Sample SAC

Outcome 1 - Task 1 (50 marks) Databases – Data acquired from websites.

On completion of this unit the student should be able to design, and develop using a relational database management system (RDBMS), a solution to an information problem, and discuss why and how data is acquired via websites.

**Scenario – Book Lore**

Book Lore is a small bookstore in Coburg. They have recently decided to open an online bookstore and have employed a web design company to create the website. You have been employed by the web design company to create a RDBMS to store the order information. They have included some samples of the information currently kept in store so you can choose how to design the database.

Their customer data is sometimes incomplete or missing sections. They want the new RDBMS to reduce these errors by using validation.

They also need you to create queries to display:

* A list of all customers sorted alphabetically by suburb.
* A list of all customers who have ever ordered books. This must include their name, product ordered, quantity, cost and overall total cost.
* A list of all customers who owe money. This must include what they owe it for and how much.
* A list of all books sorted by author’s name.
* A list of all books that have been paid for but not delivered. This must be sorted by suburb so they can group up the deliveries.
* A list of all customers who owe money for orders that have been delivered and are older than 30 days.

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 design stage – no notes or book.
  + The next five periods will be to create the database – open book.
  + The final double period will be a test – no notes or book.
* All electronic files must be stored in your individual SAC folder on the network.

Sample Data

**Note**: This data is also provided in electronic form if you wish to manipulate it into the tables you need for your database and then import it.

## Customer information

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Postal Address** | **Email Address** | **Phone** |
| Rachel Summers | 1 Chatsworth Drive, WELSHPOOL, WA, 6106 | RachelSummers@spambob.com | (08) 9389 5907 |
| Samantha Sconce | 59 Warren Avenue, BELMONT SOUTH, NSW, 2280 |  | (02) 4957 5087 |
| Mariam Mungomery | 80 Myrtle Street, WHITFIELD, VIC, 3733 | MariamMungomery@trashymail.com | (03) 5395 0758 |
| Matilda Kingsbury | 99 Springhill Bottom Road, STAVERTON, TAS, 7306 | MatildaKingsbury@trashymail.com | (03) 6226 9306 |
| John Whitton | 83 Buoro Street, BALL BAY, QLD, 4741 | JohnWhitton@pookmail.com | (07) a926 0198 |
| Gabriella Findlay | 99 Boughtman Street, CARNEGIE, VIC, 3163 | GabriellaFindlay@pookmail.com | (03) 9252 6890 |
|  | 21 Nerrigundah Drive, QUEENSFERRY, VIC, 3984 | OliviaBavin@trashymail.com | (03) 5314 9416 |
| Evie Hailes | 12 Nerrigundah Drive, MONOMEITH, VIC, 3984 | EvieHailes@trashymail.com |  |
| Thomas Glasheen | 46 South Molle Boulevard, WILLS, QLD, 4829 | ThomasGlasheen@dodgit.com | (07) 4545 9427 |
| Tristan Dadswell | 5 Dossiter Street, CAIRNS BAY, TAS, 7116 | TristanDadswell@mailinator.com | (03) 6228 5787 |
| Alex Daws | 25 Raglan Street, MOFFATDALE, QLD, 4605 | AlexDaws@example.com | (07) a566 3804 |
| Lucas Lampungmeiua | 62 Frencham Street, SPLITTERS CREEK, NSW, 2640 | LucasLampungmeiua@trashymail.com | (02) 6130 1614 |
| Jack Brooker | 13 Round Drive, BALMORAL, NSW, 2283 | JackBrooker@trashymail.com | (02) 4900 6754 |
| Layla Angel | 51 Loris Way, BROOKTON, WA, 6306 | LaylaAngel@spambob.com | (08) 9035 5960 |
| Harry Grishin | 89 George Street, BIRDSVILLE, QLD, 4482 | HarryGrishin@mailinator.com | (07) 4517 6373 |
| Olivia Girdlestone | 66 Banksia Court, COLUMBIA, QLD, 4820 | OliviaGirdlestone@pookmail.com | (07) 4019 5938 |
| Aiden Goodwin | 53 Porana Place, MAYA, WA, 6614 | AidenGoodwin@pookmail.com | (08) 9055 8267 |
| Harrison Abercrombie | 58 Grayson Street, TARADALE, NSW, 2653 | HarrisonAbercrombie@dodgit.com | (02) 6153 7580 |
| Kaitlyn Harding | 3 Main Street, SANDALWOOD, SA, 5309 | KaitlynHarding@mailinator.com | (08) 8268 5453 |
| Alannah Soundy | 91 Boland Drive, PEARCES CREEK, NSW, 2477 | AlannahSoundy@trashymail.com | (02) 6708 9002 |
| Alex Daws | 46 Nerrigundah Drive, BAYLES, VIC, 3981 | AlexDaws@spambob.com | (03) 9971 7780 |
| Isabel McCabe | 66 Boobialla Street, FAITHFULL, NSW, 2700 | IsabelMcCabe@pookmail.com | (02) 6108 3206 |

