**DBS201**

**ASSIGNMENT**

Normalization of CanAmazing.com User Views

**Schema: ASSIGNKASF**

**Student Assignment Submission Form**

We declare that the attached assignment is wholly my/our own work in accordance with Seneca Academic Policy. No part of this assignment has been copied manually or electronically from any other source (including web sites) or distributed to other students.

Name(s) Username Signature()

1. **\_Leny Fe Fernandez DM201E12 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **\_Shweta Sharma \_\_\_\_\_\_\_\_\_\_\_DM201F17\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_**
3. **\_Charana Athauda\_\_\_\_\_\_\_\_\_\_\_DM201E01\_\_\_ \_\_\_\_\_\_\_**
4. **\_\_Gautam Kukreja\_\_\_\_\_\_\_\_\_\_\_DM201E21\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­\_**

**User View 1 – BOOKS BY ISBN**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ISBN\_NO | TITLE | COST | PRICE | CATEGORY | BOOKFORMAT | PAGES | MINS |

**Normalization**

UNF: BOOKS **[ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PAGE, MINS]

1NF: BOOKS **[ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PAGE, MINS]

2NF: BOOKS **[ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PAGE, MINS]

3NF: BOOKS **[ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PAGE, MINS]

**User View 2 – Book Information**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| INVNO | ISBN\_NO | CUSTOMER | ADDRESS | DATE | PUBLISHER | OWNER\_PUBLISHER | QTY | PRICE |

**Normalization**

UNF: BOOK\_INFO ( Customer, Address, (**INVNO,** Date, (**ISBN\_No,** Publisher, PUBLISHOWNER, Qty, Price)

1NF: BOOK\_INFO **[INVNO(PK)**, **ISBN\_NO(PK)**, CUSTOMER, ADDRESS, DATE, PUBLISHER, OWNER\_PUBLISHER, QTY, PRICE]

2NF:BOOK\_INFO**[INVNO(PK), ISBN\_NO(PK),** QTY, PRICE**]**

BOOKS **[ISBN\_NO(PK),**  PUBLISHER, OWNER\_PUBLISHER**]**

INVOICE **[INVNO(PK),** CUSTOMER, ADDRESS, DATE**]**

3NF: BOOK\_INFO**[INVNO(PK), ISBN\_NO(PK),** QTY, PRICE**]**

BOOKS **[ISBN\_NO(PK),**  **PUBLISHER(FK)]**

INVOICE **[INVNO(PK), CUSTOMER(FK),** DATE**]**

PUBLISHER**[PUBLISHER(PK)**, , PUBLISHOWNER**]**

CUSTOMER**[CUSTOMER(PK)**, ADDRESS**]**

**USER VIEW 3 – BOOK PRIZES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PRIZE | AUTHOR | ISBN | BOOK\_TITLE | PRIZE\_AMOUNT |

**Normalization:**

UNF: AUTHORPRIZE (**Prize(PK)**, ISBN, Book\_Title, Prize\_Amount, (**Author(s)(PK)**))

1NF: AUTHORPRIZE [ **PRIZE(PK)**, **AUTHOR(PK),** ISBN\_NO, BOOK\_TITLE, PRIZE\_AMOUNT]

2NF: AUTHORPRIZE[**PRIZE(PK), AUTHOR(PK**]

PRIZE**[PRIZE(PK),** ISBN\_NO, BOOK\_TITLE, PRIZE\_AMOUNT**]**

AUTHOR**[AUTHOR(PK)]**

3NF: AUTHORPRIZE[**PRIZE(PK), AUTHOR(PK**)]

PRIZE**[PRIZE(PK), ISBN\_NO(FK)**, PRIZE\_AMOUNT**]**

AUTHOR**[AUTHOR]**

BOOKS**[ISBN\_NO(PK)**, BOOK\_TITLE]

