



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

LEVEL/ LEFEL 6

SEMESTER 1

MODULE CODE/ COD Y MODIWL: M6X01088
Business Intelligence Systems

ASSESSMENT TYPE/ MATH O ASESU: ASSIGNMENT

ASSESSMENT/COMPONENT/ ASESAD/CYDRAN: 1

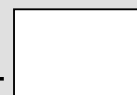
COMPONENT WEIGHTING/ PWYSAU'R CYDRAN: 30 %

WORD COUNT/ NIFER Y GEIRIAU: 1800 WORDS/O EIRIAU

MODULE TUTOR / TIWTOR Y MODIWL: Dr Nik Whitehead

SUBMISSION DETAILS/ MANYLION CYFLWYNO:

- **Make sure that Your Name , Your Student P Number, Your Module Title, Assignment Title and Your Module Lecturer's Name are clearly shown on the front page of your assignment**
- **All assignments must be submitted electronically to Turnitin unless indicated by the module lecturer here:**
- *** If lecturer additionally requires you to upload coding separately to Moodle it will be indicated here: NO**
- *** If a paper submission is required then it will be indicated here: NO**
- **you will then be required to submit the assignment parts in a suitable report folder– not in poly-pockets - to the library. For paper submissions only this form (ALL PAGES) MUST be printed out, signed, attached to the front of your assignment and submitted to the library separately from your electronic assignment submission. Paper submission assignments will not be accepted without this form as it is a requirement that you sign the disclosure regarding the referencing convention.**
- **DO NOT put this form into Turnitin or it will match many similarities with other students' submissions.**



School of Applied Computing ASSIGNMENT SPECIFICATION

Student name:		Student P number:	
Programme:			
Lecturer:	Dr Nik Whitehead	Internal Verifier:	Dr Kemi Ademoye
Assignment Title:	Business Intelligence Systems – Data Analysis & Mining		
Hand Out Date:	October 2017	Submission deadline:	12 th January 2018

Referencing:	In the main body of your submission you must give credit to authors on whose research your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have read or quoted in order to complete this assignment (e.g. for books: surname of author and initials, year of publication, <u>title of book</u> , edition, publisher: place of publication).		
Disclosure:	I declare that this assignment is all my own work and that I have acknowledged all materials used from the published or unpublished works of other people. All references have been duly cited.		
Student's Signature:	Assignments will not be accepted without a signature here	Date:	

Late submission will result in a late penalty mark, as follows:

Up to one week late, maximum mark of 40% for first attempts. No late submission for resit work.

(Academic Quality Handbook 2017/18 7.5 (5))

Only the Extenuating Circumstances Committee may grant an extension.

**Learning Outcomes tested
(from module syllabus)**

1. Synthesise a solution to a small data warehousing problem from a sound understanding of the role and capabilities of modern business information systems
2. Select and perform appropriate data analysis and reporting on data within a BIS and critically evaluate the results
3. Provide business intelligence through the creative application of appropriate data mining processes and the critical evaluation of their results.

TASK DESCRIPTION

The Adventureworks database contains all production, sales, HR and shipping data for the company's operations over the years 2001-2004. You will be assigned a geographical region and should provide a summary report describing the company's sales over that period and forecasting sales over the following 12 month period.

Your report should include:

- A brief description of the data set in terms of the significant attributes present in the data, the number of instances, missing values, and other relevant characteristics.
- A description of how sales and profits have changed over time for both the main categories of goods sold and for significant subcategories.
- Trends and forecasts for both the main categories and significant subcategories of goods sold.
- Market basket analysis of items to identify any combinations of goods that occur together and might therefore benefit from promotion via special deals.
- Identification of any problem items and recommendations as to how Adventureworks should deal with the problems.

The report should be no more than 2000 words long and should include such graphics as are appropriate to illustrate your answers.

GUIDANCE FOR STUDENTS IN THE COMPLETION OF TASKS

This report should be structured and formatted as a business report. Imagine that you are the data analyst reporting to the sales manager at the end of the year. What information will they need to know? How much detail will it need? Is there anything that needs to be drawn to their attention? In effect, you will be performing a SWOT (strengths, weaknesses, opportunities, threats) analysis based upon your investigation of the dataset.

