MANCHESTER METROPOLITAN UNIVERSITY

School of Computing, Mathematics & Digital Technology

ASSIGNMENT COVER SHEET

Unit:	Code: 6G4Z1103
Assignment set by:	Stephen Gordon
Verified by:	Anthony Kleerekoper
Moderated by:	Luciano Gerber
Assignment number:	1CWK65
Assignment title:	Project
Type:	Group
Hand-in format and mechanism:	Both via Unit area on Moodle and via Coursework Receipting
Deadline:	19th March 2017

Learning Outcomes Assessed:

Learning Outcome 2:	Apply (selected) techniques of System Analysis and Design to Information Systems Development
Learning Outcome 3:	Design and implement an Information System using a commercial Database Management System
Learning Outcome 4:	Demonstrate written and oral communication skills using appropriate language and form
Learning Outcome 5:	Identify, develop and critically reflect on own engagement with professional development, confidently apply for professional job roles in their subject area and

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It is your responsibility to ensure that your work is complete and available for assessment by the date given on Moodle. If submitting via Moodle, you are advised to check your work after upload; and that all content is accessible. Do not alter after the deadline. You should make at least one full backup copy of your work.

Penalties for late hand-in: see Regulations for Undergraduate Programmes of Study: http://www.mmu.ac.uk/academic/casqe/regulations/assessment.php. The timeliness of submissions is strictly monitored and enforced.

Exceptional Factors affecting your performance: see Regulations for Undergraduate Programmes of Study : http://www.mmu.ac.uk/academic/casqe/regulations/assessment/docs/ug-regs.pdf

Plagiarism: Plagiarism is the unacknowledged representation of another person's work, or use of their ideas, as one's own. MMU takes care to detect plagiarism, employs plagiarism detection software, and imposes severe penalties, as outlined in the Student Handbook (http://www.mmu.ac.uk/academic/casqe/regulations/docs/policies_regulations.pdf) and Regulations for

Undergraduate Programmes (http://www.mmu.ac.uk/academic/casqe/regulations/assessment.php). Bad referencing or submitting the wrong assignment may still be treated as plagiarism. If in doubt, seek advice from your tutor.

Assessment Criteria:	Indicated in the attached assignment specification.
Formative Feedback:	There will be a number of formative feedback checkpoints throughout the year.
Summative Feedback format:	The feedback sheet for the project is available on Moodle.
Weighting:	This Assignment is weighted at <65%> of the total unit assessment.

See "Assignment - Grading Criteria" document on Moodle for the standard of work expected at each grade.

Help and support can be provided by tutors, or the unit leader (see Moodle page for unit). Additional help and support is provided to all first year students at the time and locations laid out on the Moodle area covering the Computing and Digital Technology Network.

To avoid influencing your preparation for the final in class test, you will not receive your final summative feedback for the unit until after this has taken place.

Information Systems Project

Introduction

This assignment is designed to assess your learning in a number of areas relating to 6G4Z1103 - Information Systems. It's a group project that will continue throughout the whole of the first year during which time you will remain in the same group (so choose your group members wisely). It should prove to be an invaluable learning experience, allowing you to experience the reality of working with others of varying abilities and experience whilst still providing room for you to excel in your learning by engaging fully with all aspects of the project work.

In addition it gives you an opportunity to work on an information systems project without some of the pressures that exist in industry, such as changing requirements, and cost constraints. This will enable you to consider alternative approaches to your analysis, design, and implementation, giving you an opportunity to reflect on your work and, hopefully, learn from what you have done.

Remember that the purpose of this assignment is to provide you with an opportunity for learning, and us with a means of assessing your learning. As such, the aim is not for you to get the system built as quickly as possible, but rather to develop a system in a safe environment that encourages experimentation and learning. You should continually be questioning your approach to the work and trying to find the best way of developing systems through research and experimentation.

Patience

Creating a decent IS even for a small organisation involves a lot of planning and you may not see the point of this at first. Please be patient. Here are some quotes from students (when they were asked what they found good about the unit):

- The excellent group project which gets everyone involved in working as a team and also learning about IS. I cannot stress how enjoyable this unit was working with some great friends.
- The group project, and the fact that it's done for the whole year rather than 1 term, allows time to do it properly and thoroughly.
- The module builds on all key areas that I require in a well-structured manner.
- [I enjoyed] creating the SQL scripts and seeing all that planning come to fruition, and actually being able to see and manipulate my database.

Information Systems Project

Project Summary

The exact details of what is required to complete each part of the project will be released gradually throughout the year to avoid overloading you with information, and to help you to manage your work. In order to give you an idea of where the work is going we have provided a brief summary of much of what the complete project will include below.