**USER VIEW 4 – AUTHORS, BOOKS, AND AUTHORBOOKS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| AUTHORNO | BOOKS | NAME | DOB | MILLION\_SOLD | CATEGORY |

|  |  |  |
| --- | --- | --- |
| AUTHORNO | LANGUAGE | YEAR |

**Normalization:**

UNF: AUTHORBOOK ( **AUTHORNO(PK)**, NAME, DOB, MILLION\_SOLD ( **BOOKS(PK)**, Category))

UNF: AUTHORLANGUAGE (**AUTHORNO(PK),**  (**LANGUAGE(PK),** YEAR))

1NF: AUTHORBOOK **[AUTHORNO(PK), BOOKS(PK),** NAME, DOB, MILLION\_SOLD, CATEGORY]

AUTHORLANGUAGE [**AUTHORNO(PK),**  **LANGUAGE(PK),** YEAR]

2NF: AUTHORBOOK **[AUTHORNO(PK), BOOKS(PK)**]

AUTHORLANGUAGE [**AUTHORNO(PK),**  **LANGUAGE(PK),** YEAR]

AUTHOR**[AUTHORNO(PK),** NAME, DOB, MILLION\_SOLD**]**

BOOKS **[BOOKS**(PK), CATEGORY]

3NF: AUTHORBOOK **[AUTHORNO(PK), BOOKS(PK)**]

AUTHORLANGUAGE [**AUTHORNO(PK),**  **LANGUAGE(PK),** YEAR]

AUTHOR**[AUTHORNO(PK),** NAME, DOB, MILLION\_SOLD**]**

BOOKS **[BOOKS**(PK), CATEGORY

**User View 5 – Invoice**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **INVNO** | **ISBN\_NO** | **CUSTNO** | **NAME** | **ADDRESS** | **DATE** | **QTY** | **TITLE** | **WAREHOUSE** | **UNITPRICE** | **SHIPPING\_OPTION** |

**Normalization**

UNF: Invoice\_Info ( **INVNO(PK)**, CUSTNO, Name, Address, Date, (QTY, **ISBN\_NO(PK)**, TITLE, Warehouse, Price, Charge, Shipping\_Options))

1NF:INVOICE\_INFO **[INVNO(PK), ISBN\_NO(PK]**, CUSTNO, NAME, ADDRESS, DATE, QTY, TITLE, WAREHOUSE, UNITPRICE, SHIPPING\_OPTION]

2NF: INVOICE**[INVNO(PK)**, CUSTNO, NAME, ADDRESS, DATE**]**

BOOKS**[ISBN\_NO(PK),** TITLE, WAREHOUSE**]**

INVOICE\_INFO **[ INVNO(PK), ISBN\_NO(PK]**,QTY, UNITPRICE, SHIPPING\_OPTIONS**]**

3NF: INVOICE **[INVNO(PK)**, **CUSTNO(FK),** DATE**]**

BOOKS **[ISBN\_NO(PK),** TITLE, WAREHOUSE**]**

INVOICE\_INFO **[INVNO(PK), ISBN\_NO(PK]**,QTY, UNITPRICE, SHIPPING\_OPTIONS**]**

CUSTOMER **[CUSTNO(PK],** NAME, ADDRESS]

SHIPPING**[SHIPNO(PK),** COST, TYPE**]**

**User View 6 – INVOICE HISTORY BY CUSTOMER**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **INVNO** | **ISBN\_NO** | **CUSTOMER** | **ADDRESS** | **DATE** | **TITLE** | **QTY** | **SHIPPING\_CHARGE** | **UNITPRICE** |

**Normalization**

UNF: Invoice\_History (Customer, Address, (**INVNO,** Date, (**ISBN**, Title, Qty, Shipping\_Charge, UnitPrice)))

1NF: INVOICE\_HISTORY **[INVNO(PK), ISBN\_NO(PK]**, CUSTOMER, ADDRESS, DATE, TITLE, QTY, SHIPPING\_CHARGES, UNITPRICE]

2NF: INVOICE**[INVNO(PK)**, CUSTOMER, ADDRESS, DATE**]**

BOOKS**[ISBN\_NO(PK),** TITLE**]**

INVOICE\_HISTORY **[INVNO(PK), ISBN\_NO(PK]**, QTY, SHIPPING\_CHARGE, UNITPRICE]

