INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD

FOC – Software Engineering Department

INTRODUCTION TO DATABASE SYSTEM CS-242

Final project of IDS

Name: Mohammad Irfan

Registration #: 4161-FBAS/BSSE/F20

Email: mohammad.bsse4161@iiu.edu.pk

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Title of my Project:

DIGITAL MAGAZINE SYSTEM

Preface:

I am Mohammad Irfan studding in Department of Software Engineering, International Islamic University, Islamabad, 6th semester. This is one of my ideas for final project.

As you know the world situation mainly 3th world countries like: Pakistan, Afghanistan, African countries etc..

I am MUSLIM and my religion taught me to be human and have humanity So, as I mentioned at the top of first page a poem, I feel it is my duty to do it to teach and serve them anything that I know that I taught.

It's hard to get knowledge and rise your educational knowledge in addition to know the truth state of any corner of your country or city in update mood.

So, by planning and developing this app and website to fulfill the responsibility that is above me

Contact info:

WhatsApp: +92 (0) 3030888388

E-mail: mohammad.irfan.balkhi@gmail.com

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1.0 CHAPTER #01

1.1 Introduction:

Digital Magazine Database System

As you know the world situation mainly 3th world countries like: Pakistan, Afghanistan, etc...

It's hard to get knowledge and complete your education in addition to know the truth state of any corner of your country or city in update mood.

So, this application is used to Rising the level of your knowledge without any economic issues and help others to be educated.

This app is the best way to earn online, study online, share and publish your book and ideas.

This is Digital Magazine that has multiple purposes that solve the below problems:

- Economic issues related to education
- Incompetent in knowledge
- Unaware events and daily news etc...

This application will provide the below features in Magazine and Author categories:

1. Magazine:
    - Sharing your articles for public
    - Rising the level of your knowledge of your
    - download the books
2. Author:
    - Share your idea for public
    - Introduce your skills and talents
    - Online income
    - Publish your books or idea
3. Article:
    - New research
    - New Discoveries
    - Introduce new talents
4. Reader:

- Get free knowledge
- Know from there city and environment that what's going on
- Competition with awards

5. Category:
    - Different type of categories (News: Political, economic, sports and cultural)
    - Competition part among readers: Sport, Poetry, essay's or topics, photography etc.

2.0 CHAPTER #02

2.1 Existing System (No system or Manual System)

They use manual system for this but in magazine publishing or magazine reading we (3th world countries) are very lazy and there is no online system to reach at hole city the villages are other part of our discussion.

In manual system that is using now a day there are many issues like: force from government or politic sides, economic issues that they can't offer their services to far distances, no specialized persons and many other problems that 3th countries faced with.

2.1.1 Issues/Drawbacks in Existing system

In manual system that is using now a day there are many issues like: force from government or politic sides, economic issues that they can't offer their services to far distances, no specialized persons, losing data, unknow talented faces that can change their and our life and many other problems that 3th countries faced with.

There are many drawbacks in existing system because as we know that data is kept manually. So due to manual data keeping system, although the storage of data happens but factors like efficiency and reliability can't be achieved. Due to this, chances of human errors may take place and calculations of some mathematic parts.

3.0 CHAPTER #03

3.1 Proposed System

In proposed System, data is not store manually. It is stored in data base. I have made the data base which can easily store the information of Magazine, author records, Reader and articles records, Newsies, New talented persons in our/your society records and information, and yearly revenue and way of earning and improving our/your knowledge and many more. So, by keeping this system, many problems can be overcome.

But if we want to keep the data in Data Base, we need an explicit backup. As Database contains the data of whole company the copy or backup of Data is mandatory. So, in that case of loss of data from real Data Base, we can recover Data with the help of explicit backup.

3.2 Advantages in Proposed System

I had included some the advantages of Online Magazine System database system bellow with its title:

Online Magazine System:

- Improving knowledge
- Online earning / passive income
- Advertisement of your companies or work
- Be aware of the region and the world
- Guider
- Introducing many opportunities
- Online services
- Introducing your talent to all the world
- Idea sharing
- The best way to fulfill the responsibility and service of humanity

4.0 CHAPTER #04

4.1 Data Requirement

Data requirements definition establishes the process used to identify, prioritize, precisely formulate, and validate the data needed to achieve business objectives.

In this project, I have stored the data in the form of tables, queries, reports and forms.

4.2 Entity Classes

I have included five entity classes named as follows:

1. Magazine (Represents a magazine publication.)
2. Author (Represents an author or contributor to the magazine)
3. Article (Represents an individual article within a magazine issue)
4. Reader (information about the customers that uses form this app or website)
5. Category (Information about the different types of topics)

4.3 Attributes of each Entity Class

1. Magazine
    - Magazine ID
    - Main title
    - Publication date
    - Content description
    - Publishers names
2. Author

- Author ID
- Name
- Biography
- E-mail
- Contact information

3. Article
    - Article ID
    - Title
    - Author
    - Category
    - Publication date
4. Reader:
    - Reader ID
    - Name
    - E-mail
    - Username
    - Password
5. Category:
    - Category ID
    - Label
    - Description

4.4 Normalization:

1.Magazine:

To normalize the MAGAZINE entity class, we need to identify the functional dependencies between the attributes and group them into tables that minimize data redundancy and maintain data integrity.

First, we need to identify the primary key of the table. The MAGAZINE ID is a good candidate for the primary key since it uniquely identifies each magazine.

Next, we need to identify any functional dependencies. From the given attributes, we can see that MAIN TITLE, PUBLICATION DATE, CONTENTS DESCRIPTION, and PUBLISHER NAMES are all dependent on the MAGAZINE ID.

Therefore, we can create a table for MAGAZINE that includes the MAGAZINE ID as the primary key and the dependent attributes:

MAGAZINE (MAGAZINE ID (PK), MAIN TITLE, PUBLICATION DATE, CONTENTS DESCRIPTION, PUBLISHER NAMES)

This table is in 1st Normal Form (1NF) since each attribute contains a single value, and there are no repeating groups or arrays.

However, we can further normalize this table by identifying any partial dependencies. A partial dependency occurs when an attribute is dependent on only part of the primary key.

In this case, we can see that there are no partial dependencies since all the non-key attributes are dependent on the entire primary key. Therefore, this table is already in 2nd Normal Form (2NF).

2. Author:

To normalize the AUTHOR entity class, we need to identify the functional dependencies between the attributes and group them into tables that minimize data redundancy and maintain data integrity.

