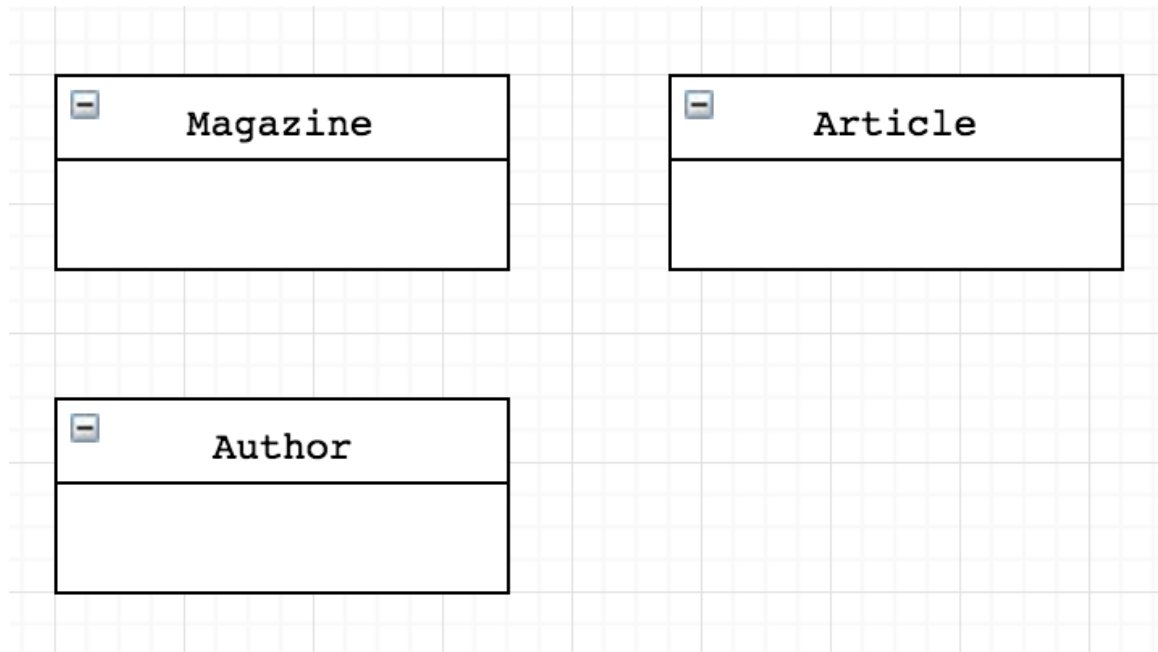# Lab work report 9 - Norm

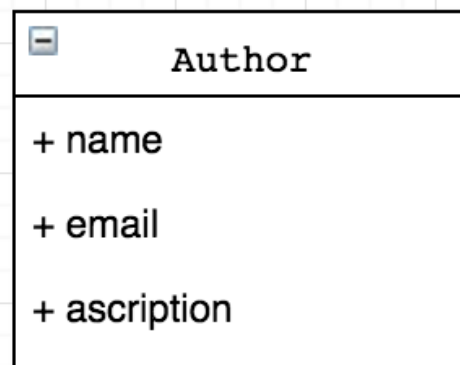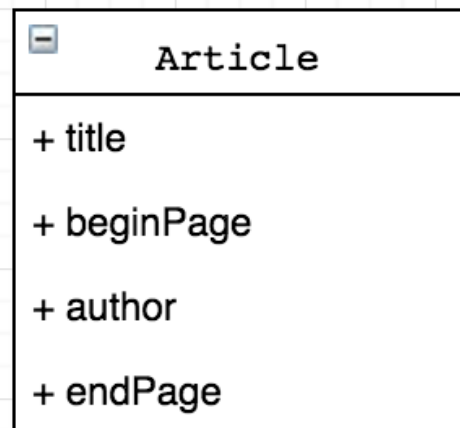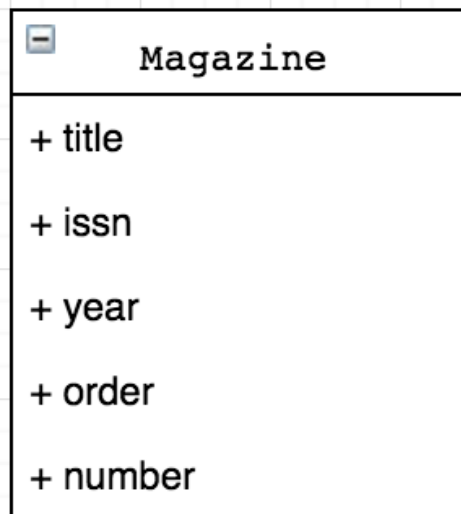Cao Anh Quan - ICT Master

