(i) ReadMore Community Library Catalogue Search Output:

Sample A:

Call No:	005.74 C822D 2023
Title:	Database systems : design, implementation, and management
Authors	• **ID:** 2036 **Name:** Coronel, Carlos • **ID:** 4809 **Name:** Morris, Steven
Subjects:	• **ID:** 1045 **Description:** Database design • **ID:** 1044 **Description:** Database management • **ID:** 1040 **Description:** Databases
Contents:	Part I: Database Concepts-- 1. Database Systems -- 2. Data Models -- Part II: Design Concepts-- 3. The Relational Database Model -- 4. Entity Relationship (ER) Modeling -- 5. Advanced Data Modeling -- 6. Normalization of Database Tables -- Part III: Advanced Design and Implementation -- 7. Introduction to Structured Query Language (SQL) -- 8. Advanced SQL -- 9. Database Design -- Part IV: Advanced Database Concepts -- 10. Transaction Management and Concurrency Control -- 11. Database Performance Tuning and Query Optimization -- 12. Distributed Database Management Systems -- 13. Business Intelligence and Data Warehouses -- 14. Big Data Analytics and NoSQL -- Part V: Databases and the Internet -- 15. Database Connectivity and Web Technologies -- Part VI: Database Administration -- 16. Database Administration and Security.
Publisher:	**ID:** 1230 **Name:** Cengage Learning
Date Published:	2023
Edition	14th Edition
No pages:	816
Language:	English
Note:	Includes bibliographical references and index.
Identifiers:	• **ISBN:** 9780357673034 **Type:** Hardcover • **ISBN:** 9780357673072 **Type:** Loose Leaf

UNF: ✗   PKs are not marked in UNF

CATALOGUE (ctlg_call_no, ctlg_title, ctlg_description, publisher_id, publisher_name, ctlg_publication_year, ctlg_edition, ctlg_no_of_pages, ctlg_lang, ctlg_note

(isbn_no, isbn_book_type), (author_ id,author_fname, author_lname), (subject_id, subject_desc))

1NF:

CATALOGUE (ctlg_call_no, ctlg_title, ctlg_description, publisher_id, publisher_name, ctlg_publication_year, ctlg_edition, ctlg_no_of_pages, ctlg_lang, ctlg_note)

CK: ctlg_call_no

ISBN(isbn_no, isbn_book_type, ctlg_call_no)

CK: isbn_no

CAT_AUTHOR(author_id, ctlg_call_no, author_fname, author_lname)

CK: author_id, ctlg_call_no

CAT_SUBJECT(subject_id, ctlg_call_no, subject_desc)

CK: subject_id, ctlg_call_no

Partial Dependency:

author_id -> author_fname, author_lname

subject_id -> subject_desc

2NF:

CATALOGUE (ctlg_call_no, ctlg_title, ctlg_description, publisher_id, publisher_name, ctlg_publication_year, ctlg_edition, ctlg_no_of_pages, ctlg_lang, ctlg_note)

ISBN(isbn_no, isbn_book_type, ctlg_call_no)

CAT_AUTHOR(author_id, ctlg_call_no)

AUTHOR(author_id, author_fname, author_lname)

CAT_SUBJECT(subject_id, ctlg_call_no)

SUBJECT(subject_id, subject_desc)

Transitive Dependency:

publisher_id -> publisher_name

3NF:

CATALOGUE (ctlg_call_no, ctlg_title, ctlg_description, publisher_id, ctlg_publication_year, ctlg_edition, ctlg_no_of_pages, ctlg_lang, ctlg_note)

PUBLISHER(publisher_id, publisher_name)

ISBN(isbn_no, isbn_book_type, ctlg_call_no)

CAT_AUTHOR(author_id, ctlg_call_no)

AUTHOR(author_id, author_fname, author_lname)

CAT_SUBJECT(subject_id, ctlg_call_no)

SUBJECT(subject_id, subject_desc)

Full Dependency:

ctlg_call_no -> ctlg_title, ctlg_description, publisher_id, ctlg_publication_year, ctlg_edition, ctlg_no_of_pages, ctlg_lang, ctlg_note

publisher_id -> publisher_name

isbn_no -> isbn_book_type, ctlg_call_no

author_id -> author_fname, author_lname

subject_id -> subject_desc

(ii) ReadMore Community Library Borrowers Quarterly Report:

QUARTERLY BORROWER LOAN REPORT

Borrower No	1234		**Report Date:**	30 Jun 2024
Borrower				
First Name:	Mary			
Last Name:	Greenwood			
Borrower Class	Adult			
Borrowing Status	Permitted ☐			
	Banned ☑			

Branch Code	Book Copy ID	Branch Name	Borrowed	Due Back	Returned	Fine Amnt	Date Fine Paid
100	2373	Clayton Central	02 Apr 2024 09:10	09 Apr 2024	07 Apr 2024 09:15		
100	4455	Clayton Central	15 Apr 2024 14:00	18 Apr 2024	20 Apr 2024 12:34	$4	20 Apr 2024
100	4901	Clayton Central	28 Apr 2024 10:00	4 May 2024	4 May 2024 10:21		
100	4455	Clayton Central	28 Apr 2024 11:10	4 May 2024	4 May 2024 11:06		
100	4216	Clayton Central	28 Apr 2024 10:15	4 May 2024	4 May 2024 10.09		
100	7536	Clayton Central	4 May 2024 10:00	11 May 2024	11 May 2024 10:20		
100	2373	Clayton Central	4 May 2024 12:30	11 May 2024	11 May 2024 09:10		
102	0372	West Riding	11 May 2024 13:00	18 May 2024	11 May 2024 09:16		
102	4455	West Riding	11 May 2024 13:05	18 May 2024	18 May 2024 12:15		
... multiple rows omitted ...							
100	0876	Clayton Central	15 Jun 2024 13:15	16 Jun 2024	16 Jun 2024 16:10		
102	2354	West Riding	20 Jun 2024 16:00	27 Jun 2024			

Note overdue loans are flagged in this report with:

UNF:

BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status, (branch_code, book_copy_id, branch_name, loan_borrow_datetime, loan_due_date, loan_returndatetime, fine_amnt, fine_paiddate))

1NF:

BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status)

CK: borrower_no

LOAN(branch_code, book_copy_id, loan_borrow_datetime, branch_name, loan_due_date, loan_returndatetime, fine_amnt, fine_paiddate, borrower_no)

CK: branch_code, book_copy_id, loan_borrow_datetime

Partial Dependency:

branch_code -> branch_name

2NF:

BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status)

LOAN(branch_code, book_copy_id, loan_borrow_datetime, loan_due_date, loan_returndatetime, fine_amnt, fine_paiddate, borrower_no)

BRANCH(branch_code, branch_name)

Transitive Dependency:

No transtive dependencies present.

3NF:

BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status)

LOAN(branch_code, book_copy_id, loan_borrow_datetime, loan_due_date, loan_returndatetime, fine_amnt, fine_paiddate, borrower_no)

BRANCH(branch_code, branch_name)

Full Dependencies:

borrower_no -> borrower_fname, borrower_lname, borrower_class, borrower_status

branch_code, book_copy_id, loan_borrow_datetime -> loan_due_date, loan_returndatetime, fine_amnt, fine_paiddate, borrower_no

branch_code -> branch_name

Attribute Synthesis:

✓

There are no identical relations

FINAL 3NF RELATIONS:

CATALOGUE (ctlg_call_no, ctlg_title, ctlg_description, publisher_id, ctlg_publication_year, ctlg_edition, ctlg_no_of_pages, ctlg_lang, ctlg_note)

PUBLISHER(publisher_id, publisher_name)

ISBN(isbn_no, isbn_book_type, ctlg_call_no)

CAT_AUTHOR(author_ id, ctlg_call_no)

AUTHOR(author_id, author_fname, author_lname)

CAT_SUBJECT(subject_id, ctlg_call_no)

SUBJECT(subject_id, subject_desc)

BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status)

LOAN(branch_code, book_copy_id, loan_borrow_datetime, loan_due_date, loan_returndatetime, fine_amnt, fine_paiddate, borrower_no)

attribute name is different in the Logical

BRANCH(branch_code, branch_name)

✓