PROJECT TITLE:

STUDENT NAME:
STUDENT BITS ID:

Version Number	Date	Author/Owner	Description of Change

Eg.,
For every change you note in down as new version no.

Version Number	Date	Author/Owner	Description of Change
1	1/8/2023	ABC	Problem statement
2	15/8/2023	ABC	Change of project plan

: : : :

The contents of the document should include the following :

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I. REQUIREMENT SPECIFICATION:

a. Problem Statement & Requirements Definition

SAMPLE LIBRARY MANAGEMENT SYSTEM:

We decided to create a database that can help organize a library. It would be ideal for a library upgrading from a card or paper system where they have a card for each piece of media and for each customer or patron. It would also benefit a library where all employee records are still on a paper basis as well including all hire paperwork and payroll information such as salary. As you can imagine for a paper system, it makes figuring out how many books are overdue, or how many people owe fees, take quite a while to figure out for the employees. Patrons also have no control over the system.

The purpose of this database is to automate and replace the current card and paper system. All tasks previously recorded on paper or cards will be integrated into the new system. For example, based on due dates, librarians can run reports to see who has late

books (checked out media report), who owes fees for late books or damaged books (cost report) and much more. It will only take a few seconds to run the report as opposed to going through all of the cards by hand, saving the librarians hours a week.

The library patrons will also have added usability. Potentially there could be computers in the library for their use to see what books they currently have checked out, and what they have checked out in the past.. The last main feature that would be new to patrons is that they would have web access to the library to reserve books. It will be a simple form with the same search capabilities that allows them to submit a request. After the request, the librarians could then pull the books and place them on hold on a first come first served basis. Other capabilities include being able to renew a book online. Each book can only be renewed once before it is considered to be late.

Lastly, the library manager will have the same access as the librarian as well as some added features. Employee records will all be stored in the database, replacing the paper system. He will also be able to order new media (not an actual function of the database) and add it to the system. He will then have more reporting capabilities including a usage report that shows how often something is used to help determine what types of media should be ordered and in what quantities.

Hopefully with all of the changes, it would make the library run much more smoothly. With less time spent filling out paperwork, more time can be devoted to serving the customers and maintaining the potentially vast amounts of media held in the library. The system will hopefully also be more reliable and user friendly to everyone. While it will require some training for employees, once the system is in place, the benefits will greatly outweigh the costs of implementing the system since using the computer to do most daily tasks will be much faster than a paper based system.

b. Project features identified

Feature ID	Feature name	Description
Eg. T01	Login	Authentication and on success takes you to your dashboard

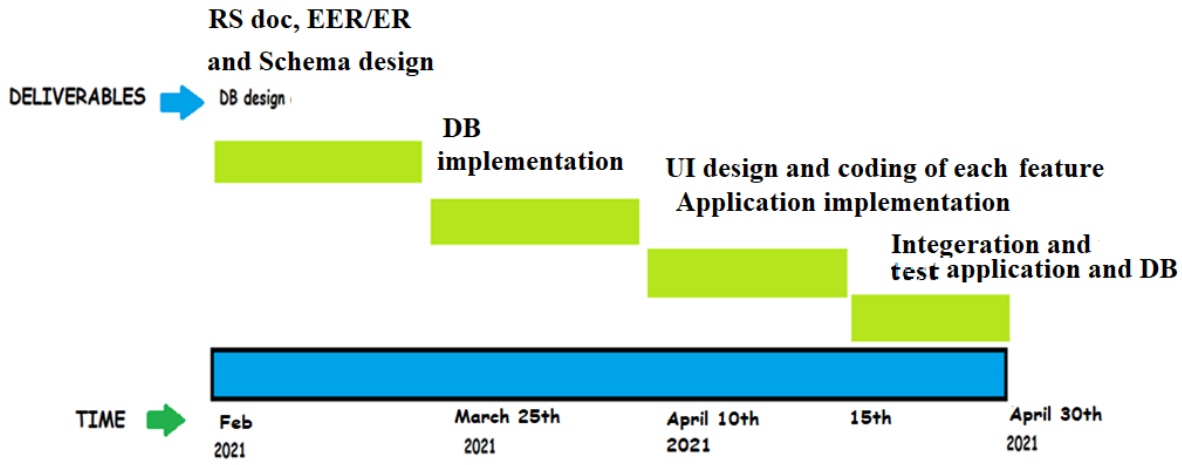
c. Software and hardware details

Platform	

Frontend/console	
Backend/server	
Database	
Programming Language : Frontend	
Backend/server: programming Language	

d. **Project Plan**

Eg.,



e. **Specify a Google drive link for sharing all your RS documents and future deliverables**