November 13, 2016

The employee database satisfy the 3NF because:
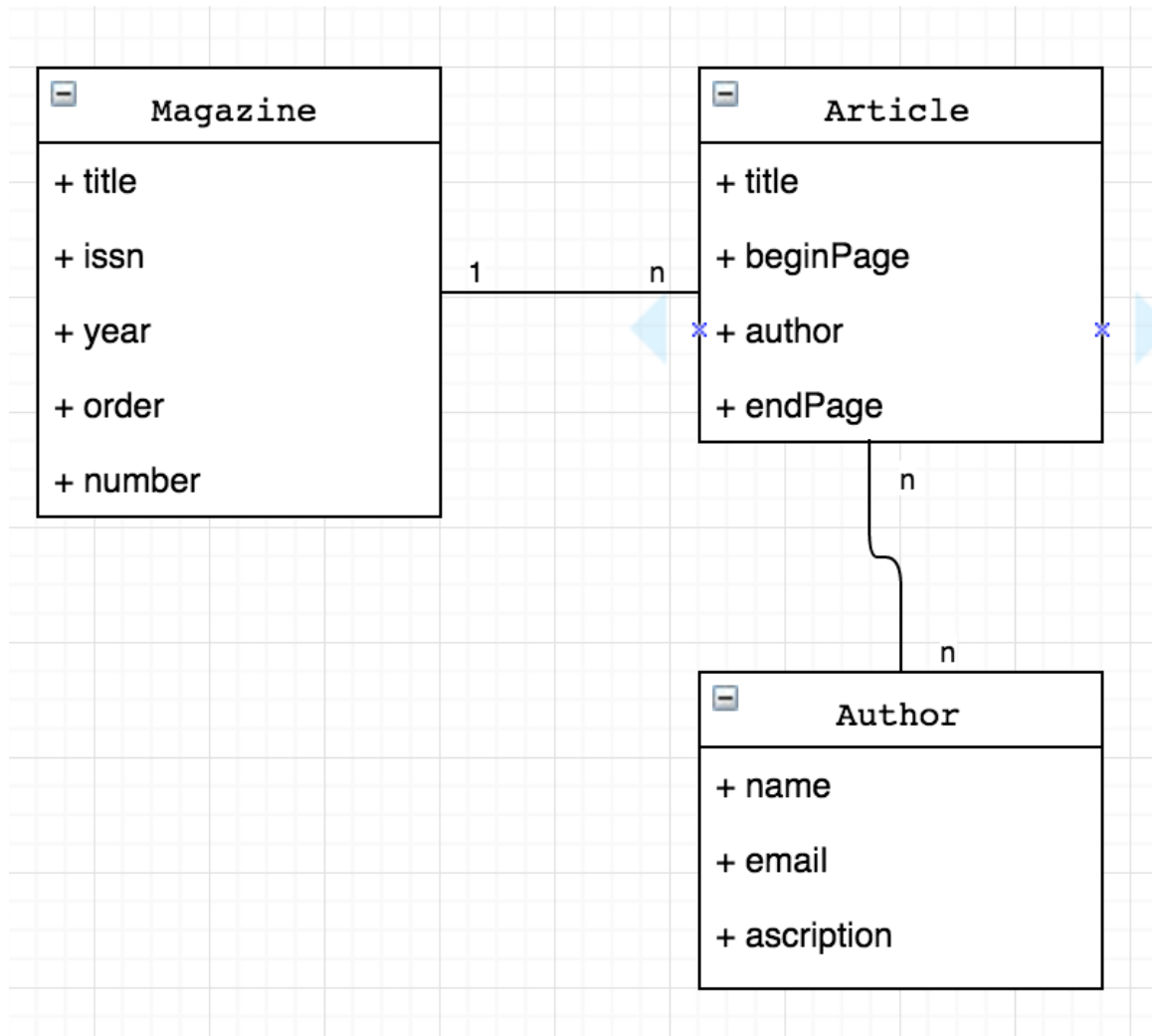
1. Determine *Concepts*