- Part 1 - Management Report Writing
    - Deliverable: A report (10% of final unit mark)
    - You will receive summative (formal) feedback for this part of your project including a grade; this report will form the basis for the SQL database reports produced in part 3

- Part 2 - Systems Design: UCD and ERD
    - Deliverable: a report as specified (no mark at this stage)
    - The UCD and ERD will also be submitted and marked formally as part of the final submission
    - Whilst you will be able to change the UCD after this point, the ERD produced here will be the one that is graded in your final submission
    - You will receive formative (informal) feedback relating to improving your ERD which will feed into the creation of your database in part 3

- Part 3 - Systems Design and Implementation: ORACLE Database Creation
    - Deliverable: A report as specified (no mark at this stage)
    - You will receive formative feedback relating to your database and ORACLE queries
    - The data dictionary, and SQL database (based on an improved ERD that you will be guided towards) will be submitted and marked formally as part of the final submission

- Part 4 - Final Submission and Presentation
    - Deliverable: All of the work that you have completed for the project in a report format.
    - **The final report will be worth 45% of your final unit mark.** For the final report the marks will be split as follows: UCM (UCD and use case specifications) 15%, ERD & RDAs (normalisation of two documents) 20%, SQL & DB Queries (including data dictionary) 35%, log book 20%, executive summary, conclusion and commentaries 10%.
    - Each section alluded to above will not just include the above specified diagrams but also further documentation (in diagrammatic and written format). What is required here will be specified in more detail as we progress through the year.
    - Deliverable: A group presentation (10% of final unit mark),
    - You will receive summative (formal) feedback for the presentation and a grade for oral communication skills

Note that all students will be expected to contribute to each part of each assignment. The project is worth 65% of the final unit grade with the remaining 35% coming from two in-class tests.

Important note: As explained above this is a summary. All of the requirements have not yet been outlined. Please see lab sessions/tutors/Moodle for updates regarding assignment hand in requirements.

Information Systems Project

Case Study: Ray's Rentals

Ray's Rentals, situated in a small town in an attractive part of the country, is a large shop which hires out bikes to the many tourists who flock to the area. The shop also sells bikes and cycling accessories, but this project is concerned only with the hire business, including the acquisition, maintenance and disposal of hire bikes.

The shop owns approximately 150 bikes for the purpose of hiring. There is a Bike Record for every bike, an example is shown in appendix A. Ray allocates a unique number to each new bike and enters this on a new Bike Record. The Bike Record contains details of the model and manufacturer, the date that Ray bought the bike, how much he paid for it, and which of three classifications and five sizes the bike belongs to. Each bike is only kept for a couple of years, after which time Ray sells it, usually to one of a handful of local dealers, entering the disposal details on the Bike Record. The Bike Record is then kept for a further two years, because of the warranty which Ray's Rentals gives.

The Bike Record also holds details of the bike's maintenance history. Sometimes a fault is noticed and corrective action taken. Other times, without a fault being noticed, a standard service is carried out on the bike. This includes things like a general strip-down and rebuild, with new tyres fitted, full lubrication of all moving parts, new brake blocks and cables fitted, etc.

The other key document in Rays Rentals is the Rental Record. Each bike has its own Rental Record, an example is shown in appendix B. This usually takes up several sheets of paper, which are pinned together. Everything on the Rental Record is entered by hand. This includes the date and times, customer details and amount paid for a hiring (determined by the period of hire: half day or full day).

The way the manual system currently works is as follows:

Customers enquire about hiring one or more bikes by either calling in, in person, or phoning, or writing. The Hirings Department, headed by Ray's Deputy Manager, Pete, deals with enquiries. If it is a case that someone has called in, and wants to take away some bike(s) there and then, the transaction details are entered on the Rental Record(s) for the bike(s) being hired. Sometimes a visitor just wants information about bike hiring, in which case Hirings Department staff jot down a few hand-written notes on an odd piece of paper and hand them to him or her.

If someone phones in, it is usually to make a general enquiry – in which case Ray's Rentals can give the necessary information over the phone - or it is to reserve one or more bikes. Details of the requested reservation are jotted down on a piece of paper, along with the caller's name and phone number. Once they have checked the Rental Records to see if there will be the right number of the right classification and size of bike available for hire when the customer wants them, the Hiring Department phone back to inform the customer.

For a reservation, the details are entered on the Rental Record as much as possible (typically Rent Date, Customer Name, Customer Address, Post Code, Phone Number, Bike Class, and Size), and the rest of the data is entered when the hiring actually happens and/or when payment is received and/or when the bike is returned to the Hirings Department.