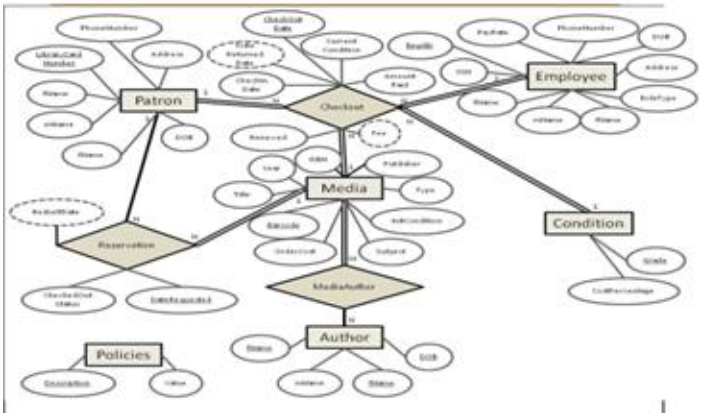
Note : it should be given access permission for me.

========== END OF DELIVERABLE 1 ==========

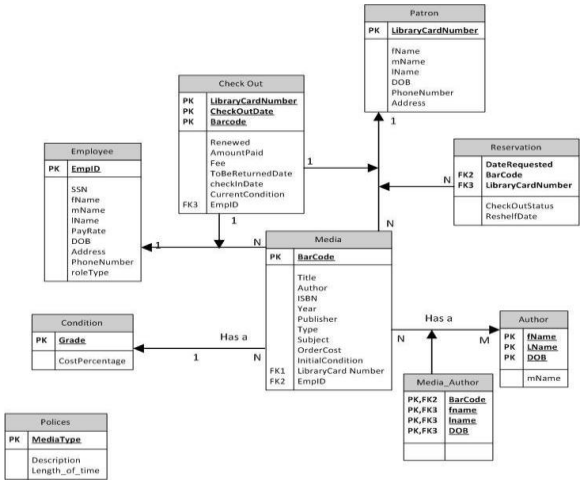
DUE DATE: 15/8/2023

II. CONCEPTUAL DESIGN:

a. Entity Relationship Model



b. Object Model

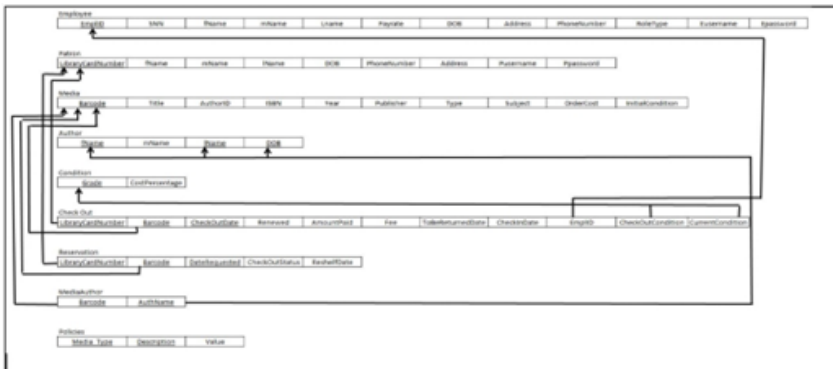


========== END OF DELIVERABLE 2 ==========

Due Date: 30/8/2023

III LOGICAL DESIGN

a. Relational Database Schema



From diagram above write down all functional dependencies.

Eg., orderid → custid, productid

b. Normalization

Include the below for all the tables.

