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| Student Name: xxxxx xxxxxxx | Student Number: xxxxxxxxxxx |
| Mobile Number: 08x xxx xxxx | Supervisor: xxxxxxxxxx xxxxxxxxxxxx |
| Programme Code: DTXXX | |
| Project Title: XXXXXXXXXXXXXXXXXXXXX | |
| Summary (approx 200 words) The goal of this project is to improve teaching and improve learning during a lecture. I plan to accomplish this by improving the way lecturers and students communicate in a lecture.  Ecudate will be a web application that will facilitate as a platform for students in a lecture. A lecturer can create a room, this room can then be joined by other users. It would be ideal to avoid any registration requirements by the students as I personally find it annoying having to register for something that I don’t plan to use outside of the lecture e.g slack.  Ecudate will include features such as live-polls, anonymous posts, questions, downloading room data, etc.. Everything will be done in real-time and because each room will consist of over 100 students, scalability will play a big part on this project.  It is unsafe to just allow students to post anonymously as inappropriate or offensive comments can be posted, using natural language processing machine learning I plan to try understand the context of the comment before broadcasting it to all the users in the room. Another approach would be to filter certain words and allow an admin of a room to add to the list of words to be filtered.  Along with a communication service, Ecudate will also allow for file sharing. The idea is for lecturers to be able to simply drag and drop a file into the room and have it instantly accessible to all students.  I plan to launch this project and hopefully have it used by DIT as it is something that I wish was used throughout my time as a student. | |
| **Background (and References)**  As a student, the one thing that I struggled with was communicating with the lecturer during lectures. I would lack the confidence to ask questions or answer questions in class.  During the course of my research, I have not come across an application similar to mine, by Yenala, *et al.* (2017). Their system is a medium for the lecturer and the student to communicate with each other, other than email. Also any of the applications that provide a medium for communication requires registration which is not ideal in certain scenarios.  Ainsworth, *et al*. (2011) looked at creating anonymity in classroom voting and debating. A lot of the times students are embarrassed to ask question in the fear that it may be a ‘dump’ question. The saying “no question is a dumb question” is true, but it in many cases students are still hesitant to ask a question. How can alleviate this feeling by allowing students to post a question anonymously.  Niramitranon, Sharples and Greenhalgh (2010) looked at the challenges of orchestrating learning in a one-to-one technology classroom. The key elements of a one-to-one are effective learning scenarios, tools that are easy to use, rapid design, interactions for scaffolding personal, group or class collaboration across multiple learning activities, interoperability of mobile and wireless connected devices. These are all the key features that I will take into consideration with Ecudate.  **References**  PollEverywhere. <https://www.polleverywhere.com/anonymous-feedback-tool>, Date Accessed: 11th October 2018  Yenala, H., Jhanwar, A., Chinnakotla, M. K., & Goyal, J. (2017). Deep learning for detecting inappropriate content in text. International Journal of Data Science and Analytics, 1-14. <https://link.springer.com/article/10.1007/s41060-017-0088-4>  Ainsworth, S., Gelmini-Hornsby, G., Threapleton, K., Crook, C., O’Malley, C., & Buda, M. (2011). Anonymity in classroom voting and debating. Learning and Instruction, 21(3), 365-378.  <https://pdfs.semanticscholar.org/6b8e/784da2d581c34f750a67fe0e4eb51d283c1c.pdf>  Niramitranon, J., Sharples, M., & Greenhalgh, C. (2010). Orchestrating learning in a one-to-one technology classroom. In *New Science of Learning* (pp. 451-467). Springer, New York.  <https://www.researchgate.net/profile/Mike_Sharples/publication/232644057_New_Science_of_Learning/links/0c96052cacb7b43a75000000.pdf> | |
