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Student Name: Girija Tamang

London Met ID: 18030995

College ID:NP05CP4S190007

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I confirm that I understand my coursework needs to be submitted online via Local Server under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a marks of zero will be awarded.

Proposal

This is the project which is related about the database of bookstore management system. This project describes why the bookstore needs information about books, author and customer information to be collected and managed. The management system of the bookstore is used to analyze shop data, client data and generate reports, where necessary. The main purpose of database is to store large amount of data related to bookstore in database system and helps user to easily store, edit and delete data any time he/she wants.

Problem Statement

Due to rapid growth of technology, every day different kinds of books with different category are published. Because of poor database management system, we are facing problem like storing data and information of many books with variety of types, losing of data, poor security on data and editing and storing of data consume more time.

Projects Aims

The main aim of this project is to create a best database which not only solves the problems of organizations but also reduces in price and time consumption.

Other objectives are:

1. To remove duplication
2. High security on data
3. Normalization of data

Proposed Approach

This main theme of this project is to develop a database for a bookstore. This will help to keep records of books with different types, easy to handle and use, used to store data for future store with high security. This database that we are proposing also can be edited and updated and performs in short period of time and also have backup system that can be use according to the condition and requirement made by time.

Target audience

This database system target to provide best way of data storing and managing for any bookstore with easy data edit and update, retrieve, delete, insert.

Activities Involved and Time Scale

The activities which are done while doing this project are:

1. Research: I have done lots of research from different books and websites for starting this project.
2. Coding: Coding is the second thing that I had done for preparing this project. I create table and insert data in XAMPP.
3. Testing: Testing is the hardest part of this coursework which I have done in shell for preparing database without extra care and time.
4. Report Writing: This is the easiest part of this coursework where I have written the description of the database management system after doing researches and coding.

Timescale:

week	work
17	Done research
18	Coding and proposal
19	Introduction ER diagram, data dictionary
20	Testing and conclusion

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INTRODUCTION

The database collects structured data to make it easy to access, manage and update. It contains the data dictionary, a file in which other data information is stored. In general, the database is divided into application areas. The schema, table, queries, reports and other subjects are collected. The database concept starts by considering the data that could be supplied instead of the data needs for a specific application. Database is a program in which information can be readily stored and users can together use several information (Guptha & Guptha, 2012).

The DBMS is a software package designed for defining the data in a database, manipulating it, collecting it and managing it. The information itself, information format, field names, recording structure and file structure are usually manipulated by a DBMS. It also defines rules for validating and manipulating this information. A DBMS alleviates users of data maintenance framing programs. The DBML package is used to interact with a database in fourth generation query languages, such as SQL (Kahate, 2004).

In this era of technology, most of the organizations, companies and many more departments keep their valuable data and important information in a computer and to manages and keep such data and information safe they need a good data management system. Without the proper managed data and information any company and organization cannot work properly, and they may face various problems. because of database management system, we can fix and avoid many problems like loss of data, unmanaged information and data and lack of data security. Database managements systems helps us to store huge amount of data, we can manage or change data whenever we like and also we can add or delete data .with the help of DBMS we can reduce data redundancy ,we can get data and information in short period of time (Ahlawat, 2010).

I have chosen to create database of" bookstore management store" which contains 5 tables and that tables contains the information of bookstore. This project theme is to help for maintaining book records of distinct kinds and is simple to process and use .we can easily add or remove data ,we can also reduce duplication of book data and we can get information about the book, book author, book type and about the book store easily

whenever we want. With the help of this database the store owner of this database do not have to face problem like storing data and information of many books with variety of types, losing of data, poor security on data and editing and storing of data consume more time. This database which not only solves the problems of organizations but also reduces in price and time consumption.

Discussion and Analysis

The database is a significant model which we use in our day to day lives. we must create any types of database system for any organization or company. so I had decided to create database on bookstore. Creating a database on bookstore is very challenging task. In the beginning I did a lot of research from different websites and modules slides too. It helped me a lot after that I started to make rough design and develop the program accordingly. For creating main database, I had to use different tools such as XAMPP, word, snippeting tools and soon. While creating main database I had face different problem like normalization, understanding foreign key etc. To tackle this problem, I visited my tutor and mention problems and concerns and took help from friends. It was an excellent experience working on this coursework. The following tools helped me to complete my work.

