



## **Progetto Object Orientation e Basi di Dati**

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**Progettazione e sviluppo di una base di dati  
relazionale per la gestione di una biblioteca  
digitale**

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## Capitolo 1

# Descrizione e Analisi del Progetto

### 1.1 Descrizione e risoluzione sintetica

## Capitolo 2

# Progettazione concettuale

### 2.1 Class Diagram

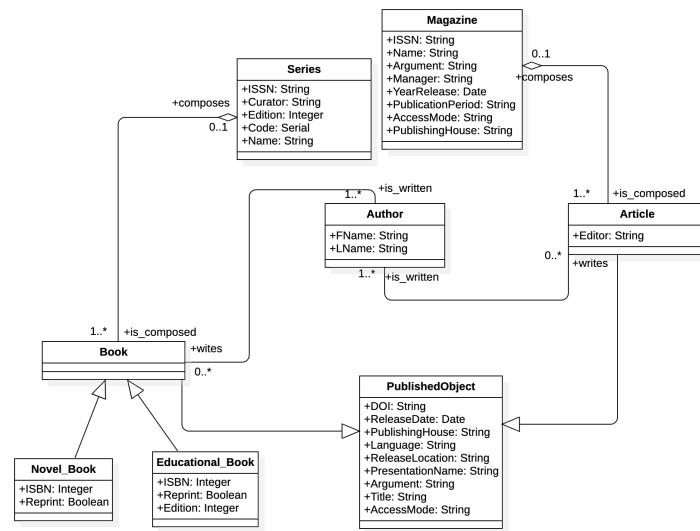


Figura 2.1:  
Class  
Diagram

## 2.2 Analisi della ristrutturazione del Class Diagram

### 2.2.1 Analisi delle ridondanze

### 2.2.2 Analisi degli identificativi

### 2.2.3 Rimozione degli attributi multipli

### 2.2.4 Rimozione degli attributi composti

### 2.2.5 Partizione/Accorpamento delle associazioni

### 2.2.6 Rimozione delle gerarchie

## 2.3 Class Diagram ristrutturato

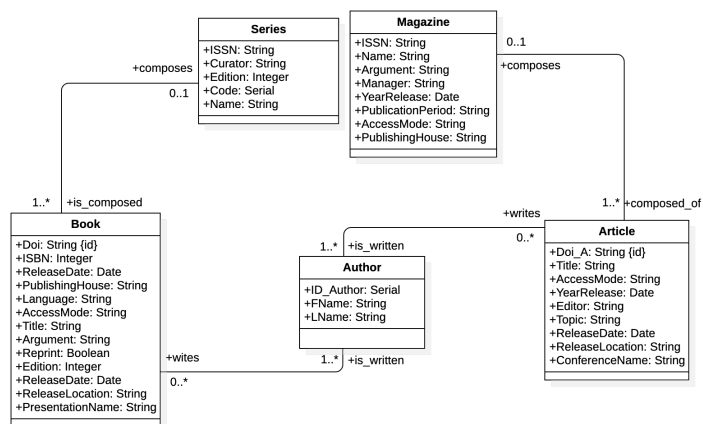


Figura 2.2:  
Class Dia-  
gram  
Ristrutturato

## 2.4 Dizionario delle classi

Tabella 2.1: Dizionario delle Classi

Class	Explanation	Attributes
Authors	Authors of books or articles	<p>ID_Author (Serial): Author's identification code</p> <p>FName (String): Author's first name</p> <p>LName (String): Author's last name</p>
Book	Books that can be novels or educational	<p>DOI (String): Digital object Identifier of the book.</p> <p>ISBN (Integer): Numerical classification sequence of the book.</p> <p>Edition (Integer): Edition number.</p> <p>AccessMode (AccessMode): Fruition method.</p> <p>ReleaseDate (Date): Publication date.</p> <p>PublishingHouse (String): Publishing house that printed the book.</p> <p>ReleaseLocation (String): Place of publication of the book.</p> <p>Language (String): Language in which the book is written.</p> <p>Title (String): Book title.</p> <p>Argument (String): Book topic.</p> <p>Reprint (Boolean): Parameter that identifies if the book is a reprint or not.</p> <p>PresentationName (String): Name of pesentation in which books are presented</p>