| Proposed Approach Ecudate will allow for anonymous questions to be asked, this gives a voice for those student who lack confidence to shout out. Questions asked by students will be upvoted by other students if they share the same question, this will give the lecturer an idea of what questions people have in common/  Ecudate will support live polls as sometimes it may be hard to know where students are keeping up with the material, running a quick poll through the lesson can help gauge the students understanding of the subject matter and adjust the lesson based on their needs.  Lecturers will also be able to as a simply yes or not question which students can upvote or downvote. Simple questions tend to not be answered during a lecture.  A lot of the time during a lecture there is no convenient way to share a file that the lecturer has on their laptop/desktop. I am aware of webcourses and that notes go there but I mean in the sense where the lecturer wants to send something on the go.  There are three main areas to my approach:   * Design and research * Implementation * Testing / Maintenance   **Design and Research**   * + Natural language is a new area for me so I will have to do a lot of research in regards to this field.   + Designing and researching about the backend and database. In terms of what technologies to use and where to host. I also need to make the database as efficient as possible as I my application will be in real-time.   + As this is an application that I plan to launch, the front end has to be designed very well.   + Scalability is a big part of this project, I will need to research and find the best architecture that is scalable.   **Implementation**   * + Developing the backend and making it scalable for thousands of users concurrently is my main focus.   + Once the backend is fully completed, I will start working on the front end. I will use either ReactJs or AngularJS for the front end.   + Filter comments based on Natural language processing.   + Once development is completed, I will host the application and officially launch it.   **Testing / Maintenance**   * + As this is an application that will be live, it is very crucial to have e2e tests and integration tests as tests need to pass before making any changes to a live website.   + I plan to test this project in a real environment which will ideally be a lecture with over 100 students. | |
| Deliverables A project dissertation  A web app that will be launched  Interim Report | |
| Technical Requirements Laptop  Database hosting  Web hosting (AWS)  Mobile device - testing application on phone as most students will be on phone | |

## Project Reviews – Please include reviews of two of LAST 2 years projects from either DT228, DT282 or DT211C.

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| **Project 1**  **Title:** A Chatbot Assistant for Students  **Student:** Padraig McCarthy  Description (brief):  A chatbot application to help college students with questions relating to their college or their timetables. Using Natural language processing the application was able to make sense of the question and provide an answer, the application also served as a reminder when requested by the user, such as getting a reminder before a lecture starts.  The chatbot uses a familiar medium for the users such as facebook messenger, this increases accessibility for end users.  What is complex in this project  Natural language processing was the most complex part of this project, this included having to understanding what the user has asked and providing the right answer. Another tricky part of the chatbot was follow up questions.  What technical architecture was used  MongoDB, ElasticSearch, DialogFlow, Natural language processing, Microsoft Luis, google maps, Java  Explain key strengths and weaknesses of this project, as you see it.  Tracking messages by the bot to see when it went wrong was a great way to improve and monitor the chatbot.  Natural Language processing is a very difficult topic, the user did not implement a way for the chatbot to understand incorrect spelling. The approach taken was to use Microsoft Luis API to correct any spelling mistakes. | |
| **Project 2**  Title: Interactive Language Learning Tool for children with disabilities  Student: Kieran Hogan  Description (brief):  An application to help kids who suffer from language learning disabilities. The project was aimed to help kids who can only communicate though the use of symbol systems, The main goal was to help understand vocabulary through the use of symbols and animations.  A web interface is also provided to provide the parent with feedback on how their child is progressing with the application.  What is complex in this project:  Designing played a big part in the project. When your target audience is children, it is important to have a very appealing and simple layout.  What technical architecture was used  Unity, PHP, MySQL, FushionCharts  Explain key strengths and weaknesses of this project, as you see it.  The application provided a very simple and interactive layout. It is very challenging to design an application that can be used by children as it has to be as simple as possible but still offer all of the features.  A weakness to this project was that it was only an android application, it may have made more sense to make it a web app as that would allow for a larger user base. | |
| Proposal Sign off: | |
| **Student Signature:** | **Date:** |
| **Lecturer Signature:** | **Date:** |