XAMPP

XAMPP is an AMP stack that allows you and other helpful software to install Apache, MySQL and PHP on your desktop. This is a straightforward, lightweight Apache distribution that makes building a local webserver for testing and deployment incredibly simple for developers. It has been intended so that you can easily install. It is free for all Windows, Mac OS and Linux applications.



Figure 1 :XAMPP

MS-Word

Microsoft Word (or simply Word) is a word processor developed by Microsoft. Word contains rudimentary desktop publishing capabilities and is the most widely used word processing program on the market. Word files are commonly used as the format for sending text documents via e-mail because almost every user with a computer can read a Word document by using the Word application.



Figure 2:MS-WORD

Snipping Tool

Snipping Tool is a screenshot utility of Microsoft Windows included in and after Windows Vista. Still screenshots of open windows, rectangular regions, an open area or the whole display can be taken. You can then annotate snips using the mouse, tablet, image file, or MHTML file, or email them.



Figure 3:SNIPPING TOOL

Data Module

In order to introduce abstraction in a DBMS, data models are fundamental entities. Data models describes how information is linked and handed and store within the scheme. Data model describe how a database has logical structure is modeled (Kahate, 2004).

Normalization:

Normalization Database is a method of database organization. The method of standardization to eliminate information redundancies and unwanted features, such as insert, update and delete abnormalities, is systematic normalization. It is a multi-stage method that tabulates information to remove duplicate information from the relationship tables. Normalization is used for two purposes.

- Redundant(unusable) information elimination.
- Ensuring data dependency is meaningful i.e. that information is saved logically (Guptha & Guptha, 2012).

Unnormalized form

An unnormalized form is a repeatable value form. An unnormalized relationship can include relationships in other relationships as well as transitive dependencies of any kind (Easy Computer Academy, 2012).

First normalization form

A relationship is called in the First Normal Form (FNF) if and only when each relationship enters (the tuple-column intersection) has a single value as high as possible. First standard relationship only if and only if all the domains below contain single or atomic values (Thakur, 2010).

Second form

The table is in second normal form if the given table is in first normal form and there should not be a partial dependence (Ahlawat, 2010).

Third normal form

To be standardized third normal table, the table should be in second normal form and transitive dependency shouldn't be there (Gopi, 2010).

Entity-Relationship Diagram.

An entity-relation diagram (ERD) is a graphical illustration of how entities are connected in a scheme. An ERD consists of two important information visual symbols, which are the main entities within the scope of the system and the interconnections between them (Gopi, 2010).

The entity-relationship diagram of the project is given below:

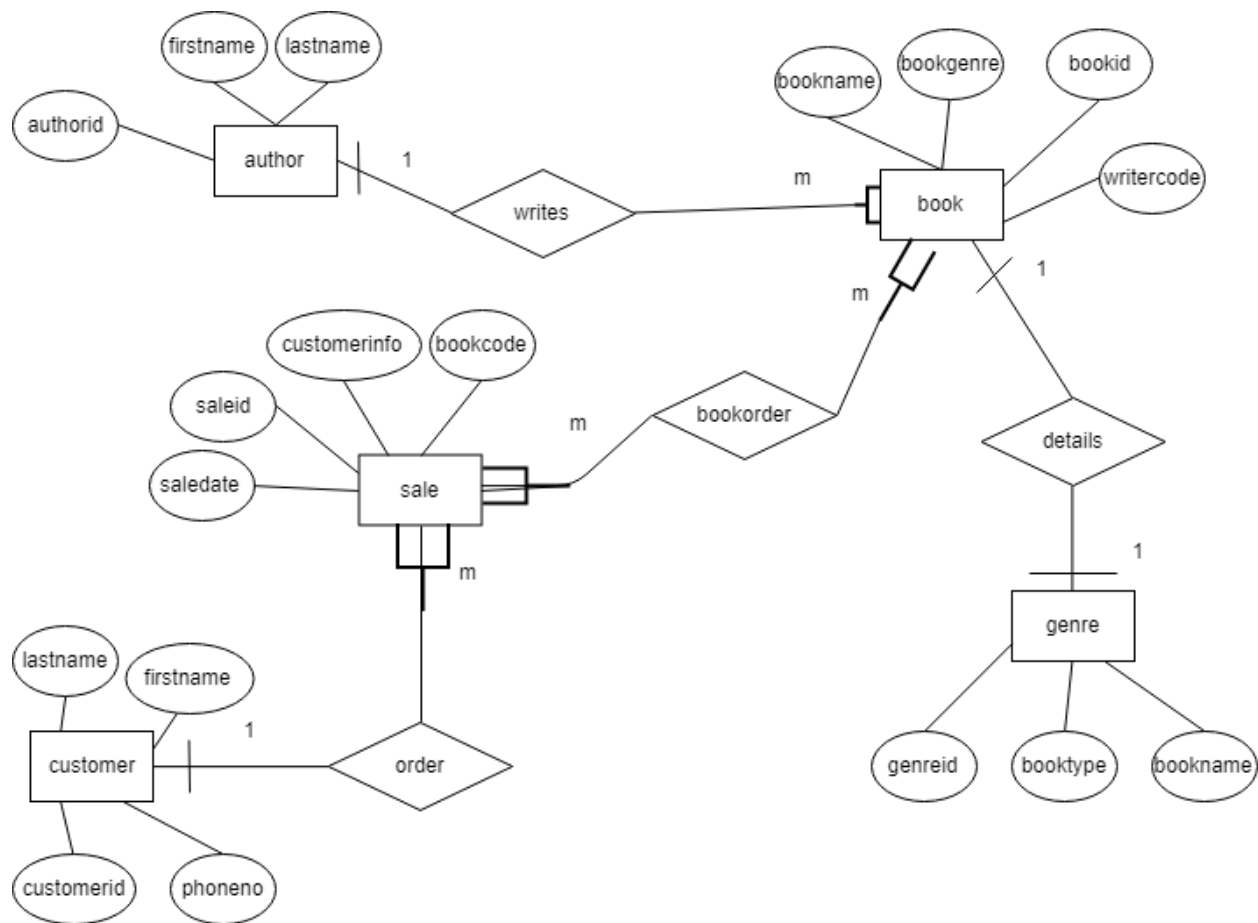


Figure 4: Entity-Relation Diagram

Relation diagram

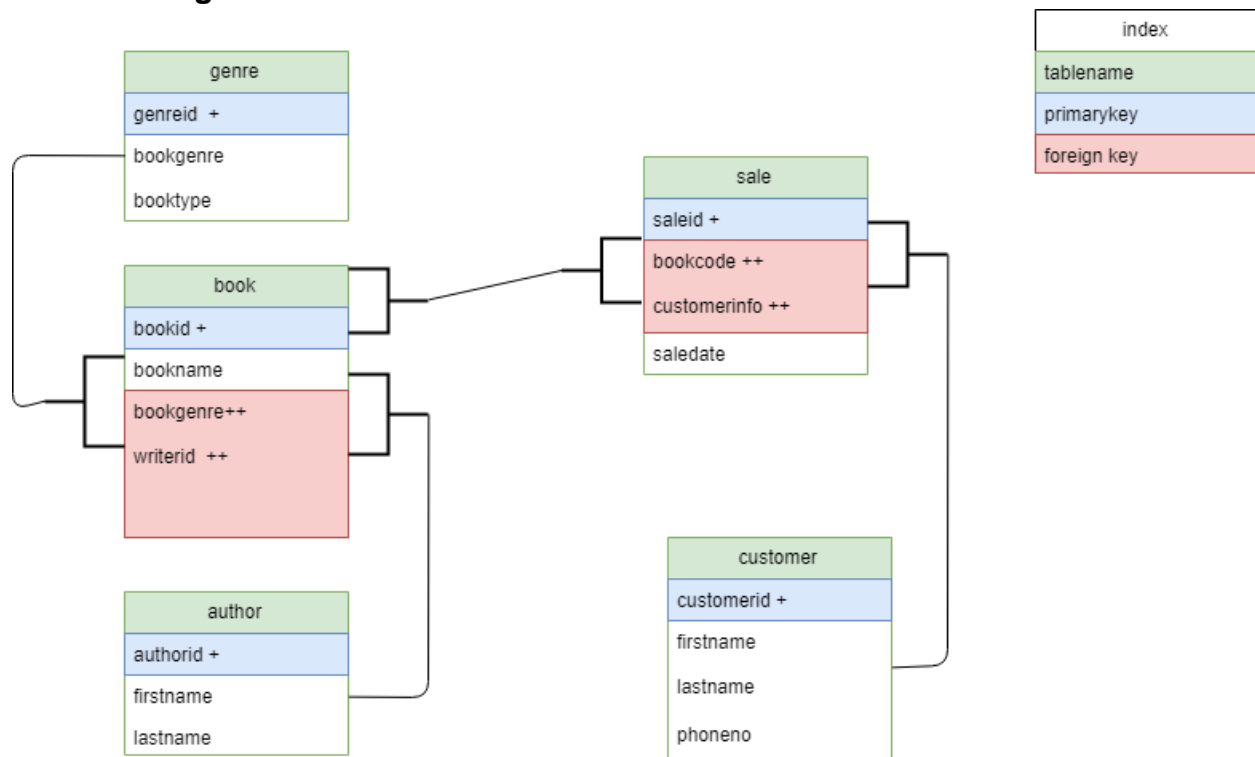


Figure 5:Relation Diagram

DATA DICTIONARY

A data dictionary is a file or set of documents containing metadata from a database. The data dictionary includes records of other database objects, such as data property, data interactions with other objects and information. A crucial element of any relation database is the data dictionary. It is invisible to most database users, ironically because of its significance (Janssen, 2009).

1.Data dictionary for author.

author

Field Name	Data Type	Key	Description
authorid	Varchar(5)	Primary key, not null	It is a primary key and it is unique.
firstname	Varchar(15)	Not null	This shows the first name of an author.
lastname	Varchar(15)	Not null	It contains the last name of an author.

2.Data dictionary for book.

Book.

Field Name	Data Type	Key	Description
Bookid	Varchar(5)	Primary key, not null	It is unique. And it is primary key.
Bookname	Varchar(45)	Not null	It stores the name of book.
Bookgenre	Int	Foreign key, not null	It is a foreign key of genreid from table genre.
writerid	Varchar(5)	Foreign key, not null	It is a foreign key of authorid from table author

3.Data dictionary for customer.

customer

Field Name	Data Type	Key	Description
Customerid	Varchar(5)	Primary key, not null	It stores id of customer and it is primary key.
Firstname	Varchar(15)	Not null	It shows the first name of customer.