3NF: INVOICE**[INVNO(PK)**, **CUSTOMER(FK)**, DATE**]**

BOOKS**[ISBN\_NO(PK),** TITLE**]**

INVOICE\_HISTORY **[INVNO(PK), ISBN\_NO(PK]**, QTY, SHIPPING\_CHARGE, UNITPRICE]

CUSTOMER**[CUSTOMER (PK],** ADDRESS]

**Merging Tables**

**3NF from all User Views**

**1A:** BOOKS **[ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PAGE, MINS]

**2A:** BOOK\_INFO**[INVNO(PK), ISBN\_NO(PK),** QTY, PRICE**]**

**2B:** BOOKS **[ISBN\_NO(PK),**  **PUBLISHER(FK)]**

**2C:** INVOICE **[INVNO(PK), CUSTOMER(FK),** DATE**]**

**2D:** PUBLISHER**[PUBLISHER(PK)**, , PUBLISHOWNER**]**

**2E:** CUSTOMER**[CUSTOMER(PK)**, ADDRESS**]**

**3A:** AUTHORPRIZE[**PRIZE(PK), AUTHOR(PK**)]

**3B:** PRIZE**[PRIZE(PK), ISBN\_NO(FK)**, PRIZE\_AMOUNT**]**

**3C:** AUTHOR**[AUTHOR]**

**3D:** BOOKS**[ISBN\_NO(PK)**, BOOK\_TITLE]

**4A:** AUTHORBOOK **[AUTHORNO(PK), BOOKS(PK)**]

**4B:** AUTHORLANGUAGE [**AUTHORNO(PK),**  **LANGUAGE(PK),** YEAR]

**4C:** AUTHOR**[AUTHORNO(PK),** NAME, DOB, MILLION\_SOLD**]**

**4D:** BOOKS **[BOOKS**(PK), CATEGORY]

**5A:** INVOICE **[INVNO(PK)**, **CUSTNO(FK),** DATE**]**

**5B:** BOOKS **[ISBN\_NO(PK),** TITLE, WAREHOUSE**]**

**5C:** INVOICE\_INFO **[INVNO(PK), ISBN\_NO(PK]**,QTY, UNITPRICE, SHIPPING\_OPTIONS**]**

**5D:** CUSTOMER **[CUSTNO(PK],** NAME, ADDRESS]

**5E:** SHIPPING**[SHIPPING\_NO(PK),** COST, GUARANTEE**]**

**6A:** INVOICE**[INVNO(PK)**, **CUSTOMER(FK)**, DATE**]**

**6B:** BOOKS**[ISBN\_NO(PK),** TITLE**]**

**6C:** INVOICE\_HISTORY **[INVNO(PK), ISBN\_NO(PK]**, QTY, SHIPPING\_CHARGES, UNITPRICE]

**6D:** CUSTOMER**[CUSTOMER (PK],** ADDRESS]

**TABLES WITH COMPOSITE KEYS**

**2A:** BOOK\_INFO**[INVNO(PK), ISBN\_NO(PK),** QTY, PRICE**]**

**3A:** AUTHORPRIZE[**PRIZE(PK), AUTHOR(PK**)]

**4A:** AUTHORBOOK **[AUTHORNO(PK), BOOKS(PK)**]

**4B:** AUTHORLANGUAGE [**AUTHORNO(PK),**  **LANGUAGE(PK),** YEAR]

**5C:** INVOICE\_INFO **[INVNO(PK), ISBN\_NO(PK]**,QTY, UNITPRICE, SHIPPING\_OPTIONS**]**

**6C:** INVOICE\_HISTORY **[INVNO(PK), ISBN\_NO(PK]**, QTY, SHIPPING\_CHARGES, UNITPRICE]

**TABLES WITH SAME PRIMARY KEY**

**1A:** BOOKS **[ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PAGE, MINS]

**2B:** BOOKS **[ISBN\_NO(PK),**  **PUBLISHER(FK)]**

**3D:** BOOKS**[ISBN\_NO(PK)**, BOOK\_TITLE]

**4C:** BOOKS **[BOOKS**(PK), CATEGORY]

**5B:** BOOKS **[ISBN\_NO(PK),** TITLE, WAREHOUSE**]**

**6B:** BOOKS**[ISBN\_NO(PK),** TITLE**]**

**MERGE:** BOOKS [**ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PUBLISHER, WAREHOUSE, PAGE, MINS]

**2C:** INVOICE **[INVNO(PK), CUSTOMER(FK),** DATE**]**

**5A:** INVOICE **[INVNO(PK)**, **CUSTNO(FK),** DATE**]**

**6A:** INVOICE**[INVNO(PK)**, **CUSTOMER(FK)**, DATE**]**

**MERGE:** INVOICE **[INVNO(PK), CUSTOMER(FK),** DATE**]**

**2E:** CUSTOMER**[CUSTOMER(PK)**, ADDRESS**]**

**5D:** CUSTOMER **[CUSTNO(PK],** NAME, ADDRESS]

**6D:** CUSTOMER**[CUSTOMER (PK],** ADDRESS]

**MERGE:** CUSTOMER **[CUSTNO(PK],** NAME, ADDRESS]

**3C:** AUTHOR**[AUTHOR]**

**4B:** AUTHOR**[AUTHORNO(PK),** NAME, DOB, MILLION\_SOLD**]**

**MERGE:** AUTHOR**[AUTHORNO(PK),** NAME, DOB, MILLION\_SOLD**]**

**5C:** INVOICE\_INFO **[INVNO(PK), ISBN\_NO(PK]**,QTY, UNITPRICE, SHIPPING\_OPTIONS**]**

**6C:** INVOICE\_HISTORY **[INVNO(PK), ISBN\_NO(PK]**, QTY, SHIPPING\_CHARGES, UNITPRICE]

**2A:** BOOK\_INFO**[INVNO(PK), ISBN\_NO(PK),** QTY, PRICE**]**

**MERGE:** INVOICE\_INFO **[INVNO(PK), ISBN\_NO(PK]**,QTY, UNITPRICE, SHIPPING\_OPTIONS, SHIPPING\_CHARGES**]**

**MERGED TABLES**

BOOKS [**ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PUBLISHER, WAREHOUSE, PAGE, MINS]

INVOICE **[INVNO(PK), CUSTNO(FK),** DATE**]**

CUSTOMER **[CUSTNO(PK],** NAME, ADDRESS]

AUTHOR**[AUTHORNO(PK),** FNAME, LNAME, DOB, MILLION\_SOLD**]**

INVOICE\_INFO **[INVNO(PK), ISBN\_NO(PK]**,QTY, UNITPRICE,

SHIPPING\_OPTIONS, SHIPPING\_CHARGES**]**

AUTHORPRIZE[**PRIZE(PK), AUTHOR(PK**)]

AUTHORBOOK **[AUTHORNO(PK), BOOKS(PK),** LANGUAGE,

YEAR]

PUBLISHER**[PUBLISHER(PK)**, PUBLISHOWNER**]**

PRIZE**[PRIZE(PK), ISBN\_NO(FK)**, PRIZE\_AMOUNT**]**

SHIPPING**[SHIPPING\_NO(PK),** COST, GUARANTEE**]**

**EXPLODE MULTI-FIELD ATTRIBUTE**

PUBLISHER**[PUBLISHER(PK)**, PUBLISHOWNER**]**

1. PUBLISHOWNER[**OWNERNO(PK),** OWNERNAME]

**FINAL:** PUBLISHER**[PUBNO(PK)**, PUBLISHER\_NAME, OWNERNO(FK)**]**

BOOKS [**ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGORY, BOOKFORMAT, PUBLISHER, WAREHOUSE, PAGE, MINS]

