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# EMBEDDED AND UBIQUITOUS SYSTEMS

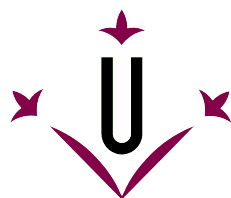
## Sprint 1

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# 1 Sprint Planning 1

Sprint Planning is an event that defines what can be delivered in the upcoming sprint and how that work will be achieved.

## 1.1 Time Frame

Start date	End date
07/10/2022	21/10/2022

Table 1: *Time frame of the first sprint.*

## 1.2 Sprint Team Members

Team member	Role
Jordi Lazo	Scrum master
Didac Colomines	Developer

Table 2: *Name and role of each memeber of the group*

## 1.3 Agenda

- Analyze the components that we will need for the task.
- Search and read all the documentation about the components and their libraries.
- Connect and program the heart rate sensor (MAX30102).
- Connect and program the controller ESP-01.
- Connect and program the servo.

## 1.4 Product Backlog

Task	Team member	Estimated time
1.0: Read official documentation and manuals of the components	Jordi Lazo and Didac Colomines	2h
1.1: Install and set up arduino IDE search and install all necessary libraries	Jordi Lazo	1h
1.2: Configure and connect components (LCD, I2C, Arduino UNO, ESP-01, Servo, Heart rate sensor, Temperature Sensor)	Didac Colomines	2h
1.3: Write the code to be able to read the data transferred by the heart rate sensor	Jordi Lazo	2h
1.4: Write the code to be able to read the data transferred by the temperature sensor	Didac Colomines	2h
1.5: Write the code to be able to move the servo	Didac Colomines	1h
1.6: Write the code to be able to show the data transferred by the heart rate sensor in the LCD screen	Didac Colomines	1h

Table 3: *Products backlogs of the Sprint Planning 1.*

Total time estimated
11h

Table 4: *Total time estimated for Sprint 1.*

## 2 Daily Scrum 1

The purpose of the Daily Scrum is to inspect progress toward the Sprint Goal and adapt the Sprint Backlog as necessary, adjusting the upcoming planned work.

## 2.1 Date

Date	Hour	Total time
08/10/2022	10:30h - 13:30h and 16:30h - 19:30h	6h

Table 5: *Date and time spent on the daily scrum 1.*

## 2.2 Meeting

Team member	Progress	Problem
Jordi Lazo	We are working on programming the arduino and continue studying the components	None
Didac Colomines	We are working on programming the arduino and continue studying the components	None

Table 6: *Report of the meeting.*

## 2.3 Notes

- We connected and configure the temperature sensor to the Arduino UNO micro-controller.
- We connected and configure the LCD screen to the arduino UNO.
- We installed the arduino IDE on Jordi's PC.
- We connected and configure the heart rate sensor next to the LCD screen.
- We install the necessary libraries to be able to use the temperature sensor, the LCD screen and the heart rate sensor.
- We created the repository on github where we store the controller codes.

## 2.4 Images

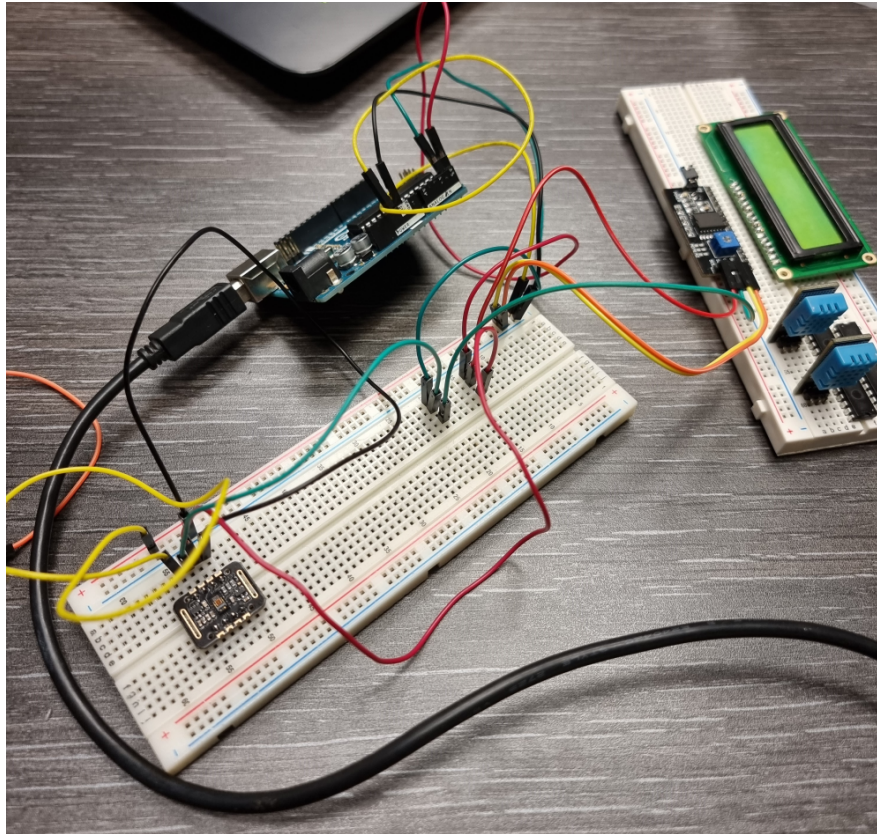


Figure 1: *Final result of the Daily Scrum 1.*

## 3 Daily Scrum 2

The purpose of the Daily Scrum is to inspect progress toward the Sprint Goal and adapt the Sprint Backlog as necessary, adjusting the upcoming planned work.

