2011 I.T Applications - SAC 3

Outcome 1 - Task 1 (60 marks) An RDBMS and onscreen documentation.

On completion of this unit the student should be able to use selected software to solve an ongoing information problem, and evaluate the efficiency and effectiveness of the solution in meeting the information needs of an organisation.

**Scenario –Al’s Androids**

Al’s Androids is a thriving new business specialising in selling and hiring robots of all kinds. It originally started off as a way for Al to save time doing household chores by creating an android that could do all the work for him. Soon all his friends wanted one too and he realised this could take off as a big business. Since androids are quite expensive to construct he’s hiring them out rather than directly selling them. He’s hoping to corner the entire local market and have his androids used by everyone in Melbourne. And then he will take over the world market too.

However, there have been problems. All of his efforts have been directed into making the best possible robots but his bookkeeping is a mess. His chief sales manager Mr Luddite has been recording all android hires into a system of carefully indexed filing cards. This worked well when he only had a couple of androids but now there have been problems. Sometimes Mr Luddite misplaces a card and double books one of the androids. Needless to say the customers are unhappy if this happens. This is a big worry for Al especially as unhappy customers tend to go to his chief competitor – Roneel’s Robots.

Al has hired you to create a new information system as quickly as possible. He’s giving you two weeks to complete it since that will be when he launches his new marketing campaign and a new line of androids. In your discussions with Al it has become clear that Mr Luddite is a brilliant salesman but finds computers very confusing so he has requested that you create clear and easy to understand instructions for him to use your solution. Your solution needs to keep track of all the android hires. Al needs to be able to generate reports of all hires over the last month grouped by android, find out which androids are hired out at any time, generate lists of customers and find out the hire history of any given android. He has given you the following information from some recent android hires to help you decide how to structure your database.

Notes:

* You have nine periods to complete this SAC. You will not be allowed to take the task out of the room, or work on it at any other time apart from class time.
	+ The first double period will be the analysis and design stage – no notes or book.
	+ The next seven periods will be to create the database, documentation, do the testing and evaluate your solution – open book.
* All electronic files must be stored in your individual SAC folder on the network.

Recent hires as recorded by Mr Luddite.

| **Name** | **Address** | **Email** | **Phone** | **Android hired** | **Model** | **Dates** | **Cost** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Laura Gocher | 44 Sullivan Court, JIL JIL, VIC, 3483 | LauraGocher@mailinator.com | (03) 5364 1468 | R2D2 | Construction | 11/03/11 - 14/03/11 | 3 \* 400 = 1200 |
| Emily Abercrombie | 1 Fairview Street, LESLIE MANOR, VIC, 3260 | EmilyAbercrombie@dodgit.com | (03) 5335 8504 | JA34 | Cleaning | 11/03/11 - 12/03/11 | 1 \* 200 = 200 |
| Hamish Gopinko | 72 Frouds Road, NUNNIONG, VIC, 3896 | HamishGopinko@spambob.com | (03) 5350 7712 | AD23 | Organising | 11/03/11 - 12/03/11 | 1 \* 300 = 300 |
| ZacLeworthy | 11 Bailey Street, WILLATOOK, VIC, 3283 | ZacLeworthy@mailinator.com | (03) 5305 9931 | KB76 | Cooking | 11/03/11 - 12/03/11 | 1 \* 400 = 400 |
| Austin Boothby | 23 McLachlan Street, PIMPINIO, VIC, 3401 | AustinBoothby@trashymail.com | (03) 5355 5595 | DH65 | Gardening | 14/03/11 - 15/03/11 | 1 \* 200 = 200 |
| Hamish Gopinko | 72 Frouds Road, NUNNIONG, VIC, 3896 | HamishGopinko@spambob.com | (03) 5350 7712 | JA34 | Cleaning | 14/03/11 - 15/03/11 | 1 \* 200 = 200 |
| Joel Lamington | 16 Bourke Crescent, CANNUM, VIC, 3393 | JoelLamington@dodgit.com | (03) 5314 8408 | KB76 | Cooking | 14/03/11 - 15/03/11 | 1 \* 400 = 400 |
| Hamish Gopinko | 72 Frouds Road, NUNNIONG, VIC, 3896 | HamishGopinko@spambob.com | (03) 5350 7712 | AK21 | Cleaning | 14/03/11 - 17/03/11 | 3 \* 200 = 600 |
| Emily Abercrombie | 1 Fairview Street, LESLIE MANOR, VIC, 3260 | EmilyAbercrombie@dodgit.com | (03) 5335 8504 | AP23 | Construction | 14/03/11 - 16/03/11 | 2 \* 400 = 800 |
| Cody Bedford | 59 Edmundsons Road, MILLBROOK, VIC, 3352 | CodyBedford@mailinator.com | (03) 5337 6396 | MC76 | Cleaning | 15/03/11 - 18/03/11 | 3 \* 200 = 600 |
| Andrew Ogilby | 98 Inglewood Court, SPRING HILL, VIC, 3444 | AndrewOgilby@trashymail.com | (03) 5338 5504 | AD23 | Organising | 15/03/11 - 20/03/11 | 5 \* 300 = 1500 |
| Gabriel Reilly | 90 McKillop Street, TRAWALLA, VIC, 3373 | GabrielReilly@spambob.com | (03) 5343 0298 | AN34 | Cooking | 15/03/11 - 16/03/11 | 1 \* 400 = 400 |
| Laura Gocher | 44 Sullivan Court, JIL JIL, VIC, 3483 | LauraGocher@mailinator.com | (03) 5364 1468 | JP97 | Gardening | 15/03/11 - 16/03/11 | 1 \* 200 = 200 |
| Hamish Gopinko | 72 Frouds Road, NUNNIONG, VIC, 3896 | HamishGopinko@spambob.com | (03) 5350 7712 | NC23 | Cleaning | 15/03/11 - 16/03/11 | 1 \* 200 = 200 |
| Edward Dadson | 15 Frouds Road, BUMBERRAH, VIC, 3902 | EdwardDadson@pookmail.com | (03) 5353 9793 | DH65 | Gardening | 16/03/11 - 20/03/11 | 4 \* 200 = 800 |
| Austin Boothby | 23 McLachlan Street, PIMPINIO, VIC, 3401 | AustinBoothby@trashymail.com | (03) 5355 5595 | LN72 | Cleaning | 16/03/11 - 18/03/11 | 2 \* 200 = 400 |
| Austin Boothby | 23 McLachlan Street, PIMPINIO, VIC, 3401 | AustinBoothby@trashymail.com | (03) 5355 5595 | RP93 | Cleaning | 16/03/11 - 17/03/11 | 1 \* 200 = 200 |
| Anthony Chevalier | 14 Acheron Road, BUNDALAGUAH, VIC, 3851 | AnthonyChevalier@mailinator.com | (03) 5359 0585 | MC34 | Organising | 16/03/11 - 17/03/11 | 1 \* 300 = 300 |
| Sebastian Bracker | 19 Carlisle Street, RUFFY, VIC, 3666 | SebastianBracker@spambob.com | (03) 5362 3566 | JA34 | Cleaning | 16/03/11 - 26/04/11 | 40 \* 200 = 8000 |