   - Magazine
   - Article
   - Author

2. Determine Attributes of each concept

```
 ┌─────────────────────────────┐        ┌─────────────────────────────┐
 │ ⊟      Magazine             │        │ ⊟       Article             │
 ├─────────────────────────────┤        ├─────────────────────────────┤
 │ + title                     │        │ + title                     │
 │                             │        │                             │
 │ + issn                      │        │ + beginPage                 │
 │                             │        │                             │
 │ + year                      │        │ + author                    │
 │                             │        │                             │
 │ + order                     │        │ + endPage                   │
 │                             │        └─────────────────────────────┘
 │ + number                    │
 └─────────────────────────────┘        ┌─────────────────────────────┐
                                        │ ⊟       Author              │
                                        ├─────────────────────────────┤
                                        │ + name                      │
                                        │                             │
                                        │ + email                     │
                                        │                             │
                                        │ + ascription                │
                                        └─────────────────────────────┘
```
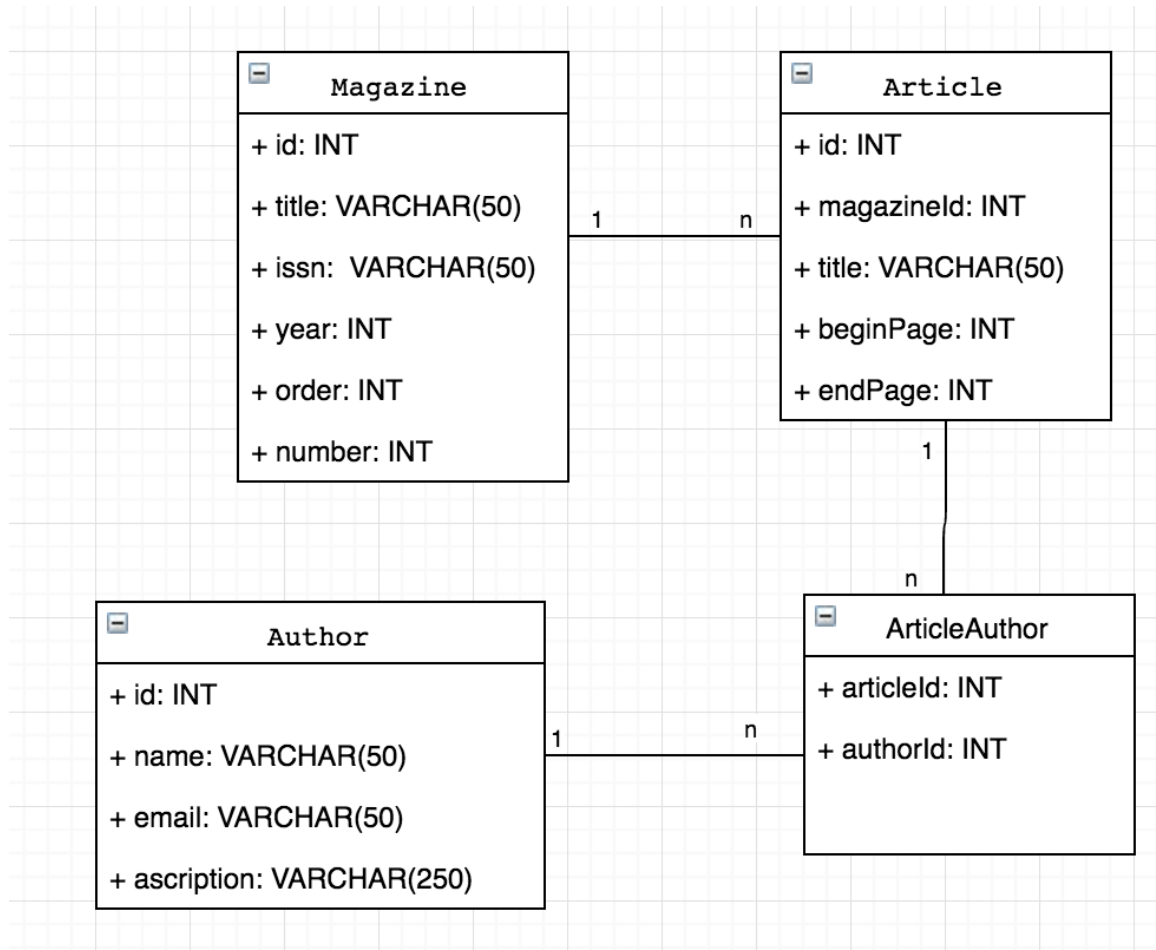
3. Determine links (relationships) between them