First, we need to identify the primary key of the table. The AUTHOR ID is a good candidate for the primary key since it uniquely identifies each author.

Next, we need to identify any functional dependencies. From the given attributes, we can see that NAME, BIOGRAPHY, E-MAIL, and CONTACT INFORMATION are all dependent on the AUTHOR ID.

Therefore, we can create a table for AUTHOR that includes the AUTHOR ID as the primary key and the dependent attributes:

AUTHOR (AUTHOR ID PK, NAME, BIOGRAPHY, E-MAIL, CONTACT INFORMATION)

This table is in 1st Normal Form (1NF) since each attribute contains a single value, and there are no repeating groups or arrays.

However, we can further normalize this table by identifying any partial dependencies. A partial dependency occurs when an attribute is dependent on only part of the primary key.

In this case, we can see that there are no partial dependencies since all the non-key attributes are dependent on the entire primary key.

Therefore, this table is already in 2nd Normal Form (2NF).

3. Article:

To normalize the ARTICLE entity class, we need to identify the functional dependencies between the attributes and group them into tables that minimize data redundancy and maintain data integrity.

First, we need to identify the primary key of the table. The ARTICLE ID is a good candidate for the primary key since it uniquely identifies each article.

Next, we need to identify the foreign keys in the ARTICLE table. AUTHOR and CATEGORY are both foreign keys that reference the primary keys in other tables.

Therefore, we can create separate tables for AUTHOR and CATEGORY, each with their own primary key, and then reference them as foreign keys in the ARTICLE table:

AUTHOR (AUTHOR ID PK, NAME, BIOGRAPHY, E-MAIL, CONTACT INFORMATION)

CATEGORY (CATEGORY ID PK, NAME)

ARTICLE (ARTICLE ID PK, TITLE, AUTHOR ID FK, CATEGORY ID FK, PUBLICATION DATE)

This set of tables is in 1st Normal Form (1NF) since each attribute contains a single value, and there are no repeating groups or arrays.

However, we can further normalize this set of tables by identifying any partial dependencies. A partial dependency occurs when an attribute is dependent on only part of the primary key.

In the AUTHOR and CATEGORY tables, there are no partial dependencies since all the attributes are dependent on the entire primary key.

In the ARTICLE table, there are no partial dependencies on ARTICLE ID, but there is a partial dependency on AUTHOR ID and CATEGORY ID. TITLE and PUBLICATION DATE are fully dependent on the primary key, so we can leave them in the ARTICLE table.

Therefore, we can further normalize the ARTICLE table by creating separate tables for the dependencies on AUTHOR ID and CATEGORY ID:

ARTICLE (ARTICLE ID PK, TITLE, PUBLICATION DATE)

ARTICLE_AUTHOR (ARTICLE ID PK, AUTHOR ID PK)

ARTICLE_CATEGORY (ARTICLE ID PK, CATEGORY ID PK)

The ARTICLE_AUTHOR and ARTICLE_CATEGORY tables contain only the foreign keys from the ARTICLE table and their corresponding primary keys in the AUTHOR and CATEGORY tables.

This set of tables is in 3rd Normal Form (3NF) since there are no transitive dependencies. Each table contains only attributes that are directly dependent on the primary key.

4. Reader:

To normalize the READER entity class table, we can follow the normalization process to eliminate redundancy and ensure data integrity:

First Normal Form (1NF):

Ensure atomicity: Make sure that each attribute holds a single value. The attributes in the table already appear to be atomic, so no further changes are needed.

Second Normal Form (2NF):

Identify the functional dependencies: Determine the functional dependencies between attributes. In this case, it appears that READER ID is the primary key, and all other attributes depend on the entire primary key. Therefore, there are no partial dependencies, and the table is already in 2NF.

Third Normal Form (3NF):

Remove transitive dependencies: Identify any transitive dependencies and remove them by creating separate tables. In this case, there are no transitive dependencies as all attributes depend directly on the primary key.

Therefore, based on the attributes provided (READER ID, NAME, E-MAIL, USERNAME, PASSWORD), the table is already in at least 2NF and does not require further normalization.

5. Category:

To normalize the CATEGORY entity class table, we can follow the normalization process to eliminate redundancy and ensure data integrity:

1. First Normal Form (1NF):

- Ensure atomicity: Make sure that each attribute holds a single value. The attributes in the table already appear to be atomic, so no further changes are needed.

2. Second Normal Form (2NF):

- Identify the functional dependencies: Determine the functional dependencies between attributes. In this case, it seems that CATEGORY ID is the primary key, and both LABEL NAME and DESCRIPTION depend on the entire primary key. Therefore, there are no partial dependencies, and the table is already in 2NF.