Series	Set of books	ISSN (Integer): International number that identifies serial publications. Edition (Integer): Edition number. Curator (String): Curator of the series. Code (Serial): Code assigned to the series. Name (String): Series' name .
Magazine	Set of articles	ISSN (Integer): International number that identifies serial publications. Name (String): Magazine's name Argument (String): Magazine topic. Manager (String): Event organizer. YearRelease (Date): Publication year. PublicationPeriod (String): Periodicity of publication. AccessMode (AccessMode): Fruition method.
Article	Articles of scientific research	DOI (String): Digital object Identifier of the book. Title (String): Book title. AccessMode (AccessMode): Fruition method. YearRelease (Date): Publication year. Editor (String):Article editor. ReleaseDate (Date): Publication date. ReleaseLocation (String): Place of publicationof the book. ConferenceName (String): Name of pesentation in which books are presented

## **2.5 Dizionario delle associazioni**

## Capitolo 3

# Schema logico

- Author  
(**IDAuthor**, FName, LName)
- Book  
(**DOI**, ISBN, PublishingHouse, Language, AccessMode, Title, Argument, Reprint, Edition, ReleaseDate, ReleaseLocation, PresentationName, AuthorID)
- Article  
(**DOI** , Title, AccessMode, YearRelease, Editor, Topic, ReleaseDate, ReleaseLocation, ConferenceName , AuthorID)
- Series  
(**ISSN**, Curator. Edition, Code, Name)
- Magazine  
(**ISSN**, Name , Argument, Manager, YearRelease, PublicationPeriod, AccessMode, PublishingHouse)

## Capitolo 4

# Progettazione Fisica

```
1 drop schema mtl cascade;
2 create schema mtl;
3
4 --create table mtl.author
5 create table mtl.author
6 (
7     CodAuthor serial
8         primary key,
9     FName    varchar(20),
10    LName    varchar(20)
11 );
12
13 -- create table mtl.series
14 create table mtl.series
15 (
16     ISSN_S issn primary key,
17     Curator names,
18     Edition int,
19     Code_S varchar(10),
20     Name_S names
21 );
22 --create table mtl.magazine
23 create table mtl.magazine
24 (
25     ISSN_M      issn primary key,
26     Name_M      names,
27     Argument     names,
28     Manager      names,
29     YearRelease  timestamp,
30     PublicationPeriod names,
31     AccessMode   access,
32     PublishingHouse names
33 );
```

```

34
35
36 --create table mtl.book
37 create table mtl.book
38 (
39     Doi_B          doi
40         primary key,
41     ISBN_B         varchar(13)
42         unique,
43     PublishingHouse names,
44     Language        names,
45     AccessMode      access,
46     Title           varchar(30),
47     Argument        names,
48     Reprint         boolean,
49     Edition         int,
50     ReleaseDate     timestamp,
51     ReleaseLocation location,
52     PresentationName names,
53     FK_Author       serial,
54     FK_Series       issn,
55
56     constraint BookFK_2 foreign key (Fk_Author) references mtl.Author
57         (CodAuthor) on delete cascade,
58     constraint BookFK_3 foreign key (FK_Series) references mtl.Series
59         (ISSN_S) on delete set null
60 );
61
62 --create table mtl.article
63 create table mtl.article
64 (
65     Doi_A          doi
66         primary key,
67     Title           varchar(40),
68     AccessMode      access,
69     YearRelease     timestamp,
70     Editor          names,
71     Topic           names,
72     ReleaseDate     timestamp,
73     ReleaseLocation location,
74     ConferenceName  varchar(50),
75     FK_Author       serial,
76     FK_Magazine     issn,
77
78     constraint ArticleFK_1 foreign key (FK_Author) references mtl.Author
79         (CodAuthor) on delete cascade,
80     constraint ArticleFK_2 foreign key (FK_Magazine) references
81         mtl.Magazine (ISSN_M) on delete set null
82 );

```

## Capitolo 5

### Caso d'uso e manuale