4. Determine types of each concept attribute
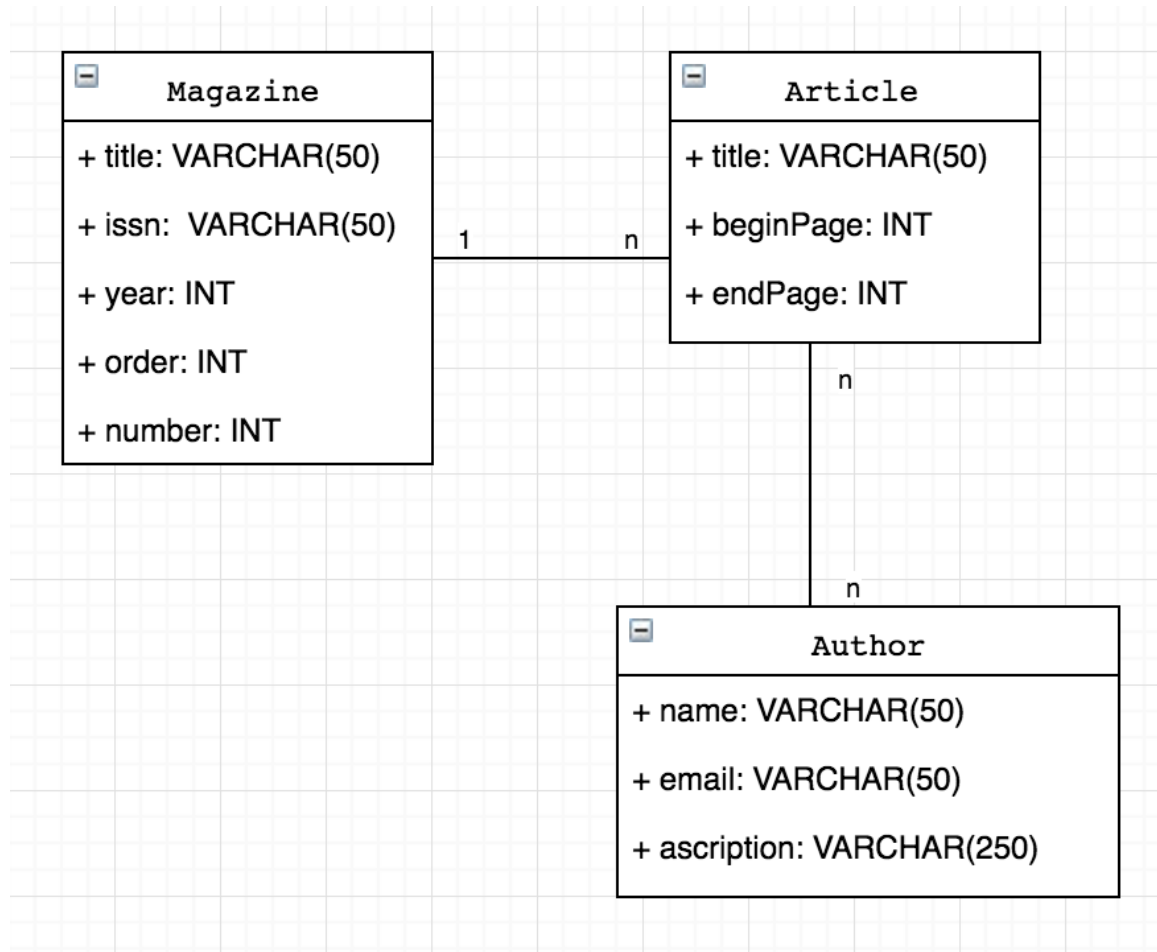
5. Solve foreign key links

6. Implementation

```
create database magazine;
use magazine;

CREATE TABLE Magazine (
        id INT NOT NULL AUTO_INCREMENT,
        title VARCHAR(50),
        issn VARCHAR(50),
        `year` INT,
        `order` INT,
        number INT,
        PRIMARY KEY (id)
```

```
);

CREATE TABLE Article (
        id INT NOT NULL AUTO_INCREMENT,
        magazineId INT NOT NULL,
        title VARCHAR(50),
        beginPage INT,
        endPage INT,
        PRIMARY KEY (id),
        FOREIGN KEY (magazineId) REFERENCES Magazine(id)
);

CREATE TABLE Author (
        id INT NOT NULL AUTO_INCREMENT,
        name VARCHAR(50),
        email VARCHAR(50),
        ascription VARCHAR(250),
        PRIMARY KEY (id)
);


CREATE TABLE ArticleAuthor (
        articleId INT NOT NULL,
        authorId INT NOT NULL,
        PRIMARY KEY (authorId, articleId),
        FOREIGN KEY (articleId) REFERENCES Article(id),
        FOREIGN KEY (authorId) REFERENCES Author(id)
);
```