Lastname	Varchar(10)	Not null	It shows the last name of customer.
phoneno	Varchar(10)	Not null, unique	It stores the phone number and it stores only unique number.

4.Data dictionary of genre.

Genre

Field Name	Data Type	Key	Description
Genreid	Int	Primary key, not null, auto increment	It is primary key and id of genre.
Bookgenre	Varchar(30)	Not null	It gives genres of book.
booktype	Varchar(15)	Not null	It shows the types of book.

5. Data dictionary for sale;

Sale

Field Name	Data Type	Key	Description
Saleid	Int	Primary key, not null	It is primary key it stores unique sale id
Bookcode	Varchar(5)	Foreign key, not null	It is foreign key of bookid from table book.
customerinfo	Varchar(5)	Foreign key, not null	It is a foreign key of customerid from table customer.
saledate	date	date	It stores the saledate of table sale

Queries

1.To see data sorts according to descending order from specific column name.

```
MariaDB [hamrostore]> SELECT * FROM author ORDER BY firstname DESC;
```

authorid	firstname	lastname
11NOT	Stephen	Covey
66NOT	Napoleon	Hill
55MAC	J.R.R	Tolkien
44LOC	Brother	Grimm
33MOC	Agatha	Christie
22DAL	Abraham	Lincoln

6 rows in set (0.005 sec)

Figure 6:Data according to descending order from specific column name.

2.To see distinct value

```
MariaDB [hamrostore]> SELECT DISTINCT (bookname) from book;
```

bookname
The Hobbit
Gettysburg Address
And There Were None
Rapunzel
Think and Grow Rich
The Lords of Rings
THE 7 Habits Of Highly Effective People

7 rows in set (0.004 sec)

Figure 7:To see distinct value.

