Aspley State High School

Year 12 Information Processing and Technology

Assessment Item J

Information and Intelligent Systems 4

Relational Information Systems, Database Theory & Practice

Major Project

Semester 4, 2008 | **Time: 6 weeks**
Summative Assessment | **No Teacher Input**
DATE ISSUED: 28 July | **DATE DUE: 5 September**

STUDENT NAME: _____ **TEACHER: Ms Raciti**

RESULTS

CRITERIA	STANDARD
Knowledge	
Research & Development	

TASK: You are required to develop an Information System based on the relational model for an organisation of your choice.

You are required to keep a daily log recording the date, activity and time spent in and out of class.

PART A

REQUIREMENTS ANALYSIS AND DETERMINATION

Perform a needs analysis thereby clarifying the UoD, and defining the problem. Your specifications document will contain:

- general problem description, providing background information on the topic/organisation for whom you are developing the information system
- rationale for development, explaining the reason for developing the system – identify the advantages of implementing such a system and the benefits that will be gained compared with the existing system
- aims and objectives – specifics on what the system will be able to do

CONCEPTUALISATION & FORMALISATION

❖ **CONCEPTUAL SCHEMA DESIGN**
- identify the entities that are part of the system
- develop elementary sentences that describe the relationships in the UoD
- convert these elementary sentences into a CSD
- apply uniqueness and mandatory role constraints
- apply entity constraints
- apply frequency constraints
- apply any other constraints you deem necessary

❖ **RELATIONAL SCHEMA**
- apply the Optimal Normal Form algorithm
- develop the relational schema

❖ **DATA FLOW DIAGRAM**
- Develop a data flow diagram showing the flow of data through the system, including the input, processing, output and storage of data

❖ **DATA DEFINITION**
- determine data and table definitions
- list any assumptions you have made in developing your conceptual schema

PART B

USER MANUAL

- What does the system do?
- How does the system work?
- Simple tutorial
- Installation

IMPLEMENTATION AND TESTING

- use Microsoft Access to develop and populate each table with at least 10 sample prototype data for each table

- obtain printouts of the populated tables

- use Microsoft Access to design and generate four (4) output reports (each report should demonstrate an understanding of design and report layout features and be consistent with document and screen design principles)

Accompany each report with:

1 A brief description of relevance, usefulness and the context in which it would be used
2 A listing of the SQL query
3 A sample copy of the output report using test data

NB Marks will be awarded for the complexity of the queries, the usefulness of the documents and the design features incorporated in the report.

EVALUATION

1 How closely the system achieves the objectives

2 Performance, reliability and ease of use

3 Possible alterations and improvements that can be made

Information Systems – Major Project

Marking Scheme

	ASPECT	Very Good		Good		Sound		Poor		Very Poor
	IDENTIFICATION									
R&D	Is a comprehensive needs analysis and concise problem description given?	2		1½		1		½		0
	CONCEPTUALISATION									
R&D	Has a satisfactory rationale been presented?	2		1½		1		½		0
R&D	Is a general aim given?	2		1½		1		½		0
R&D	Are realistic objectives presented?	2		1½		1		½		0
	FORMALISATION									
R&D	Elementary sentences complete and correct?	4	3½	3	2½	2	1½	1	½	0
R&D	Have the Elementary Sentences been correctly mapped to the Conceptual Schema?	4	3½	3	2½	2	1½	1	½	0
R&D	Are the choices of Entities and Labels appropriate?	2		1½		1		½		0
R&D	Are the roles descriptive and meaningful?	2		1½		1		½		0
R&D	Correct set of uniqueness constraints applied on the Conceptual Schema?	4	3½	3	2½	2	1½	1	½	0
R&D	Correct mandatory constraints applied on the Conceptual Schema?	4	3½	3	2½	2	1½	1	½	0
R&D	Does the Conceptual Schema demonstrate an indepth understanding of unary, binary, and ternary facttypes?	4	3½	3	2½	2	1½	1	½	0
K	Correct entity constraints applied on the Conceptual Schema?	2		1½		1		½		0
R&D	Has the ONF algorithm been applied correctly to achieve the Relational Schema?	4	3½	3	2½	2	1½	1	½	0
R&D	Are the assumptions clearly stated?	2		1½		1		½		0

	ASPECT	Very Good		Good		Sound		Poor		Very Poor
	IMPLEMENTATION									
K	Has the database been created using MS Access?	6	5	4½	3½	3	2	1½	½	0
K	Have the tables been populated using MS Access?	6	5	4½	3½	3	2	1½	½	0
K	Have four reports been developed?	4	3½	3	2½	2	1½	1	½	0
R&D	Has a satisfactory description of relevance, usefulness and context been given?	4	3½	3	2½	2	1½	1	½	0
R&D	Do the report documents demonstrate an indepth understanding of SQL?	4	3½	3	2½	2	1½	1	½	0
K	Do the reports demonstrate an understanding of the design features available in Access?	4	3½	3	2½	2	1½	1	½	0
K	Are printouts given for sql code?	2		1½		1		½		0
K	Are printouts given for populated tables?	2		1½		1		½		0
K	Are printouts given for each report?	2		1½		1		½		0
	EVALUATION									
R&D	Has the application been thoroughly evaluated in terms of achieving the objectives?	2		1½		1		½		0
R&D	Has the application been thoroughly evaluated in terms of achieving performance?	1½		1		½		0		0
R&D	Has the application been thoroughly evaluated in terms of achieving reliability?	1½		1		½		0		0
R&D	Has the application been thoroughly evaluated in terms of ease of use?	2		1½		1		½		0
R&D	Have possible alterations or improvements to the application been listed?	2		1½		1		½		0
K	Has the specification document been organised, well prepared and presented?	7		6	5	4	3	2	1	0

CRITERIA	SCORE	STANDARD
Knowledge	/35	
Research and Development	/55	