One problem is that the reservation might be taken several days or weeks in advance of the actual hiring, and because the reservation is entered on the next available line on the Rental Record, there is always the possibility that the reservation gets "lost" among all the other reservations and hirings. This has caused embarrassment several times in the past, because sometimes bikes that had been reserved for someone were allowed to go out on hire, or were reserved by other customers for the same day.

If the customer has written in, it is usually to make a general enquiry, in which case the Hirings Department puts a copy of the "sample prices of bike hires" list in an envelope and posts it back to the enquirer (the rental rates are determined by the classification and size). Unfortunately, the list is occasionally out of date or inaccurate in some other way but copies of a new one have not yet been received from the printer. In these cases either Pete's assistant, Sheila, or (usually) the Commercial Modern Apprentice, Megan, has to make hand-written corrections on the original before posting it off.

Ray believes that too much potential business is being lost through the, sometimes haphazard, way in which enquiries are dealt with, and through failure to follow up customers who have expressed an interest in possible bike hire. Fortunately, a lot of the customers are loyal and hire bikes time after time.

When customers make payment for a hiring, a hand-written receipt is given (or posted, for those customers who send a cheque through the post in advance).

When the hire period is complete, and the bike is returned, the rental sheet is updated with the actual time back.

Each Friday, Ray inspects Bike Records to identify which bikes have not been serviced for a month, and draws up a hand-written list of them. He gives this to Alf and Bert, the two Technicians, and they work through the list the following week. It's easy for Ray to fail to spot when a bike is due for service, partly because the handwriting on the Maintenance History part of the Bike Record can be appalling. When Alf and Bert have serviced a bike, they update the Maintenance History. They also receive information from the Hirings Department about bike faults that have been reported by customers when collecting or returning bikes, and for which repairs are needed. Again, when the work has been carried out, Alf and Bert update the Maintenance History. There's no real system of prioritising all this "service" and "repair" work, so that sometimes bikes which are in heavy demand are off the road awaiting work on them, while some other machines, which have been worked on and are available for hire, are very rarely hired.

Another problem with the repair and service side of the business is the alarming frequency with which the necessary spare part is not in stock. This can lead to bikes being off the road for weeks. On the other hand, some parts are over-ordered, and some of them are left lying around in the workshop for so long that they either go rusty or become obsolete. There's no real check that ordered parts are delivered, or that delivered parts have been ordered. Copies of parts orders and delivery notes are kept in a filing cabinet – but just in a pile and only if someone remembers to put them away. Ordering and receiving parts from suppliers is the job of Paul, the Parts Manager. A particular part can always be obtained from the original manufacturer of the bike, and maybe from one (and only one) of several other trusted suppliers.

Appendix A – Bike Record

Ray's Rentals – Bike Record

Bike Number:	*36283*	Manufacturer:	*Superbike*
Model:	*Explorer*	address:	*Buxton Road Sheffield*
Purchase: date	*30 Jan 07*	postcode	*S10 1AB*
price	*£350.00*	telephone	*0114 369 1476*
Classification:		Disposal Details:	
mountain	☑	sale date:	*15 Mar 09*
road	☐	dealer name:	*Joe's Junk*
tandem	☐	- address	*15 Back Lane Buxton*
Size:			
large male	☐	- telephone	*0736 553422*
standard male:	☑	sale price	*£45.00*
small male:	☐		
standard female:	☐		
child:	☐		

Maintenance History

ref no	fault details	fault date	action taken	action date
1	*Puncture - rear*	*15feb07*	*New Inner Tube*	*16feb07*
2	*Chain keeps breaking*	*10jul07*	*Fit new Chain*	*27aug07*
3			*Normal Service*	*15dec07*
4			*Normal Service*	*20jan09*
5	*Split Saddle*	*02feb09*	*Fit new Saddle*	*27feb09*

Appendix B – Rental Record

Ray's Rentals – Rental Record

Bike Number: *36283*

Bike: *Superbike Explorer* Type: *Mountain* Size: *Standard Male*

Rent	Time	Time Back:		Customer:				Amount
Date	Out	Due	Actual	Name		Postcode	Tel	Paid
02feb07	*09:30*	*12:30*	*14:30*	*John Terry*	*54 Posh Row, Chelsea*	*SE10 1NH*	*020177222*	*£16.50*
17apr07	*12:00*	*18:00*	*16:30*	*Michael Owen*	*21 Boss Street, Newcastle*	*N1 1XY*	*015432641*	*£12.00*