A Project report

on

"LIBRARY DATA MANAGEMENT"

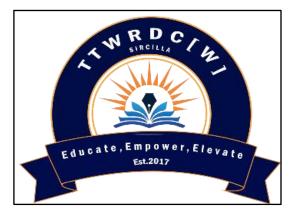
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 - Under the guidance

Of

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Department of Computer Science & Applications Telangana Tribal Welfare Residential Degree

College(W), Rajanna Sircilla.

(Affiliated to Satavahana University) (2022-23)

DECLARATION

I hereby, declare that this project entitled " **LIBRARY DATA MANAGEMENT** " have completed successfully towards the partial fulfillment for the award of the degree " **BACHELOR OF COMPUTER SCIENCE** " from "**TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE FOR WOMEN, RAJANNA SIRICILLA** .This is the bonafide work undertaken by me which is not submitted to any other university or institution for the award of any degree / diploma.

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CERTIFICATE

This is to certify that a study on project titled **"LIBRARY DATA MANAGEMENT**". This project is submitted by B.Shailaja (20077104468005), A.Shirisha (20077104468001), D.Ravali (20077104468011), E.Alekhya (20077104468013) and M.Anila (20077104468022) from **Telanagana Tribal Welfare Residential Degree College for Women, Siricilla** under the guidance of L.Anusha, HOD, Department of Computer Science and Applications. This has not been submitted to any other institute or university for the award of any degree.

Signature of the guide

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"LIBRARY DATA MANAGEMENT"

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1. BRIEF REVIEW OF PROJECT

<u>1.1. Title:</u> LIBRARY DATA MANAGEMENT

<u>1.2 Introduction:</u>

During search for a project topic, working of "LIBRARY DATA MANAGEMENT" impresses me. Use of computer is very essential and necessary in all the fields of life. Computerization of library data will obviously save the time and will offer speed to the work.

Thus it will support to our service to people, by using computerized mechanism we maintain all the information. This project is very useful in handling library data as requirements in schools. This new technique will certainly introduce in various schools for maintaining the library data.

I have tried my level best to make this project more and more efficient for practical use.

2.1 CHOICE OF LANGUAGE

Python is an object oriented programming language that provides a way of modularizing programs.

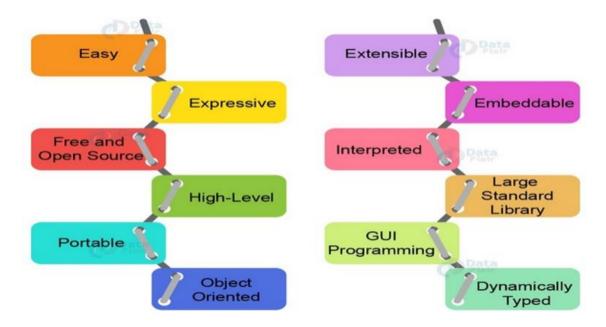
Python is versatile for handling very large programs. It is suitable for virtually any programming task including database, communication system and complex real life application.

Python programs are easily maintainable and expandable when a new feature needs to be implemented. It is very easy to add to existing structure of an object. In Python we can create variables at any place of programs.

Python is a high-level, interpreted, interactive, and object-oriented scripting language. Python was designed to be highly readable which uses English keywords frequently whereas other languages use punctuation and it has fewer syntactical constructions than other languages.

It is used in :

- 1. Software Development
- 2. Web Development
- 3. System Scripting
- 4. Mathematics



That is why I have selected Python programming language for my project.

2.2 CHOICE OF DATABASE

MySQL is a free-to-use, open-source database that facilitates effective management of databases by connecting them to the software. It is a stable, reliable and powerful solution with advanced features like the following:

1. Data Security

MySQL is globally renowned for being the most secure and reliable database management system used in popular web applications like WordPress, Drupal, Joomla, Facebook and Twitter. The data security and support for transactional processing that accompany the recent version of MySQL, can greatly benefit any business especially if it is an eCommerce business that involves frequent money transfers.

