

## SCHOOL OF ENGINEERING, TECHNOLOGY & DESIGN

### ASSIGNMENT GUIDELINES

<b>TITLE OF MODULE:</b> MDIMS4DAC Data in Action	<b>MODULE COMPONENT:</b>  60% of Module
<b>MODULE TEAM:</b> Man Qi	<b>ASSIGNMENT CONTACT:</b> Man Qi
<b>ASSIGNMENT DEADLINE:</b> 19 <sup>th</sup> January 2024 AT 14:00	<b>EXPECTED FEEDBACK DATE:</b> <b>Location of Feedback:</b> VIA TURNITIN ON BLACKBOARD
<b>ASSESSMENT TYPE</b>	Critical review
<b>WHERE TO SUBMIT:</b> BLACKBOARD SUBMISSION TOOL TURNITIN SUBMISSION	
<b>WHAT TO SUBMIT:</b> A group report and presentation with high professional standard	
<b>TITLE(S) OF ASSIGNMENT:</b> Case Study	

#### General advice

- You are required to back up your work regularly onto a removable storage device. Always check the date-stamp on your files before submission.
- You **must** submit your work using the software versions we currently have on the University's network.
- For information about late submissions, plagiarism, and other submission information please see your Programme Handbook for more detailed guidance.

## ASSIGNMENT OVERVIEW

Canterbury Data Engine provides a suite of data services to help clients in data applications. From researching and building new data prospect lists, through to cleansing and enriching existing data, The company aims to be a one-stop-shop for clients' data needs.

The clients of Canterbury Data Engine are from various industry including retailing, healthcare, banking, marketing, media and entertainment and higher education. To better serve the clients, the company is undergoing profound research projects in the following areas. As the interns of Canterbury Data Engine, your group should select **ONE** area from below to undertake tasks (1) & (2):

- **Data Intelligence for Personalised Medicine**
- **Data Research for Longevity**
- **Data Mining for Trading**
- **Real Estate Marketing Using Data**
- **Data Applications for Olympics**
- **Social Networking Data Mining for Election**
- **Data for Predictive Policing**
- **Data Driven Climate Modelling and Prediction**

(1) Conduct a complete investigation of methods and techniques (tools) used, and critical analysis on the implications, challenges and possible solutions in data collection, data analysis and data presentation (visualisation) (45%)

(2) Data Mining for Competitors: explore the internet (e.g. gov.uk, Endole.co.uk), find 50 companies engaging in data service, conduct basic categorical data analysis as you defined. Filter the companies engaging in your selected area data service. You can use any tools for data crawling, analysis and presentation (visualisation), e.g. Octoparse, Excel, Tabular or Python etc. (30%)

### Handin

9,000-12,000\* (~2100 per person) word report and individual logs\*\* (~300 per person)

Executive summary	10%
Data collection in the selected area	15%
Data analysis in the selected area	15%
Data presentation (visualisation) in the selected area	15%
Data mining for competitors	30%
References	5%
Individual logs	10%

\*The word limit excludes title, table of contents, citations, references, diagrams, tables, illustrations, and all appendices if included.

\*\* The individual logs are self-reflection of the group project, including your contribution, individual work progress, view on the group work, and reflective description of knowledge and skills used and acquired through the group project. No fixed format. You can write in 1/2 paragraphs or in diary format.

**Notes:**

- Be very careful to read the assignment and ensure you know what is expected.
- Show your understanding of the subject matter in your report and be Harvard referenced throughout. <https://www.canterbury.ac.uk/asset-library/library/harvard.pdf>
- Keep in mind the overall word limit for the report and the exclusions to the word count.
- Remember that this is a formal report and it should be presented as such. It should be written in the 3rd person and presented as it might be in a real-life situation.
- Ensure that all necessary sections are present in your report to avoid losing marks.
- Look at the percentage of the overall marks being given to each section of the report and use it as a guidance to the attention paid to each section.
- Try not to reproduce large sections of referenced materials in the body of your report unless very specific to the case in question.
- Remember to consider carefully who the audience is and their respective levels of understanding.
- Keep in mind this is your own work and you should avoid any claim of plagiarism by carefully citing references.

## Self and peer assessment of group collaboration

Me: ..... Member A ..... Member B.....

Member C ..... Member D .....

Consider each member's contribution and effectiveness to the group task including your own.

Award 2 if the member contribution was outstanding and was effective member of the team.

Award 1 if the member was average within the team.

Award 0 if the member's contribution and effectiveness was poor, minimum effort applied.