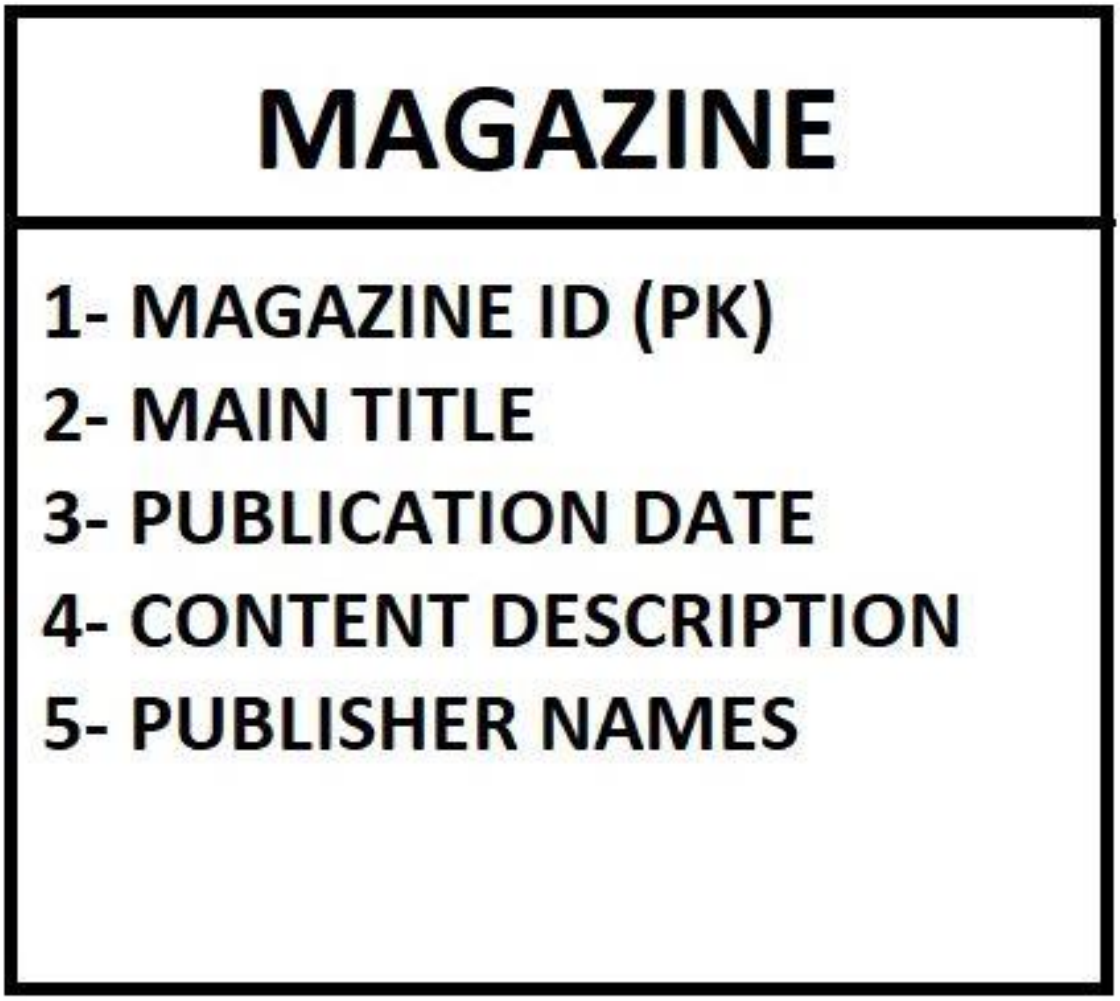
3. Third Normal Form (3NF):

- Remove transitive dependencies: Identify any transitive dependencies and remove them by creating separate tables. In this case, there are no apparent transitive dependencies as all attributes depend directly on the primary key.

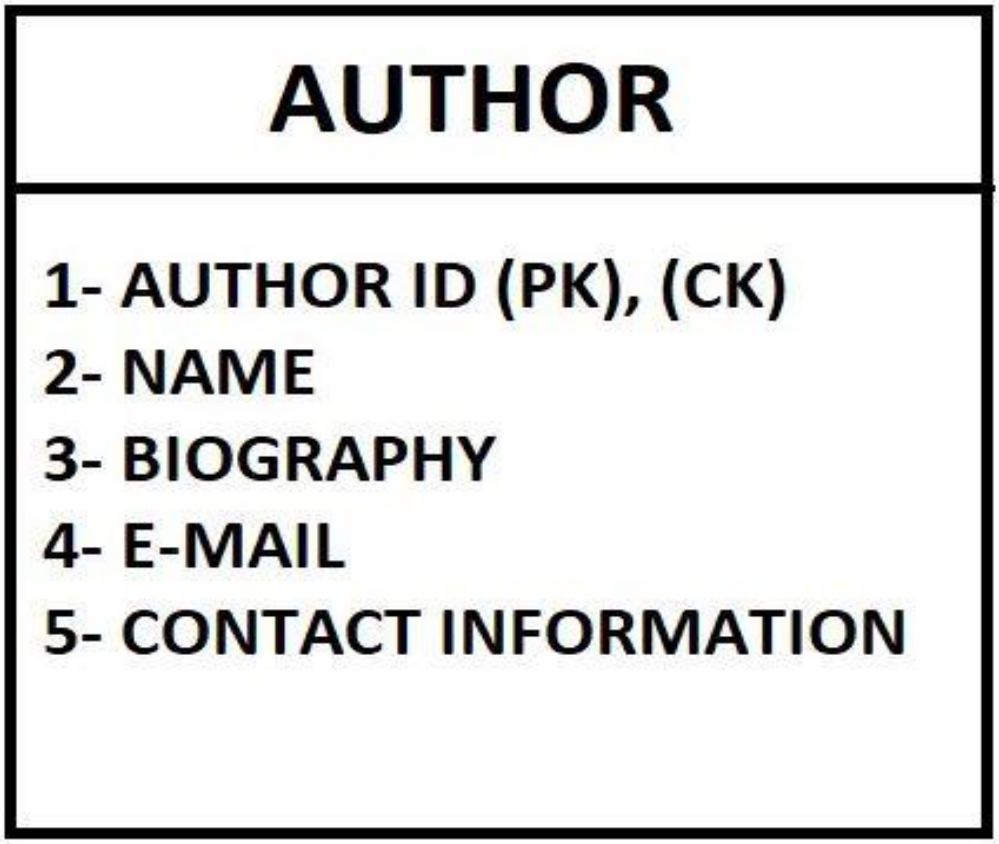
Therefore, based on the attributes provided (CATEGORY ID, LABEL NAME, DESCRIPTION), the table is already in at least 2NF and does not require further normalization.

4.5 Tables:

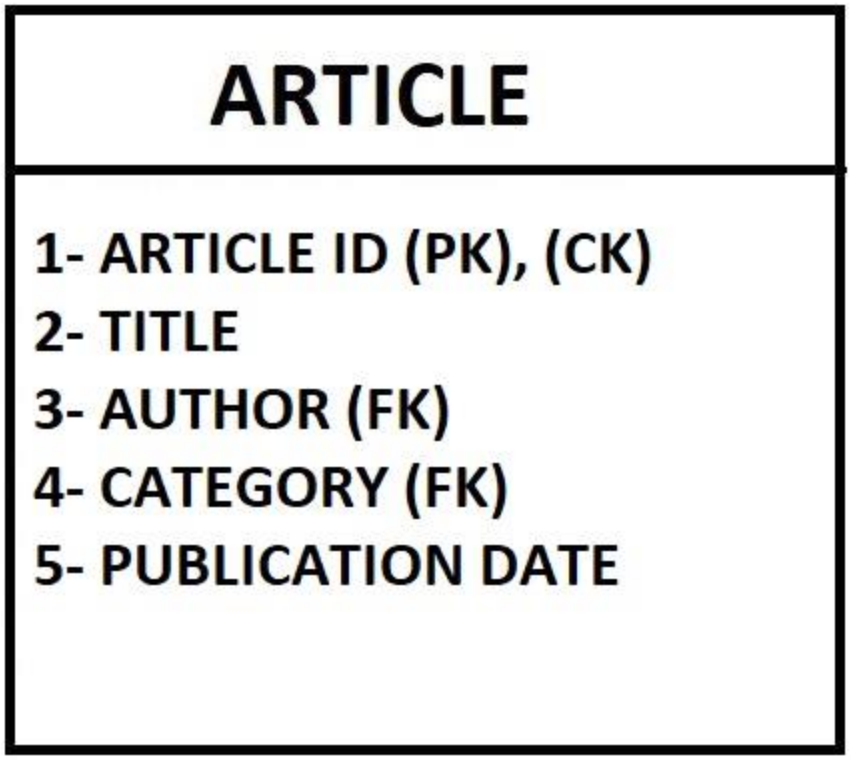
1. Magazine:


MAGAZINE
1- MAGAZINE ID (PK)
2- MAIN TITLE
3- PUBLICATION DATE
4- CONTENT DESCRIPTION
5- PUBLISHER NAMES

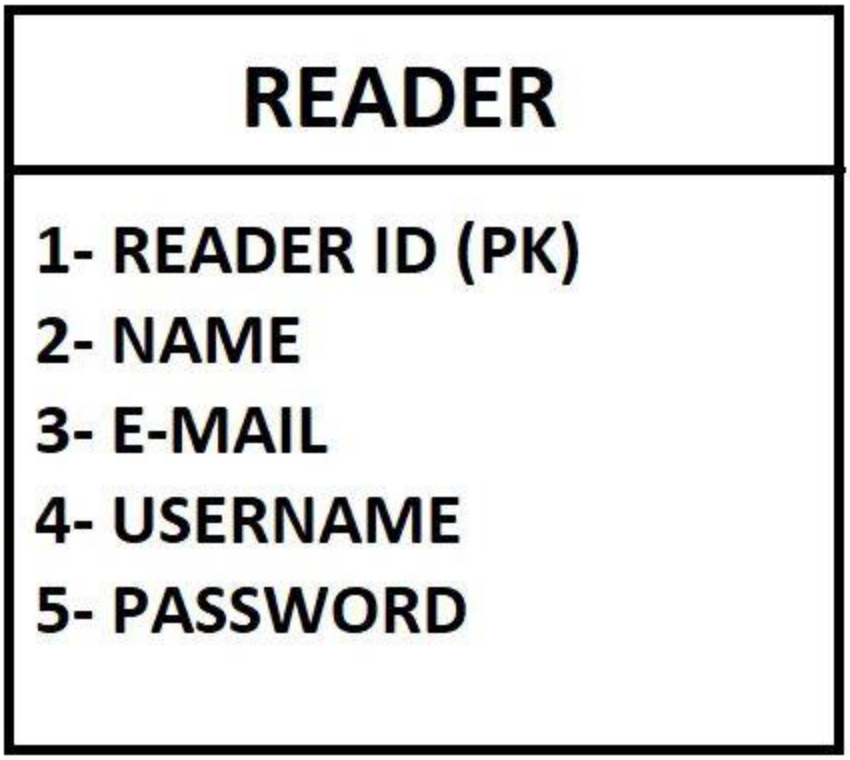
2. Author:


AUTHOR
1- AUTHOR ID (PK), (CK)
2- NAME
3- BIOGRAPHY
4- E-MAIL
5- CONTACT INFORMATION

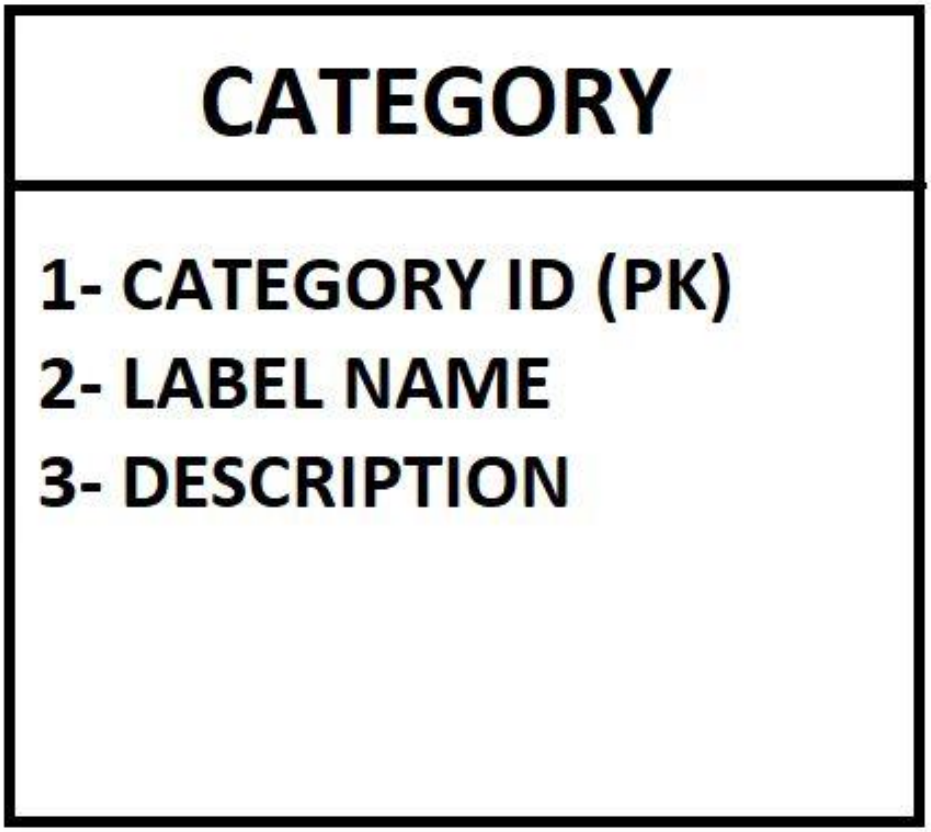
3. Article:


ARTICLE
1- ARTICLE ID (PK), (CK)
2- TITLE
3- AUTHOR (FK)
4- CATEGORY (FK)
5- PUBLICATION DATE

4. Reader:

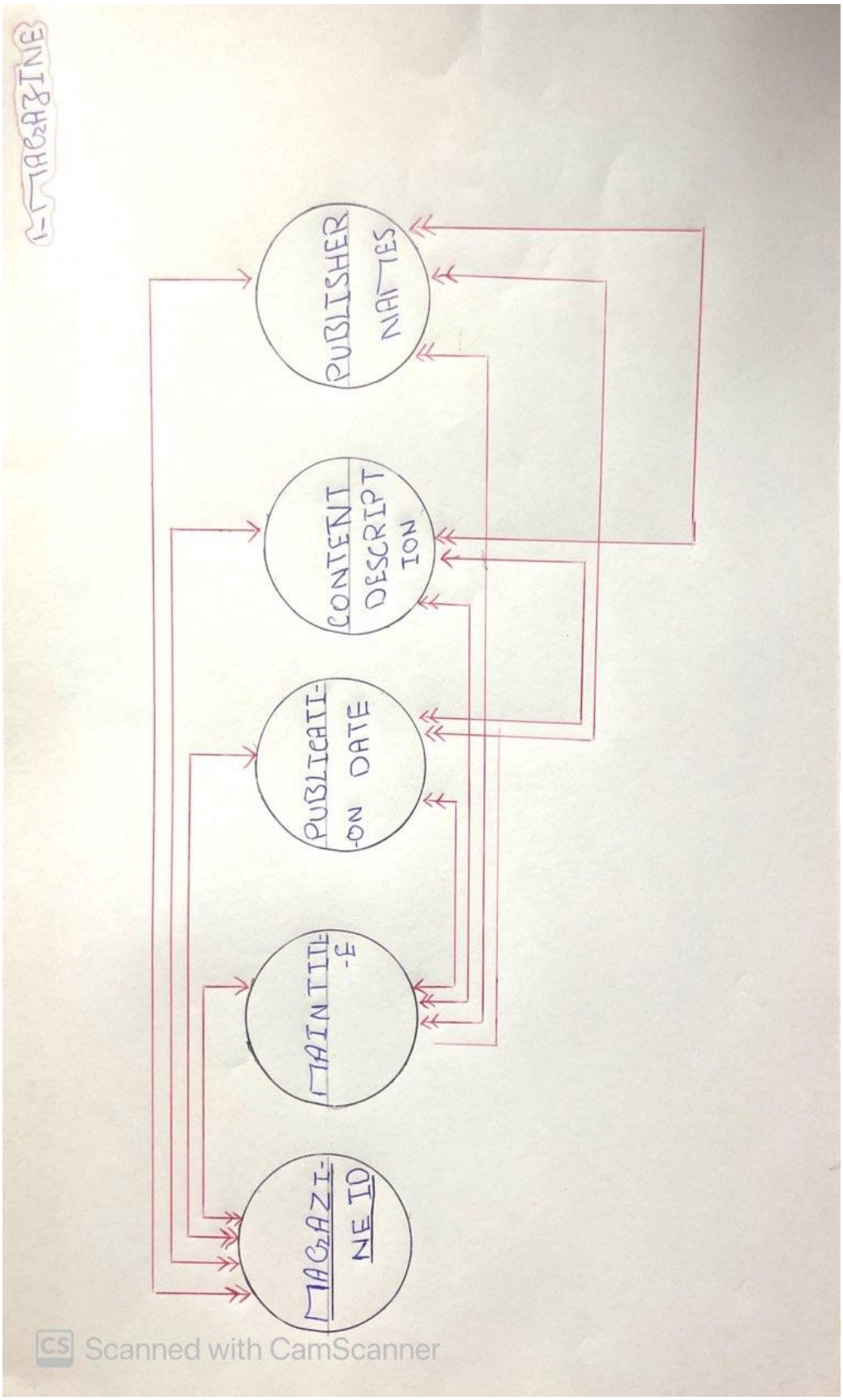


5. Category:



4.6 Bubble Chart:

1. **MAGAZINE:**


E-MAGAZINE
PUBLISHER NAMES
CONTENT DESCRIPTION
PUBLICATION DATE
MAINTITLE
MAGAZINE ID
Scanned with CamScanner

Primary Key Attribute: MAGAZINE_ID

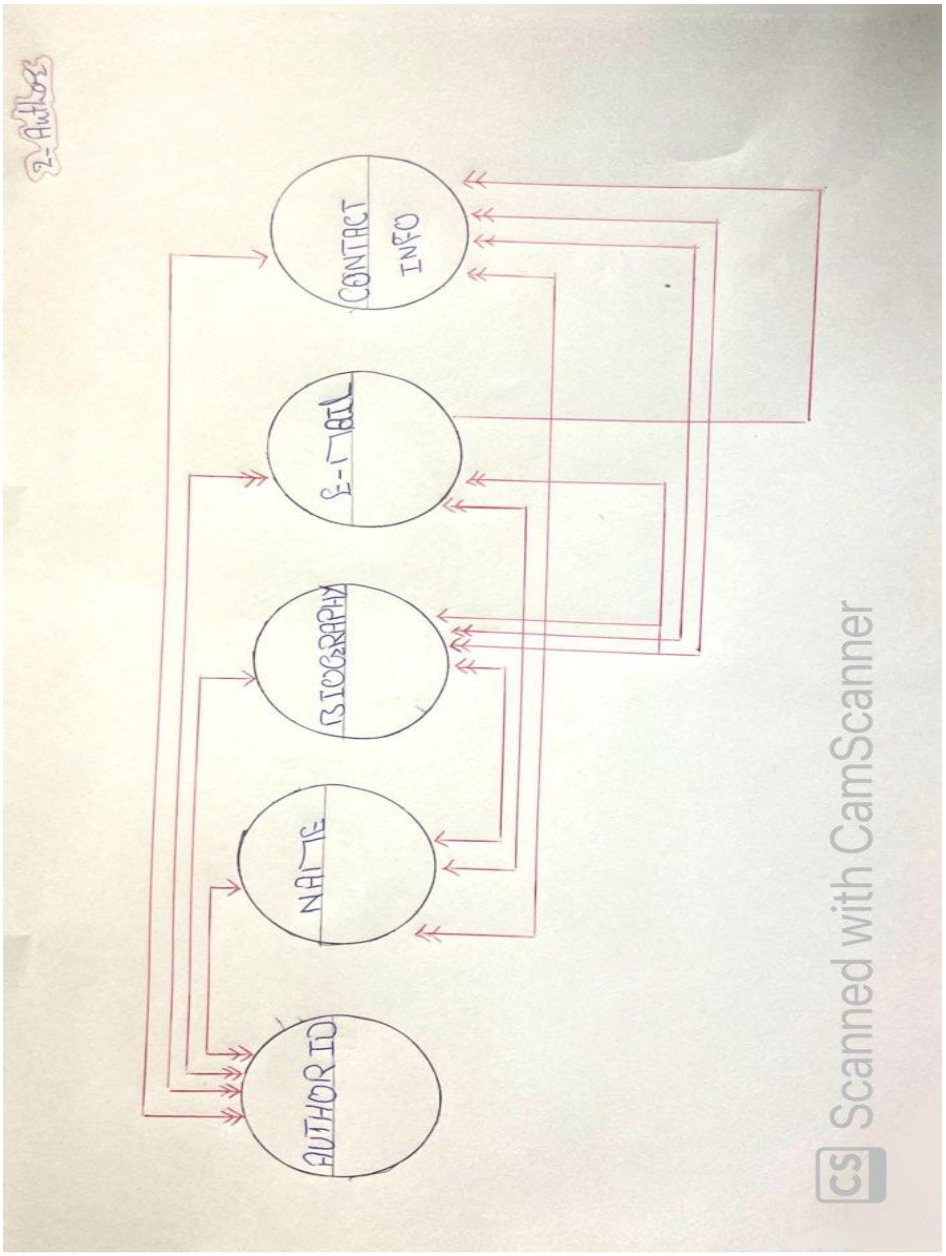
Candidate Key Attribute: MAGAZINE_ID

Alternate Key Attribute: NONE

Secondary Key Attribute: NONE

Foreign-Key Attribute: NONE

2. AUTHOR:



Primary Key Attribute: AUTHOR_ID

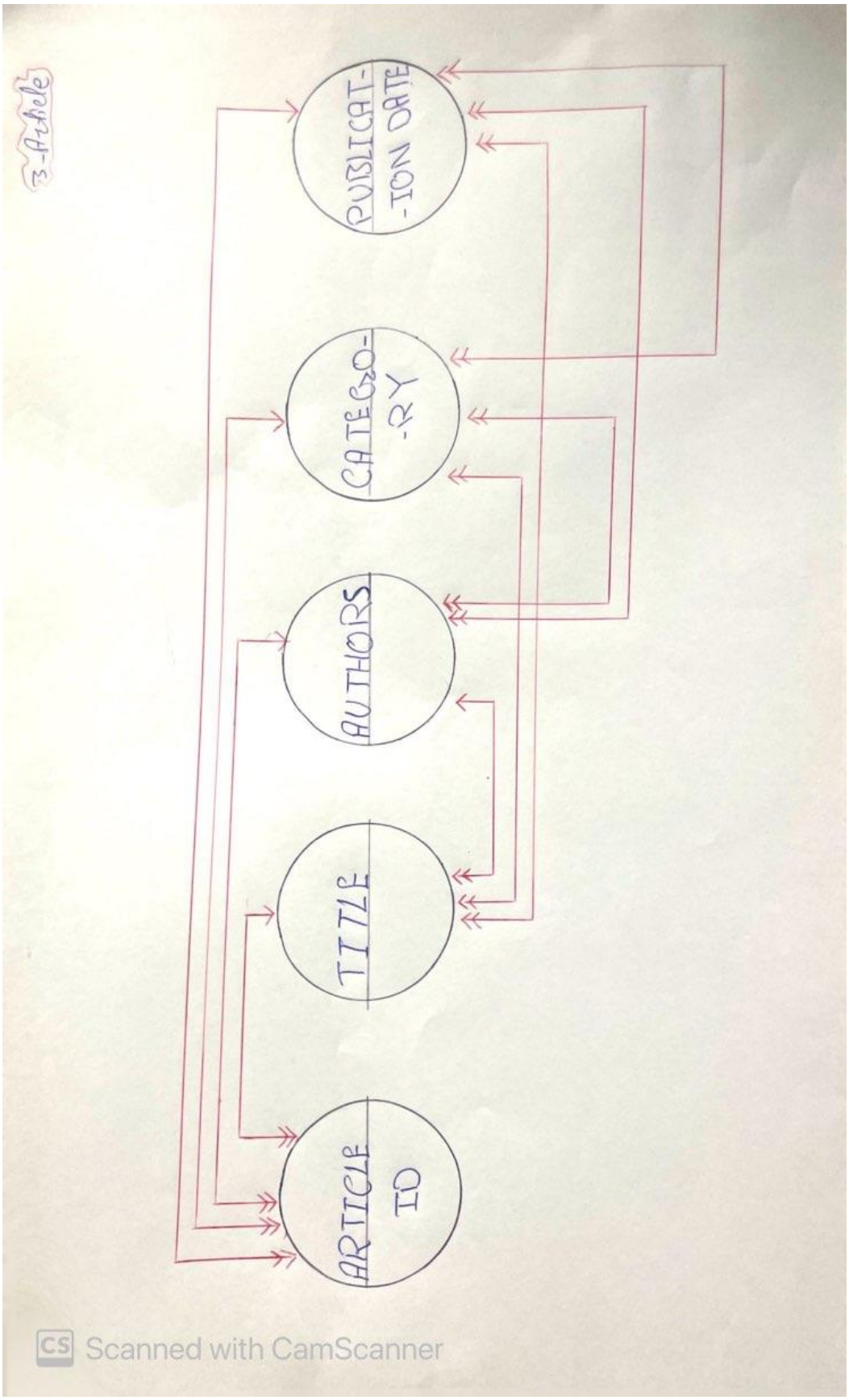
Candidate Key Attribute: AUTHOR_ID

Alternate Key Attribute: NONE

Secondary Key Attribute: NONE

Foreign-Key Attribute: NONE