1. CATEGORY [**CATEGNO(PK),** CATEGNAME**]**
2. BOOKFORMAT[**FORMATNO(PK),** FORMATTYPE]

**NOTE:** Since there are empty fields in fields PAGE and MINS, separate them in different tables

1. BOOK\_DIGITAL[**ISBN\_NO(FK), FORMATNO(FK),** MINS]
2. BOOK\_PAPER [**ISBN\_NO(FK), FORMATNO(FK),** PAGES]
3. WAREHOUSE[**WARENO(PK)**, CITY]

**FINAL:** BOOKS [**ISBN\_NO(PK),** TITLE, COST, PRICE, CATEGNO(FK), BOOKFORMATNO(FK), PUBNO(FK), WARENO(FK)]

CUSTOMER **[CUSTNO(PK],** NAME, ADDRESS]

1. ADDRESS[**ZIPCODE(PK)**, APARTNO, STREET, CITY, PROVINCE]

**FINAL:** CUSTOMER **[CUSTNO(PK],** FNAME,LNAME ZIPCODE(FK), EMAIL]

**FINAL TABLE**

1. ADDRESS[**ZIPCODE(PK)**, APARTNO, STREET, CITY, PROVINCE]
2. AUTHOR**[AUTHORNO(PK),** FNAME, LNAME, DOB, MILLION\_SOLD**]**
3. AUTHORBOOK**[AUTHORNO(PK)(FK), ISBN\_NO(PK)(FK),**

LANGUAGE, YEAR]

1. AUTHORLANGUAGE [**AUTHORNO(PK)(FK),**  **LANGUAGE(PK),** YEAR]
2. AUTHORPRIZE[**PRIZENO(PK)(FK), AUTHORNO(PK**)**(FK)]**
3. BOOKFORMAT[**FORMATNO(PK),** FORMATTYPE]
4. BOOKS [**ISBN\_NO(PK),** TITLE, COST, PRICE, **CATEGNO(FK)**,

**FORMATNO(FK)**, **PUBNO(FK),** **WARENO(FK)**]

1. CATEGORY [**CATEGNO(PK),** CATEGNAME**]**
2. CUSTOMER **[CUSTNO(PK],** FNAME,LNAME **ZIPCODE(FK)**, EMAIL]
3. DIGITALBOOK[**ISBN\_NO(PK)(FK), FORMATNO(PK)(FK),** MINS]
4. INVOICE **[INVNO(PK), CUSTNO(FK),** DATE**]**
5. INVOICE\_INFO **[INVNO(PK)(FK), ISBN\_NO(PK)(FK)**,QTY, UNITPRICE,

**SHIPNO(FK)]**

1. PAPERBOOK [**ISBN\_NO(PK)(FK), FORMATNO(PK)(FK),** PAGES]
2. PRIZE**[PRIZENO(PK),** PRIZENAME, **ISBN\_NO(FK),** AMOUNT**]**
3. PUBLISHER**[PUBNO(PK)**, NAME, **OWNERNO(FK)]**
4. PUBLISHOWNER[**OWNERNO(PK),** OWNERNAME]
5. SHIPPING**[SHIPNO(PK),** COST, TYPE**]**
6. WAREHOUSE[**WARENO(PK)**, CITY]

**Table: CATEGORY**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYpe | Length | PK | FK | REqd | Unique | Validation | Default |
| CategNO | Integer |  | Y |  | Y | Y |  | Assigned |
| CategName | Char | 25 |  |  | Y |  |  |  |

**Table: BOOKFORMAT**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYpe | Length | PK | FK | REqd | Unique | Validation | Default |
| FORMATNO | Int |  | Y |  | Y | Y |  | Assigned |
| FORMATTYPE | Char | 25 |  |  | Y |  |  |  |

**Table: PUBLISHOWNER**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| OWNERNO | Int |  | Y |  | Y | Y |  | Assigned |
| OWNERNAME | Char | 50 |  |  | Y |  |  |  |

**Table: PUBLISHER**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| PUBNO | Int |  | Y |  | Y | Y |  | Assigned |
| NAME | Char | 25 |  |  | Y |  |  |  |
| OWNERNO | Int |  |  | PUBLISHOWNER(OWNERNO) | Y |  |  |  |