Area	Contribution, skill and effectiveness	Me	A	B	C	D
Research	Established research tasks and components of a task					
	Effectively researched the problem					
	Developed strategies to explore assigned research tasks					
	Contributed individual part and group report writing effectively					
Communication	Share information with others					
	Discussed and re-evaluate information with others					
	Presentation skills, able to communicate/teach the problem					
Planning	Established resources and schedule to meet the task					
	Planned their time, did not waste others					
	Established role within the group and others within the group					
Total Weighting Factor /20						

**Reflection and comments on own contribution to the Group project:**

Individual marks will be weighted according to peer and self-assessment results. Therefore, each individual mark will be true representation of their contribution to this assignment and will be unique to that person.

It is important emphasis this is team assignment, each team member contribution is important in order to meet the project's objectives and ascertain a good mark. A team who solely relies upon the effort on one individual is not acting as team; the mark awarded will reflect this fact.

Individual marks for report will be calculated using the following formula:

$$I = G * (1 - ((AvePS - PS) / Max PS))$$

where

I is individual mark

G is group mark

PS is the average individual self-assessment mark and peer-assessment marks awarded by their group peers

Max PS is the maximum achievable peer and self-assessment mark, in this example 20.

AvePS is the overall average peer and self-assessment mark awarded, i.e. average of all PS for a group.

This formula makes it possible to reward those individuals who have contributed more than the average members of the group and penalise those who contribute less than the average group members. If you perceive no one in the group has contributed more or less then give yourself and your peers the same PS mark.

## Assessment rubrics

	Excellent	Good	Pass	Marginal Fail	Fail
<b>Executive summary (10%)</b>	<p>Excellent engagement with the purpose of the question(s). Response provides some original insights informed by the forefront of the field of study and/or professional practice.</p> <p>Demonstrates an excellent knowledge base, which is detailed, systematic, in-depth, current.</p> <p>Arguments are clear, coherent, tenable, and demonstrate originality and independence of judgement.</p>	<p>Effective engagement with the purpose of the question(s). Response provides some insights informed by research in the field of study and/or professional practice.</p> <p>Demonstrates an adequate factual and/or conceptual knowledge base, including some current research. Uses appropriate terminology.</p> <p>Arguments are generally clear, coherent, tenable, and demonstrate sound judgement.</p>	<p>Makes an adequate attempt at addressing the question(s), but with some digression and limitation in focus.</p> <p>Evidence of general knowledge of topic and use of appropriate terminology, but work lacks systematic awareness of current research and/or insights in the discipline.</p> <p>Demonstrates limited critical insight and judgement. Recognises alternative positions.</p>	<p>Some knowledge displayed but not clearly linked to the question(s).</p> <p>Some relevant and/or required knowledge missing or confused and/or significant misuse of terminology.</p> <p>Critical thought and/or judgement very limited and/or incoherent.</p>	<p>Does not address the question(s).</p> <p>Little or no relevant knowledge included.</p> <p>No evidence of critical thought.</p>
<b>Data collection (15%)</b>	<p>Demonstrates excellent research and justification on data collection strategy, methods and tools used in practice.</p>	<p>Demonstrates adequate research and justification on data collection strategy, methods and tools used in practice.</p>	<p>Evidence of research and justification on data collection strategy, methods and tools used in practice.</p>	<p>Some relevant and/or required work missing or confused and/or significant misuse of terminology about data collection.</p>	<p>Little or no relevant research and work shown on data collection</p>