### 3.1 Date

Date	Hour	Total time
14/10/2022	16:00h - 18:10h	2h 10 min

Table 7: *Date and time spent on the daily scrum 2.*

### 3.2 Meeting

Team member	Progress	Problem
Jordi Lazo	Sprint 1 progress completed	Keep to studying MQTT protocol
Didac Colomines	Sprint 1 progress completed	Keep to studying MQTT protocol

Table 8: *Report of the meeting.*

### 3.3 Notes

- We downloaded the servo library and studied how it works.
- We configure and install the servo in our project alongside the heart rate sensor and LCD screen.
- We tried to add the MQTT libraries to try send the heart rate sensor data in to our computer but was unsuccessful.
- We will continue look for documentation and study how to implement the MQTT protocol in our project.

### 3.4 Images

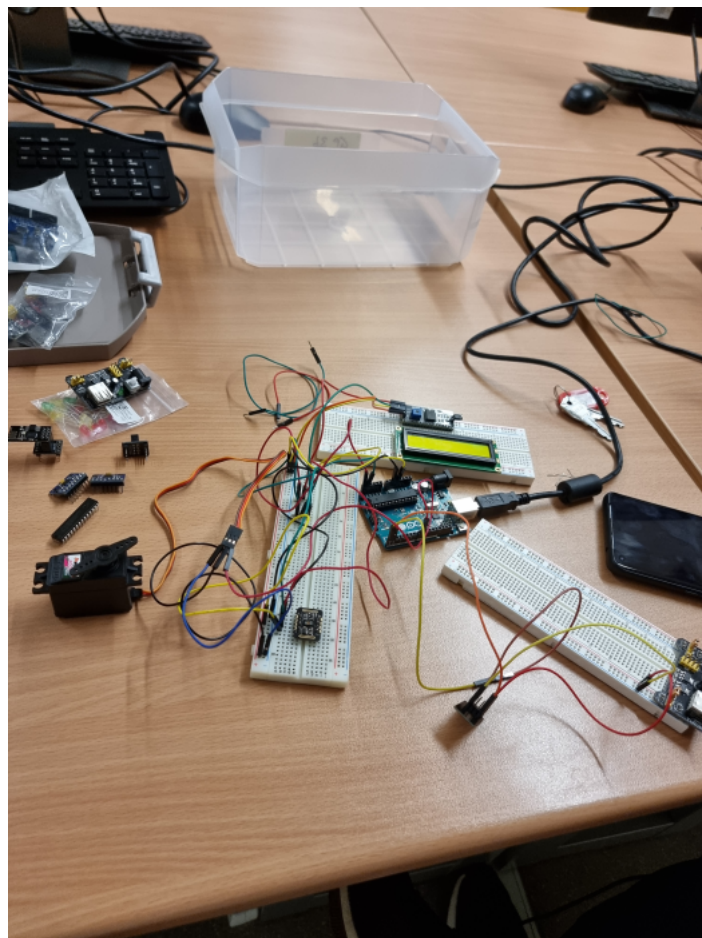


Figure 2: *Final result of the Daily Scrum 2.*

## 4 Sprint Review 1

The purpose of the Daily Scrum is to inspect progress toward the Sprint Goal and adapt the Sprint Backlog as necessary, adjusting the upcoming planned work.

## 4.1 Review date

Review date
21/10/2022

Table 9: *Review date of sprint 1.*

Total time estimated	Total time logged
11h	8h

Table 10: *Estimated time vs time logged for Sprint 1.*



## 4.2 Product backlog completed

Task	Team member	Completed	Estimated time	Time logged
1.0: Read official documentation and manuals of the components	Jordi Lazo and Didac Colomines	Yes	2h	2h
1.1: Install and set up arduino IDE search and install all necessary libraries	Jordi Lazo	Yes	1h	30min
1.2: Configure and connect components (LCD, I2C, Arduino UNO, ESP-01, Servo, Heart rate sensor, Temperature Sensor)	Didac Colomines	Yes	2h	1h
1.3: Write the code to be able to read the data transferred by the heart rate sensor	Jordi Lazo	Yes	2h	1h
1.4: Write the code to be able to read the data transferred by the temperature sensor	Didac Colomines	Yes	2h	1h
1.5: Write the code to be able to move the servo	Didac Colomines	Yes	1h	30min
1.6: Write the code to be able to show the data transferred by the heart rate sensor in the LCD screen	Didac Colomines	Yes	1h	2h

Table 11: *Products backlog completed during the Sprint 1.*

### 4.3 Time logged

Total time estimated	Total time logged
11h	8h

Table 12: *Estimated time vs time logged for Sprint 1.*

### 4.4 Feedback

- We are working great as a team.
- We have completed all the tasks we purposed on the sprint planning 1 successfully.
- It took us less time to fulfill all the product backlogs than we expected.
- We are working coordinately and distribute the work perfectly.

### 4.5 What to do next

- We are going to connect and configure the ESP-01.
- We are going to create a set up the server to manage all the devices in the same network.
- We will connect and configure the accelerometer.
- We will set up the RTOS with our devices.
- We will try to finish the semester project by the end of the sprint review 2.

## References

- [1] Arduino LiquidCrystal I2C library.  
<https://github.com/fdebrabander/Arduino-LiquidCrystal-I2C-library>
- [2] DHT sensor library.  
<https://github.com/adafruit/DHT-sensor-library>