3. ARTICL:



Primary Key Attribute: ARTICLE_ID

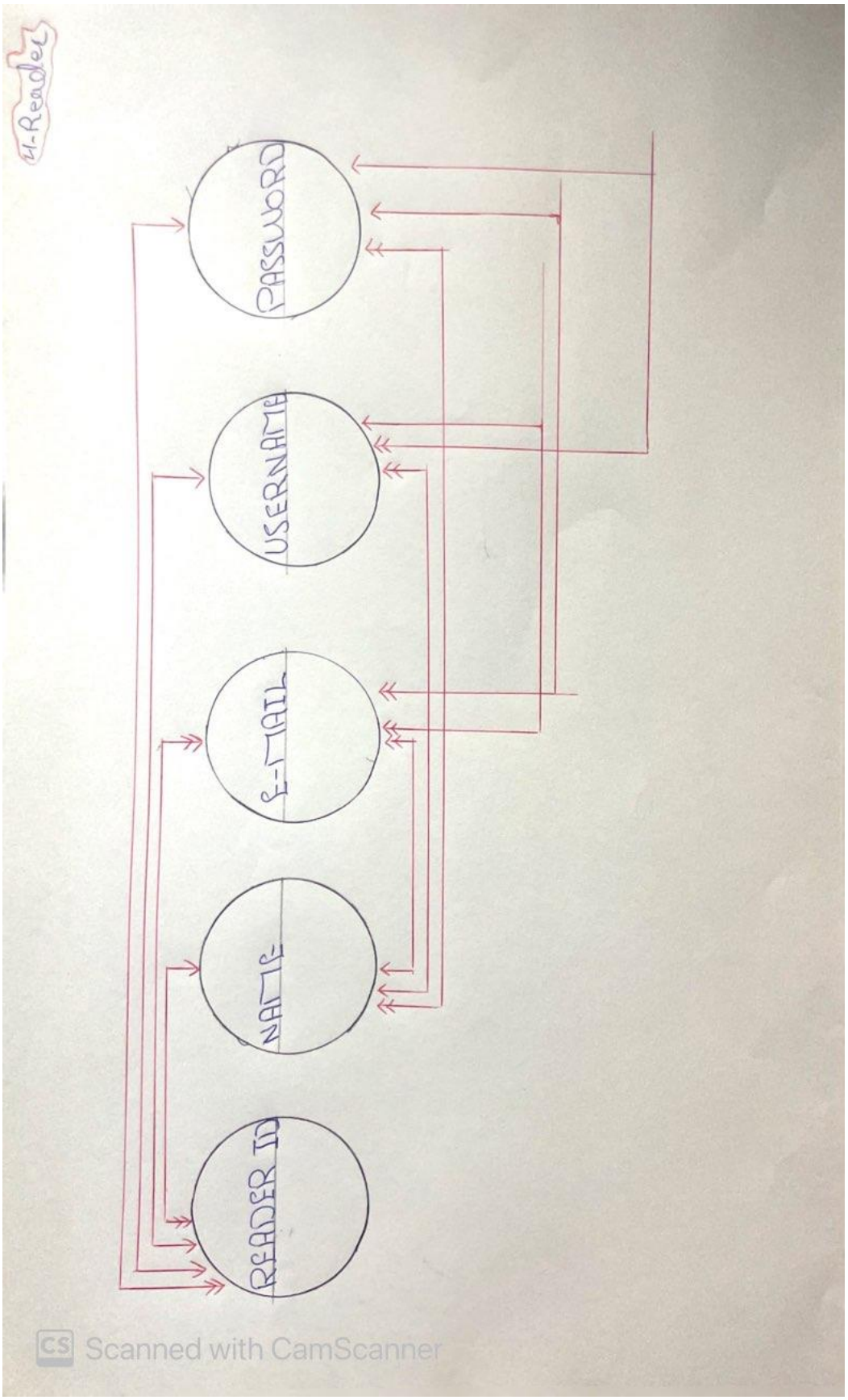
Candidate Key Attribute: ARTICLE_ID

Alternate Key Attribute: NONE

Secondary Key Attribute: NONE

Foreign-Key Attribute: AUTHOR_ID AND CATEGORY_ID

4. READER:


4-Reader
PASSWORD
USERNAME
E-MAIL
NAME
READER ID
Scanned with CamScanner

Primary Key Attribute: READER_ID

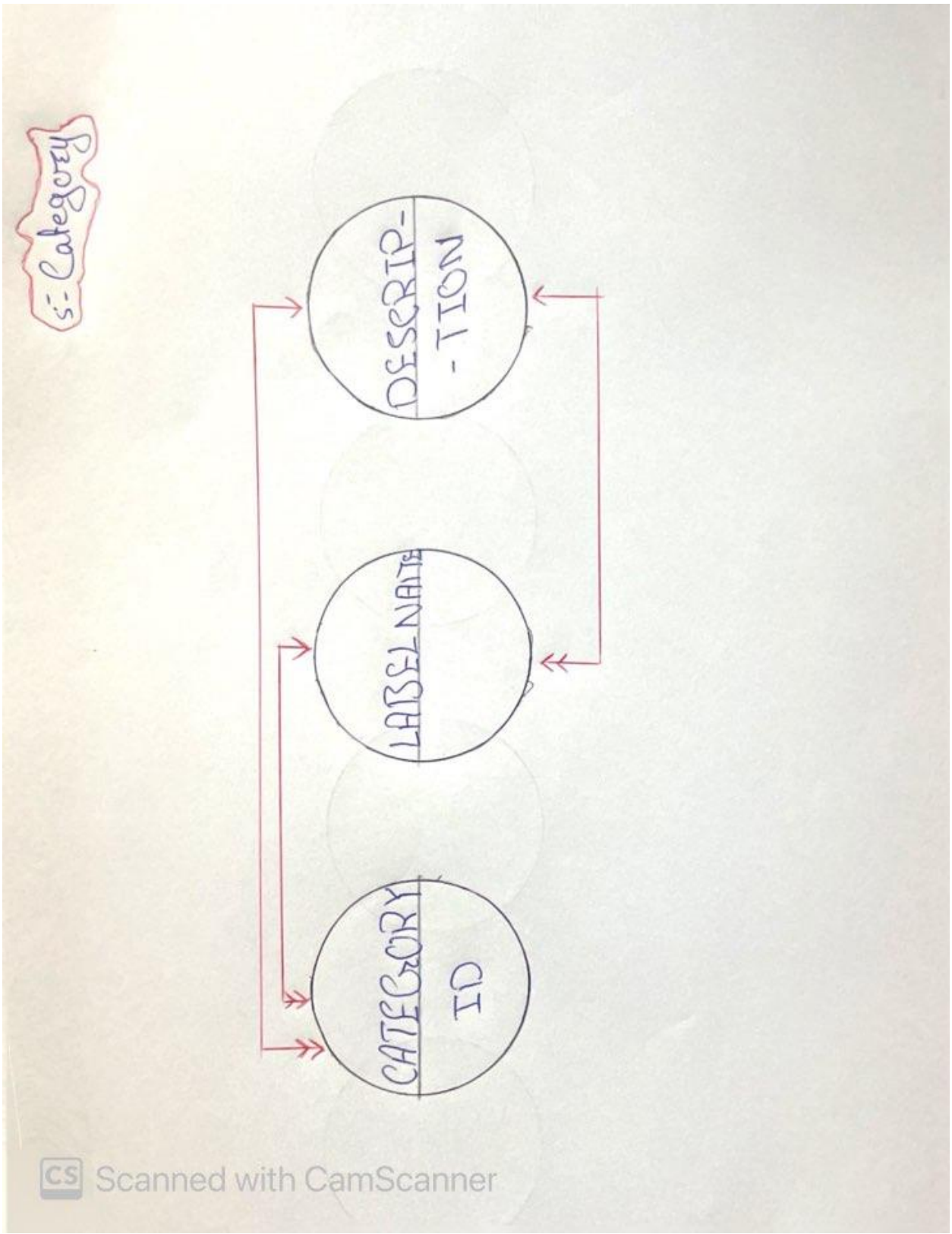
Candidate Key Attribute: READER_ID

Alternate Key Attribute: NONE

Secondary Key Attribute: NONE

Foreign-Key Attribute: NONE

5. CATEGORY:



Primary Key Attribute: CATEGORY_ID

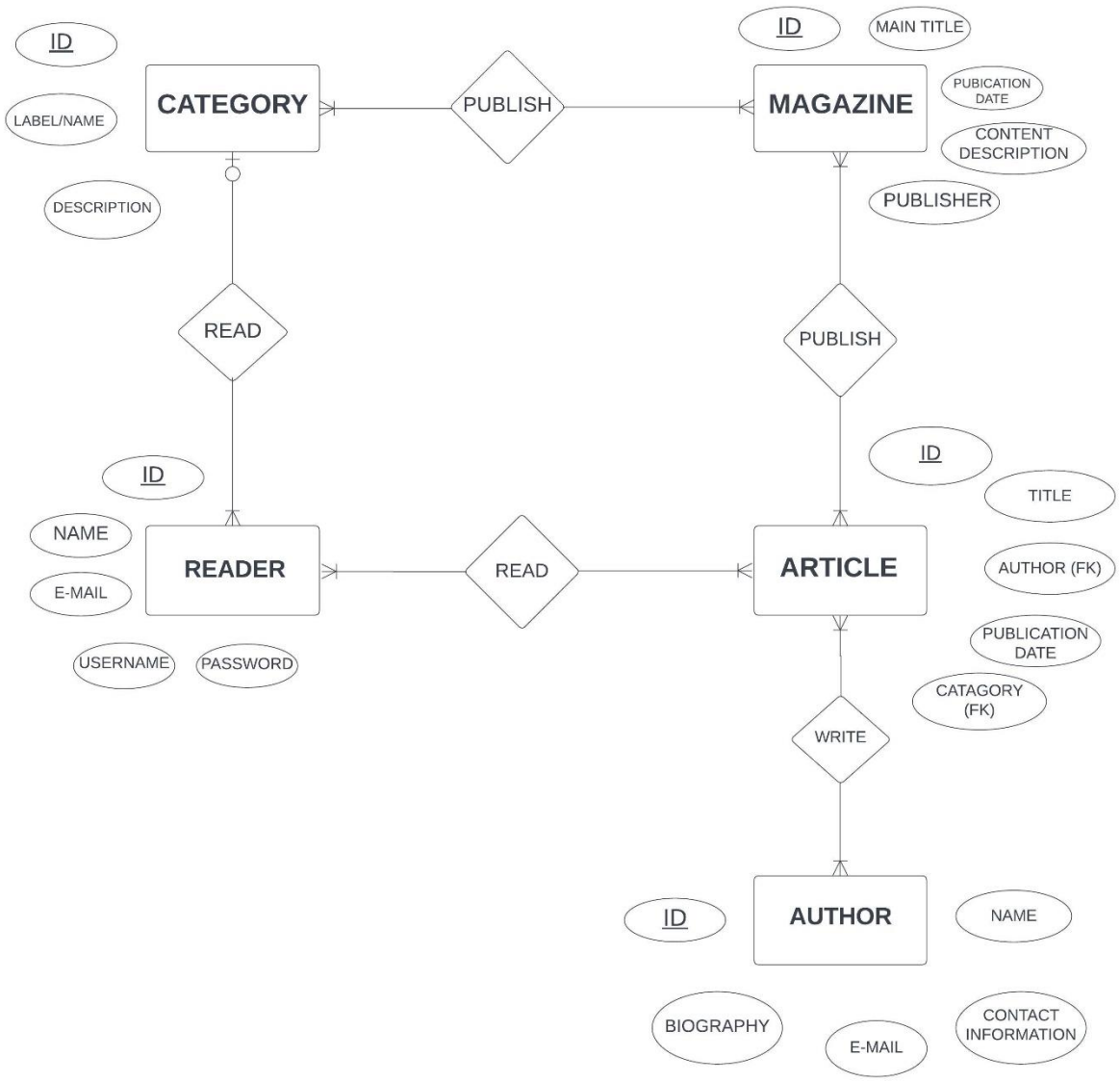
Candidate Key Attribute: CATEGORY_ID

Alternate Key Attribute: NONE

Secondary Key Attribute: NONE

