

BIS3214

Data Warehousing and Business Intelligence

Coursework 1

2014-15

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School of Science and Technology

# Coursework

## Details of Coursework

The coursework forms 100% of the assessment for this module. The coursework is split into two parts. Part 1 (40%) is given below and part 2 (60%) will be available on MyUniHub in January 2015.

### Deadline for Submission of Coursework

|  |  |  |
| --- | --- | --- |
| **Coursework element** | **Type** | **Date Due** |
| Part 1 – Data Warehousing | Draft | Labs in Week 11 |
| Final Report | Friday 23rd January 2015 |
| Part 2 – Data Mining | Draft | Labs in Week 20 |
| Final Report | Friday 27th March 2015 |

# Coursework – Part 1

**1. Overview**

This section contains the material for part 1 of the coursework.

**2. Important Dates**

You must ensure you meet the deadlines for each element.

|  |  |  |
| --- | --- | --- |
| **Portfolio Element** | **Type** | **Due Date** |
| 1 | Draft | Labs in Week 11 |
| 2 | Final Report | Friday 23rd January 2015  (Week 13) |

By Week 11, you should have a draft report ready to discuss with your tutor for feedback.

**3. Plagiarism**

Plagiarism in data warehouse design is easy to spot. Please be aware that the penalties are severe and your final degree award classification is at risk.

**4. Coursework Content**

**You are required to work in a group (maximum 6 and minimum 4).**

**Group Members**:

|  |  |  |
| --- | --- | --- |
| Project Name | Student id | Student name |
|  |  |  |
|  |  |  |
|  |  |  |

**5. Self-Assessment and Peer Assessment**

Every member of the group is expected to complete the self-assessment and peer assessment forms. (See end of document)

**6. Coursework Requirements:**

In this coursework you are expected to design a data mart for a department (or sub-section) of an organisation of your choice. This can be an existing or imaginary organisation. For your chosen organisation, you will need to provide a detailed analysis of your data sources; design the data model, the database schema and the database integration framework. It is desired that you apply Extended ER or UML modelling technique to represent the data model, schema and dimension design.

Your submission should include a full bibliography with appropriate referencing of sources and appendices you may collect during your survey. The referencing demonstrates the range of your engagement with current theories and practices and highlights the breadth of your exploration on the topic.

Your submission should be in the form of a report and should contain the following:

1. Introduction (5 marks)
   1. The Company name and type of business
   2. The Company objective, vision and scope
   3. The department (or sub-section) to be considered.
2. Analysis of Operational Systems and Data Sources (20 marks)
   1. A discussion of the organisations current operational system
   2. The data sources used by the systems discussed in 2.1.
   3. An ERD(s) for the business
   4. A discussion of the advantages/disadvantages that a data mart would have for your organisation.
3. Data Mart Design (30 marks)
   1. The identification of two subject areas, identified during 2, which would be of benefit to the managers your organisation.
   2. The design of the star schemas associated with both subjects area identified in 3.1
   3. A discussion of the granularity of dimension and fact tables
   4. The extension of one of the star schemas into a snowflake schema.
4. Data Mart Implementation (20 marks)
   1. Implement a prototype of the data mart by creation of the required tables.
   2. Discuss how you will you implement the ETL process? E.g. full or incremental, online or offline extraction?
5. Data Analysis (20 marks)
   1. A discussion on different OLAP techniques, with reference to data cubes.
   2. An explanation how your data mart could provide relevant information for your managers
   3. This should include three relevant data queries. (You need to include sample scripts)
6. Conclusions (5 marks)
   1. A discussion of strategies to overcome future challenges.

**7. BIS3214 Self Assessment Template**

***Using the scale of 0 to 5 please provide a critical appraisal of what has been achieved, and of your contribution and of the other team members’ contribution.***

***0 = Absent (or Very Poor)***

***1 = Poor***

***2 = Satisfactory***

***3 = Good***

***4 = Very Good***

***5 = Excellent***

#### Self Assessment

1. *How would you rate your technical contribution to the group work?………..*
2. *How would you rate your contribution in terms of organisation? …………...*
3. *How would you rate your contribution in terms of communication? ………..*
4. *The holistic view of things argues that group work has more benefits than drawback and that groups always achieve more and better results than people working as individuals. Please rank the following in order of importance in the context of group work (using 1 for the most important):*

|  |  |
| --- | --- |
| **Benefit** | **Ranking** |
| Sharing of knowledge |  |
| Sharing the work load |  |
| Enhancing Communication |  |
| Compromise/Listening to others |  |
| Obtaining additional perspectives |  |
| Providing Mutual Support |  |
| Learning from teaching others |  |