The mark distribution for this assignment is as follows:

- (5%) Description of the dataset.
- (20%) Description of the variation in sales and profits over time
- (20%) Identification of significant or anomalous sales categories/subcategories
- (15%) Trends, forecasts and basket analyses (data mining)
- (15%) Business recommendations, which should be clearly rooted in the analyses performed
- (15%) Appropriate use of graphics for illustration
- (10%) Report writing
 - Are all required features included in the report?
 - Quality of report
 - Formatting

WHAT YOU SHOULD SUBMIT

The report (but not the assignment specification) should be submitted via Turnitin.

MARKING CRITERIA AND STUDENT FEEDBACK

This section details the assessment criteria. The *extent* to which these are demonstrated by you determines your mark. The marks available for each criterion are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

QUESTION	EXCEPTIONAL 5	MERITORIOUS 4	COMPETENT 3	PASS 2	FAIL 1	NON-SUBMISSION
Dataset description (5%)	Identifies significant occurrences relating to temporal and geographical information; summarises highlights	Identifies any significant occurrences relating to temporal and geographical information	Basic description with temporal and geographical information	Basic description	Incorrect or misleading	Missing
Variation in sales and profits (20%)	Discusses overall variation in terms of temporal, geographical and sector variations	Examines both overall and categorical figures; may consider variations in local markets	Identifies significant seasonal variations in sales and profits; may consider categorical figures or local markets	Identifies annual variations in sales and profits	Incorrect or misleading	Missing
Significant and anomalous items (20%)	Thorough discussion of significant and anomalous items and their possible causes and consequences	Identifies significant items AND anomalous items; considers their links to the rest of the data; considers possible and consequences	Identifies significant items OR anomalous items; considers their links to the rest of the data; may consider causes or consequences	Identifies significant items OR anomalous items; no discussion of their origin	Incorrect or misleading	Missing
Data mining (15%)	Detailed discussion of all three elements; basket analysis identifies associations of interest at product level	Discusses trends and forecasts for significant categories as well as overall sales and profits; categorical basket analysis	Uses trends to create forecasts in overall sales and profits; may include basic categorical basket analysis	Identifies trends in overall sales and profits;	Incorrect or misleading	Missing
Business recommendations (15%)	Full and detailed recommendations with multiple options	Discusses and justifies the recommendations	Several recommendations, clearly linked to the data	One or two obvious recommendations	Incorrect or misleading	Missing
Graphics and illustrations (15%)	All graphs are optimised for rapid comprehension, clear and well-labelled	All graphs are appropriate, clear and well-labelled	All points illustrated; most labels and graph styles are appropriate	Appropriate graphics used to illustrate most points; most labelling is appropriate	Incorrect or misleading	Missing
Report writing (10%)	Reads like a business report	Good use of signposting; generally good language use; spellchecked and grammar-checked	Clear sectioning of content; requires spellchecking and/or grammar-checking	Basic use of introduction, body and conclusion; language is understandable	No clear structure	Missing

Comments

Assignment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)	Late Submission Penalties (tick if appropriate)		%
	Up to one week late		
	First Attempt?		