2. On-Demand Scalability

MySQL offers unmatched scalability to facilitate the management of deeply embedded apps using a smaller footprint even in massive warehouses that stack terabytes of data. On-demand flexibility is the star feature of MySQL. This open source solution allows complete customization to eCommerce businesses with unique database server requirements.

3. High Performance

MySQL features a distinct storage-engine framework that facilitates system administrators to configure the MySQL database server for a flawless performance. Whether it is an eCommerce website that receives a million queries every single day or a high-speed transactional processing system, MySQL is designed to meet even the most demanding applications while ensuring optimum speed, full-text indexes and unique memory caches for enhanced performance.

4. Round-The-Clock Uptime

MySQL comes with the assurance of 24X7 uptime and offers a wide range of high availability solutions like specialized cluster servers and master/slave replication configurations.

5. Comprehensive Transactional Support

MySQL tops the list of robust transactional database engines available on the market. With features like complete atomic, consistent, isolated, durable transaction support, multi-version transaction support, and unrestricted row-level locking, it is the go-to solution for full data integrity. It guarantees instant deadlock identification through server-enforced referential integrity.

6. Complete Workflow Control

With the average download and installation time being less than 30 minutes, MySQL means usability from day one. Whether your platform is Linux, Microsoft, Macintosh or UNIX, MySQL is a comprehensive solution with self-management features that automate everything from space expansion and configuration to data design and database administration.

7. Reduced Total Cost Of Ownership

By migrating current database apps to MySQL, enterprises are enjoying significant cost savings on new projects. The dependability and ease of management that accompany MySQL save your troubleshooting time which is otherwise wasted in fixing downtime issues and performance problems.

8. The Flexibility Of Open Source

All the fears and worries that arise in an open source solution can be brought to an end with My SQL's round-the-clock support and enterprise indemnification. The secure processing and trusted software of MySQL combine to provide effective transactions for large volume projects. It makes maintenance, debugging and upgrades fast and easy while enhancing the end-user experience.

3. PRE REQUISITES

- 1. Python Language
- 2. Mysql 8
- 3. PIP

Mysql Details installed in computer:

host	:	localhost
user	:	root
password	:	abcd
database	:	jnv
tables	:	books, students,
		transactions (with following details)

create table books(bookid int primary key,bookname char(20),authorname char(20),price float);

mysql> desc books;					
Field	Туре	Null	Кеу	Default	Extra
bookid bookname authorname price	int char(20) char(20) float	NO YES YES YES	PRI	NULL NULL NULL NULL	
++ 4 rows in set (0.00 sec)					

create table students(sadmn int primary key,sname char(20),class char(3));

<pre>mysql> desc students;</pre>					
Field	Туре	Null	Кеу	Default	Extra
	int char(20) char(3)	YES			
3 rows in set (0.01 sec)					

create table transactions (tid int primary key,sadmn int,bookid int,doi date,dor date);

<pre>mysql> DESC TRANSACTIONS; ++++++++</pre>					
Field	Туре	Null	Кеу	Default	Extra
TID SADMN BOOKID DOI DOR	int int	NO YES YES YES	PRI	+ NULL NULL NULL NULL NULL	
++++++++					

4. SOURCE CODE

def displaybooks():

def displaystudents():

def displaybookissues():

def addbook():