Please insert your name and your Student Number below

##### Name:……………………………………………………..

##### Student No:……………………

**8. BIS3214 Peer Assessment**

***Using the scale of 0 to 5 please provide a critical appraisal of what has been achieved, and of your contribution and of the other team members’ contribution.***

***0 = Absent (or Very Poor) 1 = Poor***

***2 = Satisfactory 3 = Good***

***4 = Very Good 5 = Excellent***

**Member name Member Student No:…………………..**

*1 How would you rate the above member’s technical contribution to the group work?………..*

*2 How would you rate the above member’s contribution in terms of organisation? …………...*

*3. How would you rate the above member’s contribution in terms of communication? ………..*

**Member name Member Student No:…………………..**

*1 How would you rate the above member’s technical contribution to the group work?………..*

*2 How would you rate the above member’s contribution in terms of organisation? …………...*

*3. How would you rate the above member’s contribution in terms of communication? ………..*

**Member name Member Student No:…………………..**

*1 How would you rate the above member’s technical contribution to the group work?………..*

*2 How would you rate the above member’s contribution in terms of organisation? …………...*

*3. How would you rate the above member’s contribution in terms of communication? ………..*

**Member name Member Student No:…………………..**

*1 How would you rate the above member’s technical contribution to the group work?………..*

*2 How would you rate the above member’s contribution in terms of organisation? …………...*

*3. How would you rate the above member’s contribution in terms of communication? ………..*

**Member name Member Student No:…………………..**

*1 How would you rate the above member’s technical contribution to the group work?………..*

*2 How would you rate the above member’s contribution in terms of organisation? …………...*

*3. How would you rate the above member’s contribution in terms of communication? ………..*

**Member name Member Student No:…………………..**

*1 How would you rate the above member’s technical contribution to the group work?………..*

*2 How would you rate the above member’s contribution in terms of organisation? …………...*

*3. How would you rate the above member’s contribution in terms of communication? ………..*

***Any additional comments?***

Please insert your name and your Student Number below

##### Name:……………………………………………………..

##### Student No:……………………

1. **Marking Scheme**

|  |  |  |
| --- | --- | --- |
| **1st** |  | Significant levels of analysis to improve original business problem |
| **(70+)** |  | Correctly identify all data sources and data model |
|  | Demonstrates a clear, comprehensively understanding of Data  Warehouse design | |
|  |  | Shows initiative in approach to handle of Data Warehouse challenge |
|  |  |  |
| **Upper 2nd** |  | Show deep understanding of the business problem. |
| **(60-69)** |  | Correctly identify all data sources and data model |
|  | Demonstrates accurate knowledge and understanding of Data Warehouse  design | |
|  | Report is error free. There are no spelling mistakes or in-correctly used  words. There are no long, confused or unwieldy sentences. | |
|  |  |  |
|  |  |  |
| **Lower 2nd** |  Clearly identify business problem   Correctly identify all data sources and data model  Demonstrates a limited but accurate level of understanding of Data  Warehouse design.  Report is near error free. There are very few spelling mistakes or in-correctly  used words. There are no long, confused or unwieldy sentences. | |
| **(50-59)** |
|  |
|  |
|  |
|  |
| **3rd** |  Show basic understanding of business problem   Correctly identify most data sources and data model   Some confusion in understanding of Data Warehouse designs. Some  overall structure and conceptual understanding  The grammar and punctuation in the report is reasonable. There are some  long, confused or unwieldy sentences, which distract from legibility | |
| **(40-49)** |
|  |
|  |
|  |
|  |
| **Fail** |  | Business problem is not clearly identified |
| **(<40)** |  | Correctly identify some data sources and data model |
|  | Limited understanding and demonstration about Data Warehouse design | |
|  |  | Restricted use of literature and inadequate referencing. |

### Where to submit

Each group should submit one report via the drop box in your learning environment. Make sure you clearly identify ALL group members by name and student Id.

Do not hand written assessed coursework directly to your tutor, and do not submit it by email to your tutor