This document provides you with information about the requirements for assessment. Detailed instructions and resources are included to help you to complete and submit the task. The Criterion Reference Assessment (CRA) Rubric that markers use to grade the assessment task is included and should be used as a guide when working on the assessment task.

Task Overview

Assessment name:	Further Investigation into Computer Systems
Task description:	You are required to complete a series of further investigation questions, which corresponds to each week's lecture topic in ***Module 2 – High-level technologies***. They involve investigating topics beyond that covered in the lecture. To get a top mark you will need to provide critical understanding and insight. Your answers to these questions must be your own and new original material. It is important that all ideas, information and work taken from others is correctly quoted, cited and referenced; you must follow QUT guidelines for this: www.citewrite.qut.edu.au/cite/. You may use Harvard or APA referencing styles. You may not reuse other assignments or work of your own (self-plagiarism) or other people to answer these questions. You will be penalised for any work taken from others which is not correctly cited and referenced. Gross incorrect referencing or citing will result in a zero mark for the whole assignment, and potential reporting to QUT.
Learning outcomes measured:	• Explain different aspects of computer systems (hardware, software and networks), including their structure and operation, and security • Use information literacy skills to conduct computer systems research and troubleshoot IT problems
Due Date:	13th May 2022, 23:59
Estimated time to complete task:	Approximately 12 hours
Length:	1 page per answer (question)
Weighting:	20%

Individual or Group:	Individual. This task assesses your learning **you are not** permitted to collaborate with another student on this task.
Authentic Assessment:	☐ Yes ☒ No
Formative/Summative:	Summative
How will I be assessed:	7-point grading scale using a rubric

Task details

What you need to do:	1. Read the Criterion Reference Assessment Rubric. 2. Each week conduct independent research to answer each of the further investigation questions. 3. Write your answers and proofread your responses careful, making sure you correctly reference any ideas that are not your own. 4. Submit your assessment via the Turnitin link in Blackboard.
Presentation requirements:	Your response should include: 1. Assessment coversheet 2. Responses to weekly further investigation questions 3. Reference list. The project report must be formatted as follows: • 12 point font • Single linespacing • Use APA or Harvard referencing, but be consistent with the style you use.
Resources needed to complete task:	• Attend all classes and view pre-recorded videos • IFB102 Blackboard site • QUT Cite|Write APA guide • How to study effectively • Researching and notetaking • Writing and referencing

	• Submitting assignments with Turnitin.

Submission Information

What you need to submit:	**One** Adobe PDF document that contains: • Assessment Cover Sheet with name, student number and tutor details. • All of the responses to the further investigation questions. Please ensure you received an acknowledgement that your assignment has been successfully submitted. Given the load on Turnitin and Blackboard leading up to the assignment deadline we strongly encourage you to submit a copy of your assignment early, you can submit multiple copies. Please use the Firefox web browser. Late submissions will be given zero marks.
How to submit:	Use the Firefox web browser 1. Access the **Turnitin Submission link** >>**View/Complete** 2. Click on the **Submit** button 3. Give the submission a **title**, **select the correct file** and click the **Upload**. 4. Click **Confirm**. 5. Click **Return to Assignment list** 6. To check successful submission, you will receive a text match % (if this is an option), and you are able to resubmit, view or download your paper. 7. **ALWAYS** check your student email for the submission receipt.
Unable to submit your assignment on time	If for any reason you are unable to submit you assignment on time you can apply for an extension or special consideration. ***Tutors and unit coordinators cannot give extensions*** you must apply for an extension or special consideration.

What feedback will I receive?	Under normal circumstances, you will receive individual written feedback on this assessment task within 15 days of submission via Turnitin comments. You should read this feedback carefully and use it to strengthen your performance in the next unit. Your tutor will also provide general feedback in practical classes.
Moderation:	This assessment task will be marked by your tutor and will be moderated by the IFB102 team prior to the release of your results.

Academic Integrity

As a student of the QUT academic community, you are asked to work to uphold the principles of academic integrity during your course of study. QUT sets expectations and responsibilities of students, more specifically it states that students "adopt an ethical approach to academic work and assessment in accordance with this policy and the Student Code of Conduct. E/2.1 (MOPP C/5.3 Academic Integrity).

At university, students are expected to demonstrate their own understanding and thinking using the ideas provided by 'others' to support and inform their work, always making due acknowledgement to the source. While we encourage peer learning, it is not appropriate to share assignments with other students unless your assessment piece has been stated as being a group assignment. If you do share your assignment with another student, and they copy part of or all of your assignment for their submission, this is considered collusion and you may also be reported for academic misconduct. If you are unsure and need further information you can find this at:
http://www.mopp.qut.edu.au/C/C_05_03.jsp#C_05_03.03.mdoc

School of Computer Science

Assessment Cover Sheet

Please make sure you include the following details in your submission:

Student

Student name	Student number

Class

Tutor	
Practical Day, Time & Room	

IFB102 | INTRODUCTION TO COMPUTER SYSTEMS | ASSESSMENT TASK 1 RUBRIC

Criteria	High Distinction	Distinction	Credit	Pass	Fail	Low Fail	No Evidence
Knowledge of computer systems Weighting: 10%	Demonstrates an advanced in-depth and fully comprehensive knowledge of different aspects of computer systems and their real-world application.	Demonstrates for the most part an advanced and reasonably comprehensive knowledge of most aspects of different computer systems and their real-world application.	Demonstrates a broad knowledge of different computer systems and their real-world application, but with some minor gaps/errors in understanding.	Demonstrates a rudimentary knowledge of some aspects of different computer systems and/or their application, but with a number of gaps/errors in understanding.	Sketchy response to questions demonstrates a limited knowledge of different computer systems and/or their real-world application, but with a number significant gaps.	Insufficient/ incomplete responses demonstrates a very limited knowledge of different computer systems and/or their real-world application, but with significant gaps.	No evidence of addressing this criterion.
Research and evaluation Weighting: 5%	Evidence of well-developed research and critical evaluation to select a wide range of highly relevant, quality industry literature that moves significantly beyond unit provided materials.	Evidence of some developed research and at times, critical evaluation to select a range of relevant industry literature that moves beyond unit provided materials.	Evidence of emerging research and some evaluation for selecting in the main, generally relevant industry literature that slightly extends unit provided materials.	Evidence of some basic research and evaluation and use of some industry literature, but for the most part, does not extend beyond unit materials.	Limited evidence of research and evaluation being used to locate relevant industry literature. Little extension beyond unit provided materials.	Very little or no evidence of research. No extension beyond unit provided materials.	No evidence of addressing this criterion.
Critical thinking Weighting: 5%	Justification of recommendations is supported by clear, considered and logical arguments.	Justifications of recommendations, in the main, are supported by clear, considered and logical arguments.	Justification of recommendations are supported by generally clear and at times considered and logical arguments.	Some attempt is made to justify recommendations but frequently arguments are not well-considered or logically reasoned.	Recommendations where provided, in the main are weak, confused and not justified.	Recommendations have been stated but with no justification.	No evidence of addressing this criterion.

Further investigation questions

Class 5: Languages and Libraries

The fifth lecture describes the two key methods by which we manage complexity in computer systems: high level programming languages and software libraries. These techniques are used extensively at all levels of a computer system from low level hardware and software to business processes and workflows. These questions explore programming languages, and software libraries and their APIs.

*Please provide written answers to one of the following questions. Write a maximum of one page, you can list references on a second page. If you write more than a page any excess material will be disregarded. Please provide well thought answers; use critical thinking and try to be insightful: do not just repeat the marketing hype from companies. The goal is to produce a well thought out, insightful answer in just one page. Please link your answer to what we have been studying in the lectures and readings. Remember to correctly cite and reference all material you use (**http://www.citewrite.qut.edu.au/cite/**). Your answer should have a list of references and in text citations.*

1. Programming Languages

Investigate a new programming language such as Julia, Rust, Swift, Dart, Elm, Go or Elixir. Explain their design and implementation and how they relate to their intended use and benefits over more traditional languages.

2. Rosetta 2

Explain how Apple's Rosetta 2 enables new Apple Mac's with M1 processors to run Intel code. Carefully explain the problem, why it arose and how Rosetta 2 solves the problem.

Class 6: The Web

The sixth lecture concerns the world wide web: what it is, how it evolved and how it works. The web is ubiquitous and has become the fabric which connects almost everyone for business, education, healthcare, government and leisure. Thus, it is important for everyone to understand the basics of how it works and how it is evolving. These questions concern current and new web technologies.

Please provide written answers to one of the following questions. Write a maximum of one page, you can list references on a second page. Please provide well thought answers; use critical thinking and try to be insightful: do not just repeat the marketing hype from companies. Please link your answer to what we have been studying in the lectures and readings. Remember to correctly cite and reference all material you use

(http://www.citewrite.qut.edu.au/cite/). Your answer should have a list of references and in text citations.

1. Web site technologies

Pick one of the following technologies and describe how it simplifies modern web site development: Angular, JQuery, Bootstrap, Ember, Django, or Express.

2. Big Web Sites

Explain and illustrate some techniques which are used to make popular web sites scale to work with many users, for example large web sites like eBay, Facebook, Google and Amazon. Explain how the scalability works in terms of key web technologies which we have been studying.

Class 7: Security

The seventh lecture concerns computer security at the operating system, network and hardware level. The more our world becomes connected and automated the more important computer security becomes. Computer security affects all aspects of computer systems. These questions investigate security technologies and how computer security is achieved in different contexts.

Please provide written answers to one of the following questions. Write a maximum of one page, you can list references on a second page. Please provide well thought answers; use critical thinking and try to be insightful: do not just repeat the marketing hype from companies. Please link your answer to what we have been studying in the lectures and readings. Remember to correctly cite and reference all material you use (http://www.citewrite.qut.edu.au/cite/). Your answer should have a list of references and in text citations.

1. Securing Home PCs

Describe some of the challenges in securing a home PC and a networking, software and hardware solution to address these challenges.

2. Biometrics

Describe some new developments in security biometrics and the problems they solve.

Class 8: Mobile, Cloud and the Internet of Things

The eighth lecture discussed how Moore's Law is giving rise to new classes of technology, including the cloud, mobile devices and the Internet of Things (IoT). These questions investigate different technologies associated with these computing systems.

*Please provide written answers to one of the following questions. Write a maximum of one page, you can list references on a second page. Please provide well thought answers; use critical thinking and try to be insightful: do not just repeat the marketing hype from companies. Please link your answer to what we have been studying in the lectures and readings. Remember to correctly cite and reference all material you use (**http://www.citewrite.qut.edu.au/cite/**). Your answer should have a list of references and in text citations.*

1. Wearables

Explain some new technical developments in wearable computing: explain the technology, how it works and what features or services it offers and how they can be used.

2. Internet of Things

Describe a real application of the internet of things; please focus your explanation on the novel aspects of computer systems which make this work.