def addstudent():

```
def bookissue():
  mycon=mysql.connector.connect(host="localhost",user="root",password="abcd",
         database="jnv",auth plugin="mysql native password")
  cursor=mycon.cursor()
  print("All Books Details...")
  displaybooks()
  print("Student Details...")
  displaystudents()
  print("Previously Taken Book Issue Details....")
  displaybookissues()
  tid=int(input("Enter New Transaction Number: "))
  sadmn=int(input("Enter Student Admission Number : "))
  bookid=int(input("Enter Book ID : "))
  doi=input("Enter Date of Issue: ")
  sql="INSERT INTO transactions(tid,sadmn,bookid,doi) VALUES
         ({},{},{},'{}')".format(tid,sadmn,bookid,doi)
  cursor.execute(sql)
  mycon.commit()
  mycon.close()
```

```
def bookreturn():
  mycon=mysgl.connector.connect(host="localhost",user="root",password="abcd",
          database="jnv",auth plugin="mysql native password")
  cursor=mycon.cursor()
  print("Previously Taken Book Issue Details....")
  displaybookissues()
  temptid=int(input("Enter Previously Taken Transaction No : "))
  tempdor=input("Enter Date of Return : ")
  sql = "Update transactions set dor='{}' where tid={}".format(tempdor,temptid)
  cursor.execute(sql)
  mycon.commit()
  mycon.close()
choice='Y'
while choice not in ['n','N']:
  print('WELCOME TO LIBRARY MANAGEMENT SYSTEM\n')
  print('1.DISPLAY ALL BOOKS DETAILS')
  print('2.DISPLAY ALL STUDENTS DETAILS')
  print('3.DISPLAY ALL BOOKS ISSUES DETAILS')
  print('4.ADD BOOK DETAILS')
  print('5.ADD STUDENT DETAILS')
  print('6.ISSUE BOOKS')
  print('7.RETURN BOOKS')
  c=int(input("Enter ur choice (1-7) : "))
  if c==1:
    displaybooks()
  elif c==2:
    displaystudents()
  elif c==3:
    displaybookissues()
  elif c==4:
    addbook()
  elif c==5:
    addstudent()
  elif c==6:
    bookissue()
  elif c==7:
    bookreturn()
  choice=input("Do you want to continue.....Y/N")
```

5. Sample Data

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
 2.DISPLAY ALL STUDENTS DETAILS
 3.DISPLAY ALL BOOKS ISSUES DETAILS
 4.ADD BOOK DETAILS
 5.ADD STUDENT DETAILS
 6.ISSUE BOOKS
 7.RETURN BOOKS

Enter ur choice (1-7) : 4 Enter Book ID : 101 Enter Book Name : PYTHON Enter Author Name : GUIDO RUSSUM Enter Book Price : 750 Do you want to continue.....Y/N

Υ

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
 2.DISPLAY ALL STUDENTS DETAILS
 3.DISPLAY ALL BOOKS ISSUES DETAILS
 4.ADD BOOK DETAILS
 5.ADD STUDENT DETAILS
 6.ISSUE BOOKS
 7.RETURN BOOKS

Enter ur choice (1-7) : 4 Enter Book ID : 102 Enter Book Name : C++ Enter Author Name : KANITKAR Enter Book Price : 550 Do you want to continue.....Y/N

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
2.DISPLAY ALL STUDENTS DETAILS
3.DISPLAY ALL BOOKS ISSUES DETAILS
4.ADD BOOK DETAILS
5.ADD STUDENT DETAILS
6.ISSUE BOOKS
7.RETURN BOOKS
Enter ur choice (1-7) : 4
Enter Book ID : 103
Enter Book Name : JAVA
Enter Author Name : RAY MAN
Enter Book Price : 625
Do you want to continue.....Y/N

WELCOME TO LIBRARY MANAGEMENT SYSTEM

DISPLAY ALL BOOKS DETAILS
 DISPLAY ALL STUDENTS DETAILS
 DISPLAY ALL BOOKS ISSUES DETAILS
 ADD BOOK DETAILS
 SADD STUDENT DETAILS
 ISSUE BOOKS
 RETURN BOOKS
 Enter ur choice (1-7) : 5
 Enter Admission Number: 3001

Enter Student Name : M.RATNAKAR Enter Class : XII Do you want to continue.....Y/N

