassrath,  Jose Bravo Mata,  Ronald Jaglal | 100% |
| Architectural Design | Component diagrams, high-level descriptions of the components in the system, and their purpose in relation to the project’s objectives.  Includes description of technology used | Vinod Lochan Dassrath  Jose Bravo Mata | 100% |
| Class Diagram | Outlines the attributes, methods and interactions of the major classes/modules in the system | Vinod Lochan Dassrath |  |
| Entity Relationship Model | Specifies the entities, datatypes, and relationships that are important for the project domain | Vinod Lochan Dassrath | 10% |
| Meeting with possible stakeholders |  | Vinod Lochan Dassrath,  Jose Bravo Mata,  Ronald Jaglal | 100% |
| Researching and planning our application structure |  | Vinod Lochan Dassrath,  Jose Bravo Mata,  Ronald Jaglal | 50% |
| Designing System diagram |  | Jose Bravo Mata | 80% |
| Setting Up Weather Station: Part 1 | Putting together key hardware components to construct initial weather station | Vinod Lochan Dassrath | 95% |
| Requirements  Revision | Make changes to requirements based on stakeholders’ input | Jose Bravo Mata | 50% |
| Setting Up Weather Station:  Part 2 | Writing code for sensors and connecting to Cloud Firestore database  Includes handling errors such as loss of connection etc. | Vinod Lochan Dassrath | 75% |
| Adding database functions to app | Writing code to pull data from cloud firestore | Jose Bravo Mata | 70% |
| Sequence Diagram | Diagram that would represent the process taking place when the user interacts with the system (App in particular). | Jose Bravo Mata | 100% |
| Coding app searching/sorting functions | Making functions and code that sort and search through the data obtained by the database | Jose Bravo Mata | 40% |
| Restructuring log data and setting up data visualizations. | Log data will be structured best to reduce number of reads to our database. And data would be displayed in zoom-able time series charts with data aggregation and grouping and ability easily to view data by time periods. | Vinod Lochan Dassrath | 66% |
| Human- computer interaction component | Researching the most accepted ways of application layouts that users prefer | Ronald Jaglal | 50% |
| Frontend/ PWA Layout | Continuing work with the layout of the website, so far there is a functional side navigation which links to the other pages. These pages consist of all the readings that are being recorded. Eg. Temperature, rainfall and windspeed. | Ronald Jaglal | 60% |
| Gathering information for user benefit | This task includes gathering information about weather readings be it temperature/rainfall and gives the user more insight on the gathering and importance of the data. | Ronald Jaglal | 50% |
| Creating notification module | Adding a module that allows for notifications | Jose Bravo Mata | 25% |
| Modularization | Making code more modular | Jose Bravo Mata  Vinod Lochan Dassrath | 40% |
| Delete account function | Make function to delete user's account | Jose Bravo Mata | 100% |
|  |  |  |  |

**Upcoming Tasks for the Next Iteration:**

List the tasks that each project member is planning to work on in the upcoming iteration.

|  |  |  |
| --- | --- | --- |
| Task Name | Description | Team Member Responsible |
| Application UI prototype | Designing the layout of the App and how the user would interact with such app. | Ronald Jaglal |
| Visualization | Experimenting with various charts that would be used for showing the data to the user. | Ronald Jaglal,  Vinod Lochan Dassrath |
| Implement functionality for linking weather station to user account. |  | Vinod Lochan Dassrath |
| Complete location related features such as searching for stations by location etc. |  | Vinod Lochan Dassrath |
| Extra functions | Functions that are of benefit but are not required. Functions to implement: allow user to change password  Display recent stations list  Save logs | Jose Bravo Mata |
| Refactoring | Cleaning code for readability and efficiency. | Josr Bravo Mata |

*<Add rows to tables as needed>*