# **Embedded Systems – Project Proposal Form**

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| **Full name:** | Nathan Attard |
| **Group:** | 4.1E |
| **Title of the project:** | Weather Station / Monitoring System |
| **Aims of the project:** |  |
| to able to display the current temperature to the LCD and the  website working just fine |
| I should try making the project work flawlessly with  no errors involved |
| And most importantly trying not to short circuit my raspberry pi (so the aim is to be at up most carful when working) |
| **Basic Functionalities:** | 1. e-mail alerts |
| 2. Temperature Senser |
| 3. |
| **Advanced Functionalities:** | 1.Flask server (or WebloT) providing Web interface |
| 2.2x16 l2c based LCD |
| 3. GUI created using TkInter or Pygame or guizero or similar |
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| **Background Research** (*Research and compare and contrast similar projects)***:**  **There was a lot of Projects that I could of done the project I wanted to do is making a Line following Robot which basically follows the black tape but I wasn’t able to do that as it was not possible for me because I have a raspberry pi 400 so then I stated doing research about ideas that I can make , I went to the Vle and I found (examples of past projects ) which other students made and so I took a peek and there were some interesting ones but the one that stood out for me was the weather Station or the Server Room Temperature as both are very similar to each other but I decided to do the weather Station / monitoring and once I found my project I went to YouTube / browsing / book guides that can give me more knowledge of how to set up the project / build** | |
| **Explanation of how the project will be built:**   1. Having all the components for the project ready 2. Watch Videos tutorial / guides and read the raspberry pi books for my project so I could have a better understanding / knowledge 3. After doing research I would need to see what libraries I would need to install , and after that I would then install all the necessary libraries 4. After installing the necessary libraries I would start writing code to read the information from the temperature sensor , display temperature on the LCD screen , setting up the Flask server and then testing it and debugging the code to make sure it is working as I intended it to 5. Project finished and works perfectly with no errors involved | |
| **References:** | <https://projects.raspberrypi.org/en/projects/build-your-own-weather-station/2> |
| <https://www.youtube.com/watch?v=LAoVUPeXPDE&ab_channel=SriTuHobby> |
| <https://magpi.raspberrypi.com/books/create-guis> |
| <https://www.circuitbasics.com/raspberry-pi-lcd-set-up-and-programming-in-python/> |
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| **Project Diagram:** | |

**Project Plan**

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| Activity | Week Starting | | | | | | | | |
| **27**  **Mar** | **3 April** | **10 April** | **17 April** | **24 April** | **1 May** | **8 May** | **15 May** |
| Research | / | / |  |  |  |  |  |  |
| Documenting the project |  | / | / | / | / | / | / | / |
| Installing all necessary software’s / libraries |  | / | / |  |  |  |  |  |
| Doing coding for to be able to read temperature data from the temperature sensor and display it to the LCD |  |  | / | / |  |  |  |  |
| Setting up the e-mail alerts |  |  |  | / | / |  |  |  |
| Doing the web interface using the Flask Server (or WebIoT) to display the temperature and also GUI created using TkInter or Pygame or guizero or similar |  |  |  |  | / | / | / |  |
| Coding the remaining features / debugging everything |  |  |  |  |  | / | / | / |
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