Y

Υ

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
 2.DISPLAY ALL STUDENTS DETAILS
 3.DISPLAY ALL BOOKS ISSUES DETAILS
 4.ADD BOOK DETAILS
 5.ADD STUDENT DETAILS
 6.ISSUE BOOKS
 7.RETURN BOOKS
 Enter ur choice (1-7) : 5

Enter Admission Number: 3002 Enter Student Name : P.PRAKASH Enter Class : XI Do you want to continue.....Y/N

Y

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
2.DISPLAY ALL STUDENTS DETAILS
3.DISPLAY ALL BOOKS ISSUES DETAILS
4.ADD BOOK DETAILS
5.ADD STUDENT DETAILS
6.ISSUE BOOKS
7.RETURN BOOKS
Enter ur choice (1-7) : 1

<pre>mysql> SELECT * FROM BOOKS; ++</pre>					
		authorname	price		
102	PYTHON C++ JAVA	GUIDO RUSSUM KANITKAR RAY MAN	750 550 625		
+++++++++					

Book ID: 101 Book Name= PYTHON Author= GUIDO RUSSUM Book Price= 750.0

Book ID: 102 Book Name= C++ Author= KANITKAR Book Price= 550.0 Book ID: 103 Book Name= JAVA Author= RAY MAN Book Price= 625.0 Do you want to continue.....Y/N Y

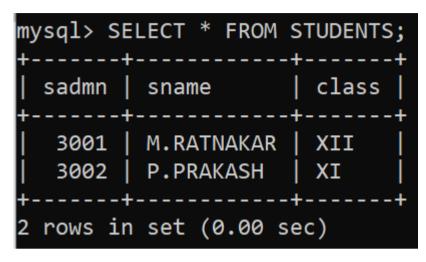
WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
 2.DISPLAY ALL STUDENTS DETAILS
 3.DISPLAY ALL BOOKS ISSUES DETAILS
 4.ADD BOOK DETAILS
 5.ADD STUDENT DETAILS
 6.ISSUE BOOKS

7.RETURN BOOKS

Enter ur choice (1-7): 2

Admission No: 3001 Student Name= M.RATNAKAR Class= XII Admission No: 3002 Student Name= P.PRAKASH Class= XI Do you want to continue.....Y/N Y



WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
 2.DISPLAY ALL STUDENTS DETAILS
 3.DISPLAY ALL BOOKS ISSUES DETAILS
 4.ADD BOOK DETAILS
 5.ADD STUDENT DETAILS
 6.ISSUE BOOKS
 7.RETURN BOOKS
 Enter ur choice (1-7) : 6

All Books Details...

Book ID: 101 Book Name= PYTHON Author= GUIDO RUSSUM Book Price= 750.0 Book ID: 102 Book Name= C++ Author= KANITKAR Book Price= 550.0 Book ID: 103 Book Name= JAVA Author= RAY MAN Book Price= 625.0 **Student Details...** Admission No: 3001 Student Name= M.RATNAKAR Class= XII Admission No: 3002 Student Name= P.PRAKASH Class= XI **Previously Taken Book Issue Details....** Enter New Transaction Number: 1 Enter Student Admission Number: 3001 Enter Book ID : 101 Enter Date of Issue: 2021-09-21

Υ

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
 2.DISPLAY ALL STUDENTS DETAILS
 3.DISPLAY ALL BOOKS ISSUES DETAILS
 4.ADD BOOK DETAILS
 5.ADD STUDENT DETAILS
 6.ISSUE BOOKS
 7.RETURN BOOKS
 Enter ur choice (1-7) : 6

All Books Details...