## Products

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| **Title** | **Author** | **Price** |
| Room | Emma Donoghue | 12.81 |
| The 17 Day Diet | Mike Moreno | 14.81 |
| Jamie's 30-minute Meals | Jamie Oliver | 35.24 |
| The Dukan Diet | Pierre Dukan | 9.81 |
| Water for Elephants | Sara Gruen | 12.81 |
| Madeleine | Kate McCann | 25.61 |
| The Redeemer | Jo Nesbo | 11.2 |
| The Wonky Donkey | Craig Smith | 5.86 |
| The Help | Kathryn Stockett | 12.81 |
| One Day | David Nicholls | 12.81 |
| The Elegance of the Hedgehog | Muriel Barbery | 12.81 |
| Bloody Valentine | James Patterson | 3.22 |
| The Book Thief | Markus Zusak | 9.88 |

## Orders

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| **Name** | **Date** | **Book** | **Quantity** | **Cost** |
| Olivia Bavin | 12/05/2011 | The Help | 1 | 12.81 |
| Jack Brooker | 17/05/2011 | The Dukan Diet | 2 | 19.62 |
| Alex Daws | 17/05/2011 | The 17 Day Diet | 1 | 14.81 |
| Evie Hailes | 15/05/2011 | Madeleine | 2 | 51.22 |
| Harrison Abercrombie | 9/05/2011 | Water for Elephants | 1 | 12.81 |
| Alex Daws | 23/05/2015 | The Wonky Donkey | 6 | 35.16 |
| Rachel Summer | 27/05/2011 | The Elegance of the Hedgehog | 2 | 25.62 |
| Mariam Mungomery | 1/05/2011 | Bloody Valentine | 3 | 9.66 |
| Jack Brooker | 7/05/2011 | The Redeemer | 0 | -11.2 |
| Lucas Lampungmeiua | 24/05/2011 | Jamie's 30-minute Meals | 1 | 35.24 |
| Olivia Bavin | 21/05/2011 | The Book Thief | 5 | 49.4 |
| Jack Brooker | 20/05/2011 | Water for Elephants | 1 | 12.81 |
| Harrison Abercrombie | 20/05/2011 | The Book Thief | 1 | 49.4 |

## Part One: Design.



### Time Limited: 2 periods

Use the space/forms below to complete your design and then get it signed off before commencing development.

* Entity Relationship Diagram
* Data Structure tables
* Data Structure Diagram
* Test Data

## Design – Entity Relationship Diagram

Draw your entity relationship diagram below

## Design – Data structure table

Fill in a data structure table for each table in your database. The number of tables you need to fill in will depend upon your design. If your design only has three then only fill in three.

**Table \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:**

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## Design – Data structure diagram

## Design – Test data

You must include tests for validation, accuracy of queries and accuracy of any calculated fields.

| **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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| **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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## Part Two: Develop.

### Time Limited: 5 periods

Develop your solution. The technical skills you need to demonstrate are:

* 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

**Remember:** You do **not** need to use forms or reports for this SAC.

## Part Three: Test

The final double period will be a test. The focus of the test will be:

* Discuss why and how data is acquired via websites. The following resources will help you:
  + - Book reference pp 88-97
    - Practice questions 1-5 on page 122
    - Revision questions in powerpoint presentation.

## U3O*2* Marking Scheme (IT Applications) /(50 marks)

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| --- | --- | --- |
|  | Allocated Marks | Comments |
| **Criterion 1: Design** | **12 marks** | |
| 1. Entity Relationship Diagrams | /3 |  |
| 1. Data structure tables | /5 |  |
| 1. Data structure diagram | /2 |  |
| 1. Test data | /2 |  |
| **Criterion 2: Develop** | **28 marks** | |
| 1. Table creation. Use of appropriate naming conventions for fields and tables. Appropriate primary key selction. | /3 |  |
| 1. Sample data entry for appropriate testing. | /2 |  |
| 1. Relationships between tables. | /2 |  |
| 1. Data types. Use of a range of data types and appropriate choices made regarding data type and size of field. | /4 |  |
| 1. Electronic validation. | /4 |  |
| 1. Queries. Appropriate filtering and sorting. | /7 |  |
| 1. Use of calculated fields. | /2 |  |
| 1. Testing | /4 |  |
| **Criterion 3: Test** | **10 marks** | |
| 1. Test result | /10 |  |