3.To see the name of customer start with A

```
MariaDB [hamrostore]> SELECT * FROM customer WHERE firstname LIKE "A%";
```

customerid	firstname	lastname	phoneno
CO1	Aayushi	Tamang	9811780224
CO3	Arjun	Rai	9815112230

2 rows in set (0.007 sec)

Figure 8:To see the name of customer start with A

4.To see only data from specific column number of tables.

```
MariaDB [hamrostore]> SELECT * FROM genre WHERE genreid IN ("2","4","6");
```

genreid	bookgenre	booktype
2	Crime and Detective	Fiction
4	Fantasy	Fiction
6	Speech	NonFiction

3 rows in set (0.008 sec)

Figure 9: To see only data from specific column number of tables .

5.To See Phone Number AND Customer Details From a Specific Customer ID

```
MariaDB [hamrostore]> SELECT firstname,lastname,phoneno FROM customer WHERE customerid="C02";
```

firstname	lastname	phoneno
Cezal	Gautam	9811780556

1 row in set (0.003 sec)

Figure 10: To See Phone Number AND Customer Details From a Specific Customer ID

6.To count total number of sale id

```
MariaDB [hamrostore]> SELECT COUNT(*) AS saleid FROM sale;
```

saleid
7

1 row in set (0.005 sec)

Figure 11: To count total number of sale id

7. To show data between two book id

```
MariaDB [hamrostore]> SELECT * FROM book where bookid BETWEEN 1144 AND 1177;
```

bookid	bookname	bookgenre	writerid
1144	Rapunzel	3	44LOC
1155	Think and Grow Rich	5	66NOT
1166	The Lords of Rings	4	55MAC
1177	THE 7 Habits Of Highly Effective People	5	11NOT

```
4 rows in set (0.002 sec)
```

Figure 12: To show data between two book id

8. To see DATE SALE INFORMATION from specific month.

```
MariaDB [hamrostore]> SELECT * FROM sale WHERE month(saledate)="4";
```

saleid	bookcode	customerinfo	saledate
4	1155	CO1	2018-04-01
5	1177	CO5	2018-04-28

```
2 rows in set (0.003 sec)
```

Figure 13: To see DATE SALE INFORMATION from specific month.

9. To see specific data limit

```
MariaDB [hamrostore]> SELECT * FROM author ORDER BY firstname ASC LIMIT 4;
```

authorid	firstname	lastname
22DAL	Abraham	Lincoln
33MOC	Agatha	Christie
44LOC	Brother	Grimm
55MAC	J.R.R	Tolkien

```
4 rows in set (0.002 sec)
```

Figure 14: To see specific data limit

10. To see the table data that join from left.

```
MariaDB [hamrostore]> SELECT * FROM sale LEFT JOIN customer ON customerinfo=customerid;
```

saleid	bookcode	customerinfo	saledate	customerid	firstname	lastname	phoneno
1	1166	C04	2018-02-23	C04	Ram	Thapa	9817716036
2	1111	C02	2018-03-10	C02	Cezal	Gautam	9811780556
3	1144	C03	2018-03-20	C03	Arjun	Rai	9815112230
4	1155	C01	2018-04-01	C01	Aayushi	Tamang	9811780224
5	1177	C05	2018-04-28	C05	Ramesh	Giri	9804735723
6	1122	C01	2018-05-10	C01	Aayushi	Tamang	9811780224
7	1133	C03	2018-05-15	C03	Arjun	Rai	9815112230

7 rows in set (0.002 sec)

Figure 15: To see the table data that join from left.

11. To see all information from specific column data.

```
MariaDB [hamrostore]> select * from genre where booktype ="Fiction";
```

genreid	bookgenre	booktype
1	ActionandAdventure	Fiction
2	Crime and Detective	Fiction
3	Fairy Tale	Fiction
4	Fantasy	Fiction

4 rows in set (0.001 sec)

Figure 16: To see all information from specific column data.

