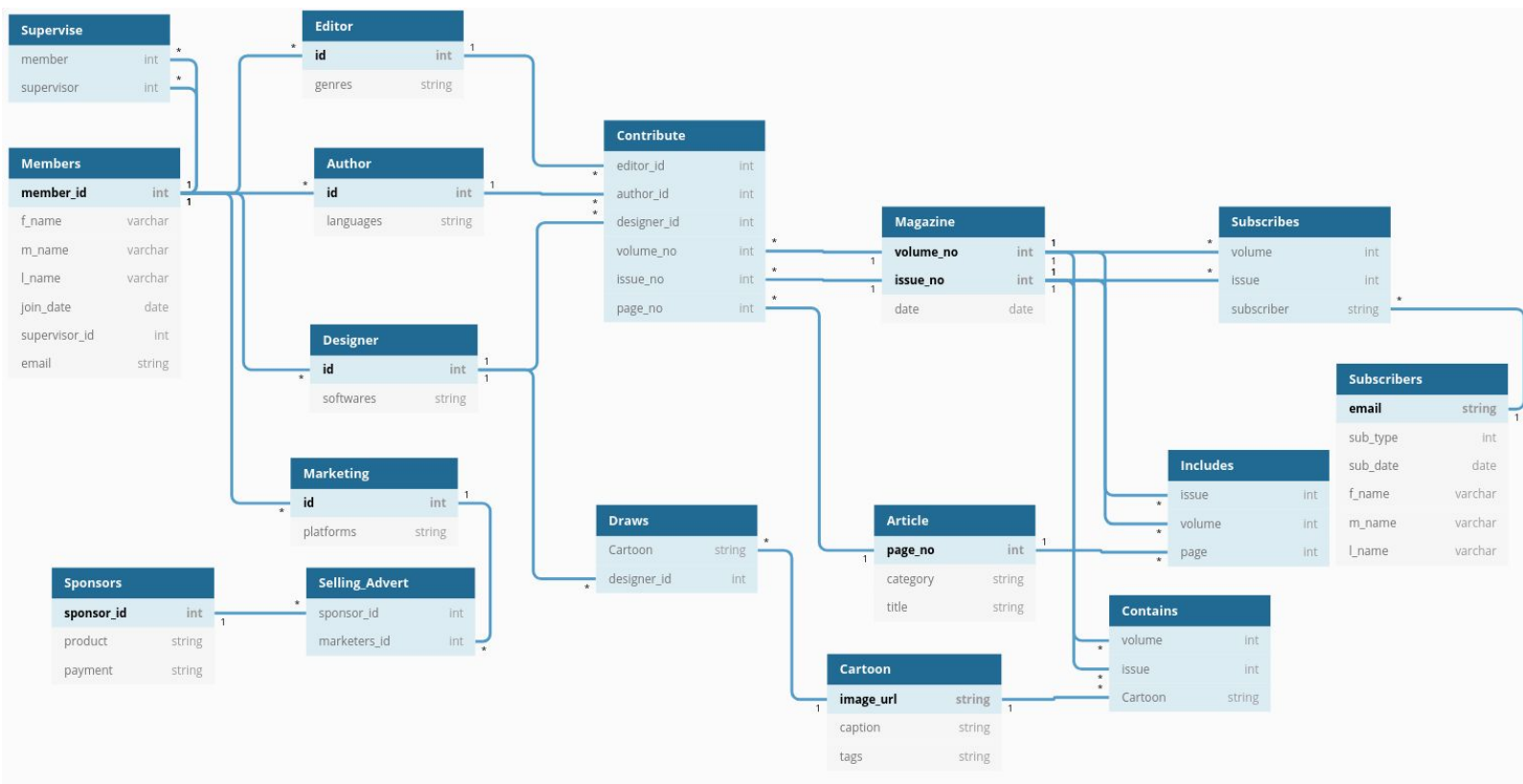# Data and Applications

Project Phase III

Team 16: Data Kedavra:

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Relationship Model:
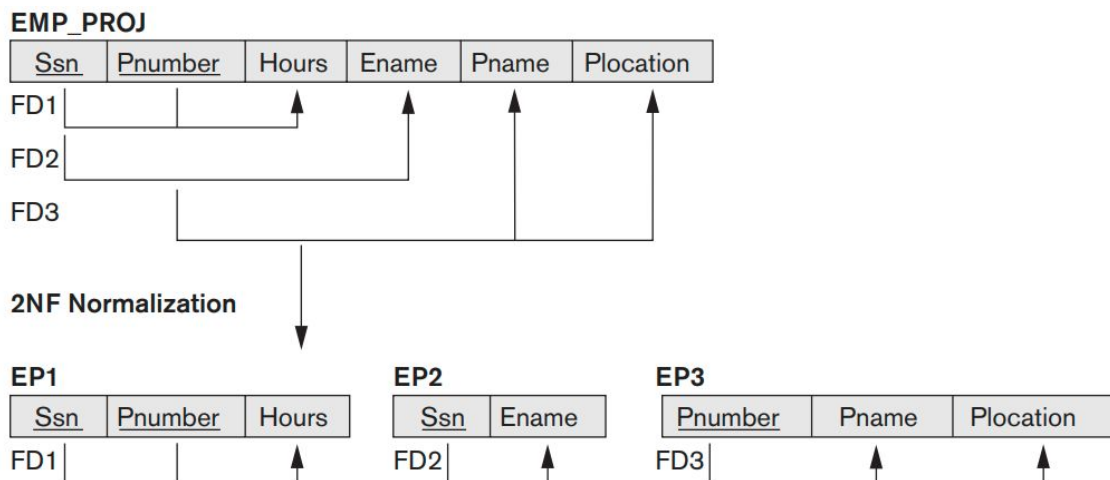
Normal Forms :

Normal Form 1:

As evident from the data types given in the above diagram we can tell that any given attribute can only take atomic values, thus the conditions for the First Normal Form are satisfied.

Normal Form 2:

In order to show the conditions in this normal form, let's take an example and relate all entities in our Database to it:
[The figure is the diagram 14.11 a) from the textbook]

EMP_PROJ

Ssn	Pnumber	Hours	Ename	Pname	Plocation

FD1
FD2
FD3

2NF Normalization

EP1

Ssn	Pnumber	Hours

FD1

EP2

Ssn	Ename

FD2

EP3

Pnumber	Pname	Plocation

FD3

- Member   It may be considered to be the extended form of EP3.
- Sponsor   It is similar to EP3.
- Editor   It is of the form EP2.
- Author   It is of the form EP2.
- Designer   It is of the form EP2.
- Marketing   It is of the form EP2.
- Magazine   It is of the form EP1.
- Article   It is of the form EP2.
- Cartoon   It is of the form EP2.
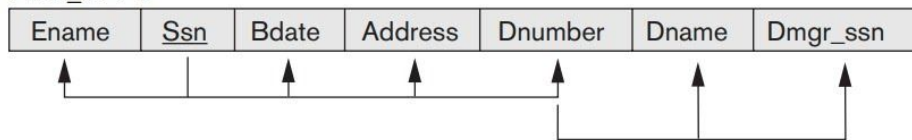- Subscribers It may be considered to be the extended form of EP3.

Normal Form 3:

For it to be qualified as normal form3, it needs to:
1. Satisfy all the conditions of Normal Form 2 - This is satisfied, as verified in the last section
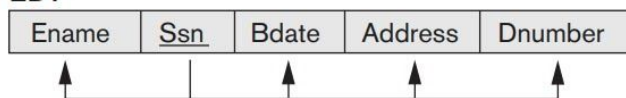2. There is no transitive dependency for non-prime attributes.

To verify the condition #2, we can check if all the entities are of the form ED1 (ED2 and ED1 have the same form) or they don't have a transitive dependency
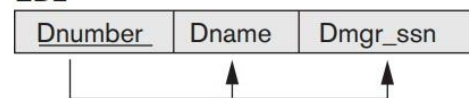
EMP_DEPT

Ename	Ssn	Bdate	Address	Dnumber	Dname	Dmgr_ssn

3NF Normalization

ED1

Ename	Ssn	Bdate	Address	Dnumber

ED2

Dnumber	Dname	Dmgr_ssn

- Member   It is of the form ED1.
- Sponsor   It is of the form ED1.
- Editor   It is of the form ED1.
- Author   It is of the form ED1.
- Designer   It is of the form ED1
- Marketing   It is of the form ED1.
- Magazine   It is of the form ED1.
- Article   It is of the form ED1.
- Cartoon   It is of the form ED1.
- Subscribers   It is of the form ED1.

Modifications (from Phase II):

1. Changed attribute **genre** to **language** for the subclass **Author**
2. Changed relation name **Subscribers** to **Subscribes** between the entities **Subscribers** and **Magazine**