Foreign-Key Attribute: NONE

4.7 Entity Relationship Diagram (ERD):



5.0 CHAPTER #05

5.1 Conclusion:

This project was submitted to Sir. Muhammad Imran Saeed Quraishi as final project of the semester. Many thanks to Sir. Imran Saeed that taught as this subject in top level so there will be no confusion in logic of this subject.

It was a simple DIGITAL / ONLINE MAGAZINE SYSTEM it will improve and we will provide new version of it as

- reader or user can share their own idea
- Users will be able to give comments, like, share.
- Reader, Author and Publisher will be able to repost their pervious ideas with new experiments or new achievements
- Physical branches that can manage the magazine and publish it physically as FREE
- A new platform will be in it that the user who use this platform will have real passive income
- Etc.…

As a Software Engineering student its my duty that find the best solution to my country members problem's and to connect them to the world easily So, this project as best on my country problems and Insha Allah I will improve it and I will implement this idea.

Search and find out your environment problems and implement your logic and idea best on software part to solve it.

NAME: MOHAMMAD IRFAN BALKHI

LINKEDIN ID: https://www.linkedin.com/in/mohammad-irfan-tufaan-b38733226

INSTAGRAM ID: https://instagram.com/mohammad_tufaan?igshid=OGQ5ZDc2ODk2ZA==

WhatsApp: +92 (0) 3030888388

E-mail: mohammad.irfan.balkhi@gmail.com