	Excellent	Good	Pass	Marginal Fail	Fail
<b>Data analysis (15%)</b>	Excellent in addressing and justification of various data analysis approaches and analysis process.	Effective in addressing and justification of various data analysis approaches and analysis process.	Make an adequate attempt in addressing and justification of various data analysis approaches but not clear in analysis process.	Limited in addressing and justification of various data analysis approaches and analysis process.	No addressing and justification of various data analysis approaches and analysis process.
<b>Data presentation (15%)</b>	Demonstrate excellent research on data/results visualisation, using visual tools to present and illustrate data and results for better understanding.	Demonstrate adequate research on data/results visualisation, using visual tools to present and illustrate data and results for better understanding.	Make an attempt to show data/results graphs, tables but not adequate.	Limited/wrong data presentation, limited use of visual tools, not enough illustration.	No or irrelevant data/results presentation.
<b>Data Mining Competitors (30%)</b>	Demonstrate excellent case study in data collection, analysis and visualisation and critical comments on own work	Demonstrate adequate case study in data collection, analysis and visualisation and critical comments on own work	Make an attempt case study in data collection, analysis and visualisation and comments on own work	Limited case study in data collection, analysis and visualisation and comments on own work	No or irrelevant case study in data collection, analysis and visualisation and comments on own work
<b>References (5%)</b>	<p>Excellent use of sources to support discussion and personal findings. Referencing follows highly effectively the standards of the discipline.</p> <p>Excellent use made of primary sources collated independently, in conjunction with high quality secondary sources. Draws upon current research and / or advanced scholarship, at the forefront of the field of study or professional practice.</p>	<p>Effective use of sources to support discussion and personal findings. Referencing follows the standards of the discipline clearly.</p> <p>Uses an adequate and largely balanced combination of primary sources, collated independently, and secondary sources, including some current sources.</p>	<p>Sources of information acknowledged but integration between text and reference list is inconsistent. Attempts to follow systematic approach, appropriate to the discipline, does not always succeed.</p> <p>Scope and breadth of sources are limited, and not always current enough.</p>	<p>Some sources of information acknowledged but links between text and reference list unclear. Referencing does not follow a systematic approach.</p> <p>Scope and breadth of sources are very limited and not current.</p>	<p>Little or no acknowledgement of sources of information in text and/or reference list.</p> <p>Uses unreliable and / or inappropriate sources.</p>

	Excellent	Good	Pass	Marginal Fail	Fail
<b>Individual log (10%)</b>	Well-written and clearly structured with critical reflection of project management and individual learning and contribution to the team. Complete self and peer assessment	Structured writing with some critical reflection of project management, individual learning and contribution to the team.  Complete self and peer assessment	Partial reflection of project management project management, individual learning and contribution to the team.  Complete self and peer assessment	Little or no critical reflection of project management project management, individual learning and contribution to the team.  Incomplete or no self and peer assessment	Collection of thoughts - unstructured. Not a critical reflection. No conclusions.  No self/peer assessment.

### RESOURCES YOU MAY FEEL USEFUL:

See the module handbook for a list of resources

### LEARNING OUTCOMES ASSESSED:

1. Demonstrate systematic knowledge and understanding of the history of data in action across a range of social, political and commercial contexts
2. Demonstrate conceptual understanding of the practice of data collection and apply ethical considerations and legal requirements to the critical analysis of practice across a range of social, political and commercial contexts
3. Understand, evaluate and critically apply appropriate data gathering techniques, drawing on knowledge which is informed research and developments at the forefront of the discipline
4. Collate and critically review data sets leading to the identification of a common data language
5. Convey information clearly to specialist and non-specialist audiences in public, private and third sector enterprises.

### GRADUATE / EMPLOYABILITY SKILLS GAINED:

This assessment is an opportunity to develop an understanding of data in action.

All tasks build on skills and knowledge required in industry, namely researching a problem (analysis), developing/ pitching an idea (conception/ design/ communication) and documentation (though informal).

This assessment has been designed to exercise your ability to work within a team and the ability of research.

### CCCU GRADUATE ATTRIBUTES

Adaptable:

- Resilient and helps to bring about positive transformation in the face of continuous and rapid change.
- Able to apply their knowledge and skills in order to thrive within a globalised society.

Digitally Literate:

- Engages critically and creatively with academic and professional communications through a range of media.
- Participates in digital networks for learning and research.
- Manages their digital reputation and online identity.
- Confident in the use of digital devices, applications and services.

Effective Communicator

- Understands and expresses their ideas and thoughts with confidence using a variety of media.
- Develops rapport, respects diversity, has passion and can communicate with self-assurance.

Informed



- Explores concepts and issues related to their academic programme of study and beyond, that have both local and international significance.
- Aware of issues relating to social justice, ethics and wellbeing.
- Understands the concepts of environmental stewardship.

#### Innovative

- Independent critical thinker with an intellectual curiosity.
- Exercises initiative in applying thinking styles critically and creatively.
- Able to develop and defend their own ideas with the capacity to challenge assumptions where necessary

#### Professional

- Possesses integrity and is able to instil confidence in others.
- Lifelong learner; managing their own self development.
- Recognises and approaches complex problems by making reasoned, ethical decisions.

#### Self-Aware

- Self-reflective and empathetic; being able to respect and appreciate other people's points of view.
- A developed sense of self purpose and a capacity for wonder.

### **PROGRAMMES OF STUDY:**

MSc Data Intelligence