

Report.10.DB.Design.Magazine

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1 Database design

1.1 Determine concepts

- Magazine
- Article
- Author

1.2 Determine attributes

- Magazine
 - title
 - ISSN
 - order_number
 - year
 - stored_number
- Article
 - title
 - page of beginning
 - page of ending
- Author
 - name
 - e-mail address
 - ascription

- Order
number

1.3 Determine links

- Article and Magazine (has)
- Author and Article (has)

1.4 Determine types

- Magazine
title VARCHAR(200)
ISSN VARCHAR(10)
order_number INT
stored_number (INT)
year (SMALLINT)
- Article
title VARCHAR(200)
page of beginning INT
page of ending INT
- Author
name VARCHAR(50)
e-mail address VARCHAR(50)
ascription VARCHAR(50)

1.5 Solve foreign key links

- Magazine
maga_id INT
order_number INT
title VARCHAR(200)
ISSN VARCHAR(10)
stored_number (INT)

- year (SMALLINT)
- Article
 - article_id INT
 - maga_id INT
 - title VARCHAR(200)
 - page of beginning INT
 - page of ending INT
- Author
 - author_id INT
 - name VARCHAR(50)
 - e-mail address VARCHAR(50)
 - ascription VARCHAR(50)
- AuthorArticle
 - author_id INT
 - article_id INT

2 Implementation

```
create database if not exists Magazines;
```

```
use magazines;
```

```
create table magazine (
  maga_id int not null auto_increment ,
  order_number int ,
  title varchar(200),
  issn varchar(10),
  stored_number int ,
  year smallint ,
  primary key (maga_id)
);
```

```
create table article (
  article_id int not null auto_increment ,
  maga_id int ,
  title varchar(200),
```

```

begin_page int,
end_page int,
primary key (article_id),
foreign key (maga_id) references magazine(maga_id)
);

create table author (
author_id int not null auto_increment,
name varchar(50),
email varchar(50),
ascription varchar(50),
primary key (author_id)
);

create table author_article (
author_id int,
article_id int,
foreign key (author_id) references author(author_id),
foreign key (article_id) references article(article_id)
);

```


3 Describe tables

```
mysql> show tables;
```

```
+-----+
| Tables_in_magazines |
+-----+
| article              |
| author               |
| author_article       |
| magazine             |
+-----+
4 rows in set (0.01 sec)
```

```
mysql> describe magazine;
```

```
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| maga_id        | int(11)       | NO   | PRI | NULL    | auto_increment |
| order_number   | int(11)       | YES  |     | NULL    |               |
| title          | varchar(200)  | YES  |     | NULL    |               |
| issn           | varchar(10)   | YES  |     | NULL    |               |
| stored_number  | int(11)       | YES  |     | NULL    |               |
| year           | smallint(6)   | YES  |     | NULL    |               |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

```
mysql> describe article;
```

```
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| article_id     | int(11)       | NO   | PRI | NULL    | auto_increment |
| maga_id        | int(11)       | YES  | MUL | NULL    |               |
| title          | varchar(200)  | YES  |     | NULL    |               |
| begin_page     | int(11)       | YES  |     | NULL    |               |
| end_page       | int(11)       | YES  |     | NULL    |               |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> describe author;
```

```
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| author_id      | int(11)       | NO   | PRI | NULL    | auto_increment |
| name           | varchar(50)   | YES  |     | NULL    |               |
| email          | varchar(50)   | YES  |     | NULL    |               |
| ascription     | varchar(50)   | YES  |     | NULL    |               |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> describe author_article;
```

```
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| author_id      | int(11)       | YES  | MUL | NULL    |               |
| article_id     | int(11)       | YES  | MUL | NULL    |               |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```