BACHELORS COMMON ASSESSMENT AND MARKING CRITERIA

	OUTRIGHT FAIL	UNSATISFACTORY	SATISFACTORY	GOOD	VERY GOOD	EXCELLENT	EXCEPTIONAL
Assessment Criteria	0-29%	30-39%*	40-49%	50-59%	60-69%	70-79%	80-100%
1. Research-informed Literature Extent of research and/or own reading, selection of credible sources, application of appropriate referencing conventions	Little or no evidence of reading. Views and findings unsupported and non-authoritative. Referencing conventions largely ignored.	Poor evidence of reading and/or of reliance on inappropriate sources, and/or indiscriminate use of sources. Referencing conventions used inconsistently.	References to a limited range of mostly relevant sources. Some omissions and minor errors. Referencing conventions evident though not always applied consistently.	Inclusion of a range of research-informed literature, including sources retrieved independently. Referencing conventions mostly consistently applied.	Inclusion of a wide range of research-informed literature, including sources retrieved independently. Selection of relevant and credible sources. Very good use of referencing conventions, consistently applied.	A comprehensive range of research informed literature embedded in the work. Excellent selection of relevant and credible sources. High-level referencing skills, consistently applied.	Outstanding knowledge of research-informed literature embedded in the work. Outstanding selection of relevant and credible sources. High-level referencing skills consistently and professionally applied.
2. Knowledge and Understanding of Subject Extent of knowledge and understanding of concepts and underlying principles associated with the discipline.	Major gaps in knowledge and understanding of material at this level. Substantial inaccuracies.	Gaps in knowledge, with only superficial understanding. Some significant inaccuracies.	Evidence of basic knowledge and understanding of the relevant concepts and underlying principles.	Knowledge is accurate with a good understanding of the field of study.	Knowledge is extensive. Exhibits understanding of the breadth and depth of established views.	Excellent knowledge and understanding of the main concepts and key theories. Clear awareness of challenges to established views and the limitations of the knowledge base.	Highly detailed knowledge and understanding of the main theories/concepts, and a critical awareness of the ambiguities and limitations of knowledge.
3. Analysis Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence	Unsubstantiated generalisations, made without use of any credible evidence. Lack of logic, leading to unsupported/missing conclusions. Lack of any attempt to analyse, synthesise or evaluate.	Some evidence of analytical intellectual skills, but for the most part descriptive. Ideas/findings sometimes illogical and contradictory. Generalised statements made with scant evidence. Conclusions lack relevance.	Evidence of some logical, analytical thinking and some attempts to synthesise, albeit with some weaknesses. Some evidence to support findings/views, but evidence not consistently interpreted. Some relevant conclusions and recommendations, where relevant	Evidence of some logical, analytical thinking and synthesis. Can analyse new and/or abstract data and situations without guidance. An emerging awareness of different stances and ability to use evidence to support the argument. Valid conclusions and recommendations, where relevant	Sound, logical, analytical thinking; synthesis and evaluation. Ability to devise and sustain persuasive arguments, and to review the reliability, validity & significance of evidence. Ability to communicate ideas and evidence accurately and convincingly. Sound, convincing conclusions / recommendations.	Thoroughly logical work, supported by evaluated evidence. High quality analysis, developed independently or through effective collaboration. Ability to investigate contradictory information and identify reasons for contradictions. Strong, persuasive, conclusions, justifiable recommendations.	Exceptional work; judiciously selected and evaluated evidence. Very high quality analysis, developed independently or through effective collaboration. Ability to investigate contradictory information and identify reasons for contradictions. Highly persuasive conclusions
4. Practical Application and Deployment Effective deployment of appropriate methods, materials, tools and techniques; extent of skill demonstrated in the application of concepts to a variety of processes and/or contexts; formulation of innovative and creative solutions to solve problems.	Limited or no use of methods, materials, tools and/or techniques. Little or no appreciation of the context of the application.	Rudimentary application of methods, materials, tools and/or techniques but without consideration and competence. Flawed appreciation of the context of the application.	An adequate awareness and mostly appropriate application of well-established methods, materials, tools and/or techniques. Basic appreciation of the context of the application.	A good and appropriate application of standard methods, materials, tools and/or techniques. Good appreciation of the context of the application, with some use of examples, where relevant.	A very good application of a range of methods, materials, tools and/or techniques. Very good consideration of the context of the application, with perceptive use of examples, where relevant. Evidence of some innovation and creativity.	An advanced application of a range of methods, materials, tools and/or techniques. The context of the application is well considered, with extensive use of relevant examples. Application and deployment extend beyond established conventions. Innovation and creativity evident throughout.	Outstanding levels of application and deployment skills. Assimilation and development of cutting edge processes and techniques.
5. Skills for Professional Practice Demonstrates attributes expected in professional practice including: individual initiative and collaborative working; deployment of appropriate media to communicate (including written and oral); clarity and effectiveness in presentation and organisation.	Communication media is inappropriate or misapplied. Little or no evidence of autonomy in the completion of tasks. Work is poorly structured and/or largely incoherent.	Media is poorly designed and/or not suitable for the audience. Poor independent or collaborative initiative. Work lacks structure, organisation, and/or coherence	Can communicate in a suitable format but with some room for improvement. Can work as part of a team, but with limited involvement in group activities. Work lacks coherence in places and could be better structured.	Can communicate effectively in a suitable format, but may have minor errors. Can work effectively as part of a team, with clear contribution to group activities. Mostly coherent work and is in a suitable structure.	Can communicate well, confidently and consistently in a suitable format. Can work very well as part of a team, with very good contribution to group activities. Work is coherent and fluent and is well structured and organised.	Can communicate professionally and, confidently in a suitable format. Can work professionally within a team, showing leadership skills as appropriate, managing conflict and meeting obligations. Work is coherent, very fluent and is presented professionally.	Can communicate with an exceptionally high level of professionalism. Can work exceptionally well and professionally within a team, showing advanced leadership skills. Work is exceptionally coherent, very fluent and is presented professionally.