There are 5 models of androids as listed below.

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| **Model** | **Rate** |
| Cleaning | $200.00 per day |
| Construction | $400.00 per day |
| Cooking  | $250.00 per day |
| Gardening | $200.00 per day |
| Organising | $300.00 per day |

**NOTE:**

The above tables are also provided in an excel file for your convenience.

## NOTE: Parts One and Two are time limited and must be completed during the first double period.

## Part One: Analysis.

1. What is the goal of Al’s Androids?

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(1 Mark)

1. What is the goal of the new sales system?

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(1 Mark)

1. What are the problems with the old sales system?

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(2 Marks)

1. What are the solution requirements that Al wants?

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(2 Marks)

1. What are the constraints on your new solution?

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(2 Marks)

1. Explain the scope of your solution. What will it do and what is it not expected to do?

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(2 Marks)

## Part Two: Design.

### Evaluation criteria



1. List four evaluation criteria under the following categories.

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| Database effectiveness |  |
| Database efficiency |  |
| On-screen documentation effectiveness |  |
| On-screen documentation efficincy |  |

### Design database

Use the following space to complete your design of the database. You must use two tools. One of them must demonstrate the relationships used within your database and the other must describe the appearance of a report or query. Some possible tools are:

* Entity Relationship diagrams
* Data structure tables
* Data structure diagrams
* Layout diagrams
* Query design
* IPO Charts
* Flowcharts

### Design onscreen user documentation

Use the following space to design the layout of the onscreen user documentation.

## Part Three: Develop

### Create your solution.

Develop your solution using MSAccess. Your solution should demonstrate most of the following list of skills

* create tables
* create relationships between tables
* use a range of data types
* electronic validation
* create, edit and use queries
* use of calculated fields
* sort records or index on different fields
* import/export of data
* format data for display
* create and edit a range of forms, including different data types and controls
* create and edit a range of formatted reports.

### Test your solution – Include tests for your database AND your onscreen documentation

| **Description of test** | **Test data to be used** | **Expected results of the test** | **Actual results of the test** | **Are there errors to correct?** |
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### Create your onscreen documentation

Develop your onscreen documentation using Microsoft Word. Remember to include screenshots for clarity.

**Note**: You only need to create one instruction not the complete manual. This is just to demonstrate your proficiency in this area.

## Part Four: Evaluation.

1. Evaluate your database and your user documentation, based on the criteria you chose. Print out relevant forms/reports and annotate them with your evaluation.
2. Propose strategies you could use to evaluate your solution and user documentation in more detail. (eg interviews, surveys, user testing). Describe these strategies in detail. For example, if you are using surveys or interviews list the questions that you will ask.

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## U4OC1: Marking Scheme. I.T. Applications /60 Marks

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| --- | --- | --- |
| **Criterion** | **Marks** | **Comments** |
| Analysis | /10 |  |
| Design tool 1 | /4 |  |
| Design tool 2 | /4 |  |
| Design documentation | /3 |  |
| Develop Database |  |  |
| * Relationships
 | /2 |  |
| * Table design (fields, naming conventions, data types and keys)
 | /4 |  |
| * Sample data
 | /2 |  |
| * Validation
 | /3 |  |
| * Queries
 | /2 |  |
| * Forms
 | /2 |  |
| * Reports
 | /2 |  |
| Develop Documentation* Clear easy to follow instructions.
 | /3 |  |
| Develop – Testing | /5 |  |
| Evaluation criteria | /4 |  |
| Evaluation |  |  |
| * Annotated printouts
 | /6 |  |
| * Strategy for evaluation
 | /4 |  |
|  |  |  |
| **TOTAL** | /60 |  |