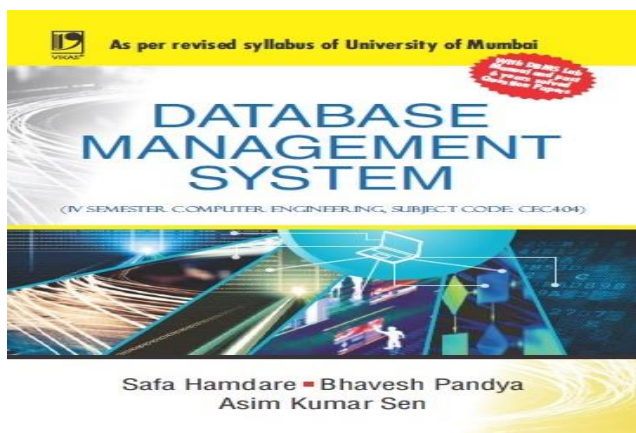
Research

Database plays an important role in any organization and other.

It is essential to have a data base management system that effectively manages data and enables users to easily perform various duties. In a single software application, a database management system stores, organizes and manages a big volume of data. Using this scheme enhances business efficiency and decreases total expenses.

For developing this project, I did a lot of research in many websites and different books related to database. I find easy to read and gain knowledge in only few websites. I also did some research in the lecture slides and other books too. the following are some websites and book where I did research.

Book: Database Management System



From this book," Database Management System". I got chance to know about database management system, database system concepts and architecture. It helps me a lot in developing my coursework.

Study Tonight:

study tonight is a great website for gaining knowledge about database and its code. It is free to access. It helped many students like me, which want to know more about databases and other programming languages. Thanks, a lot to the creator of this website which helped me a lot. <https://www.studytonight.com>

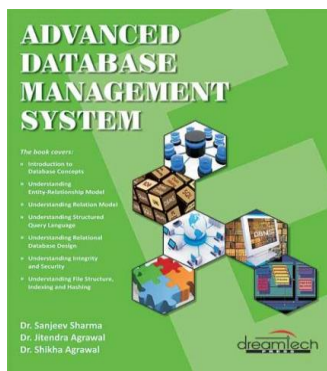
W3schools:

w3schools is the great websites to learn database management system. It helps to create different tables, insert data into tables and many more. It helps students to learn many new things online and it is free and easy to understand. <https://www.w3schools.com/sql>

GeekForGeek:

It is another great website which helps many students for gaining little bit of knowledge. Most of the students use this website for learning basic things required for their coursework. <https://www.w3schools.com/sql>

Book: Advance Database Management System



This book helped me a lot to understand what entity-relation diagram is and its importance in database. This book helps me to draw ERD of my course projects and relational diagram too. This book very helpful for learning database and data dictionary.

It gives a huge knowledge about data dictionary and how it is created and discuss the importance of using data dictionary.

Youtube:

YouTube is an excellent platform to learn a lot of new stuff.

People believe Youtube is just for entertainment but many professional tutor of different fields records about their topics and upload on youtube. This sorts of topic helps many students to learn new things and students are able to overcome with new ideas.

So, these were some websites and books that I had visited to prepare my coursework which were very helpful. I like to thank the author and the creator of books and websites because it helps me to face problems and overcome with a good project for coursework. I learned about database, data, data dictionary, documentation tips through the above websites and book.

Conclusion

As we all know this is the era of technology where database is an important content for every people as well as companies and organizations. It plays a vital role for recording, managing, updating data. All kinds of organization and companies uses different kind of database for recoding their valuable data and information. The project that I had developed also related with database.

I found my course work very interesting, challenging and useful related to database. While developing the coursework on bookstore I had faced many problems and got chance to learn new things. For this coursework, to be honest I had done many researches on books and websites. At the beginning of the project, I was unfamiliar about foreign key and many more index. While coding on the XAMPP I had face a lot of problems like creating tables and inserting data on table etc. But also, it was fun to code in MYSQL. In this course work I have developed simple database on bookstore. It is used for storing book information, book author, customer, sales record etc. This database system target to provide best way of data storing and managing for any bookstore with easy data edit and update, retrieve, delete, insert.

After I have done course work, I am quite impressed. in the beginning I was nervous while developing this project but after sometimes I feel good and finish my work. I got chance to learn about keys, ER diagrams and query.

At last I want to conclude my coursework by saying that it was a great learning experience for me. I would like to thank from my bottom of my heart to module teacher and friend for helping me in tackling problems during coursework. I am very glad that we were given a chance to learn a lot of new things about the project by the module leader.

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