**ASSIGNMENT 1 BRIEF**

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| **Qualification** | **BTEC Level 5 HND Diploma in Computing** | | |
| **Unit number** | UNIT 13: Computing Research Project | | |
| **Assignment title** | Proposing and conducting a research project | | |
| **Academic Year** | 2021 - 2022 | | |
| **Unit Tutor** | HOANG Nhu Vinh | | |
| **Issue date** | 21 March 2021 | **Submission date** | 21 March 2021 |
| **IV name and date** |  | | |

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| **Submission Format:** |
| *Format:* The submission is in the form of 1 document  You must use font *Calibri size 12, set number of the pages and use multiple line spacing at 1.3. Margins must be: left: 1.25 cm; right: 1 cm; top: 1 cm and bottom: 1 cm.* The reference follows Harvard referencing system.  *Submission* Students are compulsory to submit the assignment in due date and in a way requested by the Tutors. The form of submission will be a soft copy posted on <http://cms.greenwich.edu.vn/>  *Note:* The Assignment *must* be your own work, and not copied by or from another student or from  books etc. If you use ideas, quotes or data (such as diagrams) from books, journals or other sources, you must reference your sources, using the Harvard style. Make sure that you know how to reference properly, and that understand the guidelines on plagiarism. *If you do not, you definitely get failed* |
| **Unit Learning Outcomes:** |
| **LO1** Examine appropriate research methodologies and approaches as part of the research process  **LO2** Conduct and analyse research relevant for a computing research project  **LO3** Communicate the outcomes of a research project to identified stakeholders |
| **Assignment Brief and Guidance:** |
| **Introduction to theme Internet of Things** The Internet of Things (IoT) is the term which refers to the ever-growing network of physical objects with embedded sensors which can connect together via the internet allowing communication to occur between these objects and many other Internet-enabled devices and systems.  The IoT is quickly becoming a necessary aspect of people’s daily lives. Physical items can now sense and collect data which can be controlled through digital and smart technology. The IoT extends internet connectivity beyond traditional devices like desktop and laptop computers, smartphones and tablets to a diverse range of devices that can utilise embedded technology such as security systems, thermostats, cars, electronic appliances, lights, medical equipment etc. These devices, often called "connected" or "smart" devices, can talk to other related devices (machine-to-machine (M2M) communication) and act on the information they get from one another.  Along with the many benefits there is also considerable concern over the IoT which must be overcome in order to harness the power of this free flow of information. This unit will enable students to explore the benefits of the IoT, the potential future developments, the most pressing challenges and how to overcome them. Choosing a research objective/question Students are to choose their own research topic for this unit. Strong research projects are those with clear, well focused and defined objectives. A central skill in selecting a research objective is the ability to select a suitable and focused research objective. One of the best ways to do this is to put it in the form of a question. Students should be encouraged by tutors to discuss a variety of topics related to the theme to generate ideas for a good research objective.  The range of topics discussed could cover the following:   * Underpinning security and privacy issues and resolutions: data mining, data processing (e.g. GDPR), encryption (e.g. blockchain) * Smart homes, smart buildings and smart cities etc and their impact on individuals and society. * The future of IoT e.g. automate manufacturing, medicine and healthcare, virtual world, AI, machine learning etc. * The IT infrastructure required to support IoT e.g. 5G, proliferation of sensors, interoperability   You have to set you own research question in the research proposal base on the previous range of topic. The research question must be specific enough example: the audience of the research (job, age..), kind of devices(personal devices, household appliances, or combination of some kinds) |
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| **Learning Outcomes and Assessment Criteria** | | |
| **Pass** | **Merit** | **Distinction** |
| **LO1** Examine appropriate research methodologies and approaches as part of the research process | | **LO1 & 2**  **D1** Critically evaluate research methodologies and processes in application to a computing research project to justify chosen research methods and analysis. |
| **P1** Produce a research proposal that clearly defines a research question or hypothesis supported by a literature review.  **P2** Examine appropriate research methods and approaches to primary and secondary research. | **M1** Evaluate different research approaches and methodology and make justifications for the choice of methods selected based on philosophical/theoretical frameworks. |
| **LO2** Conduct and analyse research relevant for a computing research project | |
| **P3** Conduct primary and secondary research using appropriate methods for a computing research project that consider costs, access and ethical issues.  **P4** Apply appropriate analytical tools, analyse research findings and data. | **M2** Discuss merits, limitations and pitfalls of approaches to data collection and analysis. |
| **LO3** Communicate the outcomes of a research project to identified stakeholders | | **D2** Communicate critical analysis of the outcomes and make valid, justified recommendations. |
| **P5** Communicate research outcomes in an appropriate manner for the intended audience. | **M3** Coherently and logically communicate outcomes to the intended audience demonstrating how outcomes meet set research objectives. |