Book ID: 101 Book Name= PYTHON Author= GUIDO RUSSUM Book Price= 750.0 Book ID: 102 Book Name= C++ Author= KANITKAR Book Price= 550.0 Book ID: 103 Book Name= JAVA Author= RAY MAN Book Price= 625.0 **Student Details...** Admission No: 3001 Student Name= M.RATNAKAR Class= XII Admission No: 3002 Student Name= P.PRAKASH Class= XI **Previously Taken Book Issue Details....** Transaction ID: 1 Admission No= 3001 Book ID= 101 Date of Issue= 2021-09-21 Date of Return= None

Enter New Transaction Number: 2 Enter Student Admission Number : 3002 Enter Book ID : 102 Enter Date of Issue: 2021-11-25 Do you want to continue.....Y/N Y

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS
 2.DISPLAY ALL STUDENTS DETAILS
 3.DISPLAY ALL BOOKS ISSUES DETAILS
 4.ADD BOOK DETAILS
 5.ADD STUDENT DETAILS
 6.ISSUE BOOKS
 7.RETURN BOOKS
 Enter ur choice (1-7) : 7

Previously Taken Book Issue Details....

Transaction ID: 1 Admission No= 3001 Book ID= 101 Date of Issue= 2021-09-21 Date of Return= None Transaction ID: 2 Admission No= 3002 Book ID= 102 Date of Issue= 2021-11-25 Date of Return= None Enter Previously Taken Transaction No : 1 Enter Date of Return : 2021-10-15 Do you want to continue.....Y/N Y

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS 2.DISPLAY ALL STUDENTS DETAILS 3.DISPLAY ALL BOOKS ISSUES DETAILS 4.ADD BOOK DETAILS 5.ADD STUDENT DETAILS 6.ISSUE BOOKS 7.RETURN BOOKS Enter ur choice (1-7) : 3 Transaction ID: 1 Admission No= 3001 Book ID= 101 Date of Issue= 2021-09-21 Date of Return= 2021-10-15 Transaction ID: 2 Admission No= 3002 Book ID= 102 Date of Issue= 2021-11-25 Date of Return= None Do you want to continue.....Y/N N

mysql> SELECT * FROM TRANSACTIONS; +----+ | TID | SADMN | BOOKID | DOI | DOR | +---+--+ | 1 | 3001 | 101 | 2021-09-21 | 2021-10-15 | | 2 | 3002 | 102 | 2021-11-25 | NULL | +---++--++ 2 rows in set (0.00 sec)

6. USER DOCUMENTATION

REAL LIFE APPLICATIONS

This project is very easy to manage students data in schools. This project is mainly used for the purpose of educational institutes. It handless huge data very efficiently with 100% accuracy and saves time.

The main - menu is displayed on the screen. On the main menu the following options is displayed on the screen.

WELCOME TO LIBRARY MANAGEMENT SYSTEM

1.DISPLAY ALL BOOKS DETAILS

- 2. DISPLAY ALL STUDENTS DETAILS
- 3. DISPLAY ALL BOOKS ISSUES DETAILS
- 4. ADD BOOK DETAILS
- 5. ADD STUDENT DETAILS
- 6. ISSUE BOOKS
- **7. RETURJ BOOKS**

Enter ur choice (1-4) :

DATA IMPLEMENTATION

For this project, the sample input data is collected from the user. It is very tedious and time consuming process. Though a man have a very intelligent mind but he should not solve heavy calculations fast and accurate and he makes errors.

A school can use one computer for the implementation of the project. It processes automatically important library related data without time waste and without any errors. This process gives accurate result with 100% accuracy than manual system.

7. CONCLUSION

While selecting this project, I decided to make a computerized "Library Data Management" very efficiently. To make a provision for user level program facility, to give flexibility to user and also to make my software user friendly, all the time return to the main menu, when the work in the particular submenu is completed! Python is an object oriented language, it gives the full facility for any future modification without any much complexity!

The concept of the library data management ie Storing library books information using 3 tables students details, books details, transaction details is common in all the school libraries, so this project will be applicable in each school.

This project can be extended to all other operations of the school like marks management, personal details management, etc.

<u>8. BIBLIOGRAPHY</u>

1. PYTHON TEXT BOOK FOR CLASS XII-SUMITA ARORA2. Website links, which provides python, mysql.