Table Name: Author

State: 3NF

Reason: No multivalued attributes, No partial dependencies, No transitive dependency

All tables are expected to be in 3NF. Optionally you can choose higher normal forms also. Proper justification for choosing a higher normal form has to be provided.

Note: Incase if there is any table not in 3NF, it has to be normalized to 3NF and changes made should be projected separately. Changes should also be updated in version table

c. CREATE DATA DICTIONARY :

Table Definitions and Data Contents

	Column Name	Data Type	Allow Nulls
▶🔑	Fname	nvarchar(50)	☐
	Minit	nchar(1)	☐
🔑	Lname	nvarchar(50)	☐
🔑	DOB	date	☐

	Fname	Minit	Lname	DOB
1	Adams	Q	Douglas	1967-12-05
2	Asimov	Z	Isaac	1975-12-30
3	Card	S	Orson	1942-07-23
4	Firstname	M	Lastname	1960-04-12
5	George	J	Orwell	1930-06-05
6	Ira	T	Berkowitz	1954-04-12
7	J	J	Tolkein	1960-03-12
8	Nate	H	Priddy	1988-03-12

========== END OF DELIVERABLE 3 ==========

Due date : 16/9/2023

IV PHYSICAL DESIGN

a. SQL Statements

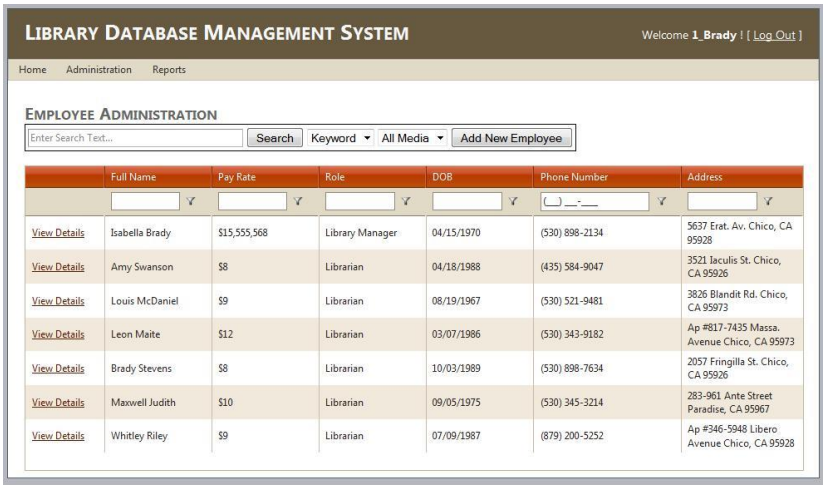
```
CREATE TABLE [dbo].[Author](
[Fname] [nvarchar](50) NOT NULL,
[Minit] [nchar](1) NOT NULL,
[Lname] [nvarchar](50) NOT NULL,
[DOB] [date] NOT NULL,
CONSTRAINT [PK__Author_M__EFC884A033D4B598] PRIMARY KEY CLUSTERED
(
[Fname] ASC,
[Lname]
ASC, [DOB]
ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY
=OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
```

b. Stored Procedures/ Triggers/indexes

Include code for stored procedures/triggers/indexes if applicable

c. User Interface and Database connectivity

Your application should access DB through ODBC or Backend using appropriate technology and demonstrate the DB working.



d. Front end or console based codes.

========== END OF DELIVERABLE 4 ==========

Due Date: 20/10/2023

V FINAL DOC

a. TEST CASES for each functionality in the applications.

TEST CASE

TASK name/id	testid	TEST DATA	Expected OUTPUT	Actual OUTPUT	TEST PASS/FAIL

b. DEMO VIDEO for 5 mins.

- Walk me through your front end, back end code. 2 mins
- Each function TEST CASE.

c. references:

eg., For Library management System:
mattben.info/media/pdf/370_ImplementationPhase.pdf.

========== END OF DELIVERABLE 5 ==========

Due date : 28/10/2023

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DUE DATES:

Deliverable no:	DATE of submission.
1	**15/8/2023**
2	**30/8/2023**
3	**16/9/2023**
4	**20/10/2023**
5	**28/10/2023**

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