ELEC0017: THE IoT MINI PROJECT

GENERAL INFORMATION

During the last 2 weeks of the term (w/c 13th March and 20th March 2023), you will work on a mini IoT project, worth **20% of the module mark**. The aim of the project is for you to demonstrate a design of an end-to-end connected system to serve a specific application. To do so, you need to:

- Develop, in teams of 2 people[(1)], a small connected system using the components you have and the Arduino Cloud.
- Record a **5-min video** that demonstrates the working parts of the system and explains what they do
- Upload the video to UCL MediaCentral platform (htpps://mediacentral.ucl.ac.uk). Make it available to UCL Staff (it is very important that you do this). Do not use other platforms, as they do not record the uploading time.
- Post the link of this video to the submission site, before the submission deadline on **Friday 24th March 2023, 4pm**.

[(1)] The list of teams can be found in section 1.4, Week 1 of our Moodle page.

THE MINI PROJECT

You can propose **any IoT project** you would like to work on. For this, you can use the components you received as a loan at the start of the term or any other components you might own. The only restrictions are that **you must use** the Arduino MKR WiFi 1010 board and the Arduino Cloud.

QUESTIONS AND ISSUES

At the beginning of the timetabled sessions on Monday 13th March, Thursday 16th March, Monday 20th March and Thursday 23rd March the instructors will be available in the corresponding rooms to answer questions regarding the project. If, after 10 minutes of waiting after the beginning of the session, or after answering the questions of the last students, nobody turns up, the instructors will end the session.

As usual, you can also use the Moodle Forum to post any questions or issues that you might have with your system.

THE VIDEO

The video should include the following information:

1. **The application description**: This should cover the purpose of the application, what physical phenomenon is being monitored, how the data is used, who the users of the application are.
2. **The system design description**: This should cover what sensors are used, how data is sent to the cloud and processed there. There should be at least one diagram to support this part of the presentation.

3. **System demonstration**: Here, you should show evidence of a working system
4. **Critical analysis:** This part should discuss the advantages and disadvantages of the developed application as well as the advantages and disadvantages of using the combination of Arduino MKR 1010/IBM Cloud for this application.

Please upload the video to Media Central (https://www.ucl.ac.uk/mediacentral/upload-mc) and submit the link to the video. Do not use other video services as the time of submission cannot be verified. If you have any issues with this, please contact the instructors ahead of the deadline. As such services are likely to be busy and the upload and processing can take some time, we would not recommend that you leave this until the last minute. Remember to make your video available to UCL Staff.

Submission Deadline: This should be submitted by **4pm on Friday 24th March 2023.**

ASSESSMENT

Your video will be assessed according to the criteria detailed below.

1) Description of the Application (25%): Is the application description complete? Is the application realistic and well justified?

2) Design (25%): Are the key required elements of the system outlined in the design? Have appropriate specifications for the elements been considered?

3) Demonstration (25%): Has a prototype been demonstrated that gives a good indication of the working of the system?

4) Critical Assessment (25%): Have advantages and drawbacks of the application's implementation been discussed? Have the good and bad points of the design been assessed considering the platform provided (i.e. Arduino MKR board and IBM Cloud)?

HOUSEKEEPING: COMPONENTS RETURN

You must return the components during the week commencing on 27th March 2023 and **no later than 31st March 2023** (unless you experience exceptional circumstances that prevent you to return the components on this date). To do so, you need to go to the 6.02 Lab, located in Malet Place Building (6th floor). You can reach Malet Place Building by going to the 6th floor of Roberts Building (the building where we held the workshop sessions) and crossing the bridge you find after exiting the lift and turning right (passing through the fire doors).

Once in the lab, speak to one of the lab technicians. They will have a list of the components you need to return. Please, notice that your marks will not be released until you return the components.