**Table: WAREHOUSE**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| WARENO | Int |  | Y |  | Y | Y |  | Assigned |
| CITY | Char | 25 |  |  | Y |  |  |  |

**Table: BOOKS**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| ISBN\_NO | Char | 25 | Y |  | Y | Y |  | Assigned |
| TITLE | Char | 40 |  |  | Y |  |  |  |
| COST | Dec | 10,2 |  |  | Y |  |  |  |
| PRICE | Dec | 10,2 |  |  | Y |  |  |  |
| CATEGNO | Int |  |  | CATEGORY(CATEGNO) | Y |  |  |  |
| FORMATNO | Int |  |  | BOOKFORMAT(FORMATNO) | Y |  |  |  |
| PUBNO | Int |  |  | PUBLISHER(PUBNO) | Y |  |  |  |
| WARENO | Int |  |  | WAREHOUSE(WARENO) | Y |  |  |  |

**Table: DIGITALBOOK**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| ISBN\_NO | Char | 25 | Y | BOOKS(ISBN\_NO) | Y | Y |  | Assigned |
| FORMATNO | Int |  | Y | BOOKFORMAT(FORMATNO) | Y |  |  |  |
| MINS | Int |  |  |  | Y |  |  |  |

**Table: PAPERBOOK**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| ISBN\_NO | Char | 25 | Y | BOOKS(ISBN\_NO) | Y | Y |  | Assigned |
| FORMATNO | Int |  | Y | BOOKFORMAT(FORMATNO) | Y |  |  |  |
| PAGES | Int |  |  |  |  |  |  |  |

**Table: ADDRESS**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| ZIPCODE | Char | 25 | Y |  | Y | Y |  | Assigned |
| APARTNO | CHAR | 30 |  |  |  |  |  |  |
| STREET | Char | 30 |  |  | Y |  |  |  |
| CITY | Char | 30 |  |  | Y |  |  |  |
| PROVINCE | Char | 25 |  |  | Y |  |  |  |

**Table: AUTHOR**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| AUTHORNO | Int |  | Y |  | Y | Y |  | Assigned |
| FNAME | Char | 25 |  |  | Y |  |  |  |
| LNAME | CHAR | 25 |  |  | Y |  |  |  |
| DOB | Date |  |  |  | Y |  |  |  |
| MILLION\_SOLD | Char | 1 |  |  | Y |  |  |  |

**Table: SHIPPING**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| SHIPNO | Int |  | Y |  | Y | Y |  | Assigned |
| COST | Dec | 10,2 |  |  | Y |  |  |  |
| TYPE | Char | 100 |  |  | Y |  |  |  |

**Table: CUSTOMER**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| CUSTNO | Char | 25 | Y |  | Y | Y |  | Assigned |
| FNAME | Char | 30 |  |  | Y |  |  |  |
| LNAME | CHAR | 30 |  |  | Y |  |  |  |
| ZIPCODE | Char | 25 |  | ADDRESS(ZIPCODE) | Y |  |  |  |
| EMAIL | Char | 30 |  |  | Y |  |  |  |

**Table: INVOICE**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| INVNO | Char | 25 | Y |  | Y | Y |  | Assigned |
| CUSTNO | Char | 25 |  | CUSTOMER(CUSTNO) | Y |  |  |  |
| DATE | Date |  |  |  | Y |  |  |  |

**Table: PRIZE**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| PRIZENO | int |  | Y |  | Y | Y |  | Assigned |
| PRIZENAME | Char | 100 |  |  | Y |  |  |  |
| ISBN\_NO | Char | 25 |  | BOOKS(ISBN\_NO) | Y |  |  |  |
| AMOUNT | Dec | 10,2 |  |  | Y |  |  |  |

**Table: AUTHORBOOK**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| AUTHORNO | int |  | Y | AUTHOR(AUTHORNO) | Y | Y |  | Assigned |
| ISBN\_NO | Char | 25 | Y | BOOKS(ISBN\_NO) | Y |  |  |  |

**Table: AUTHORLANGUAGE**

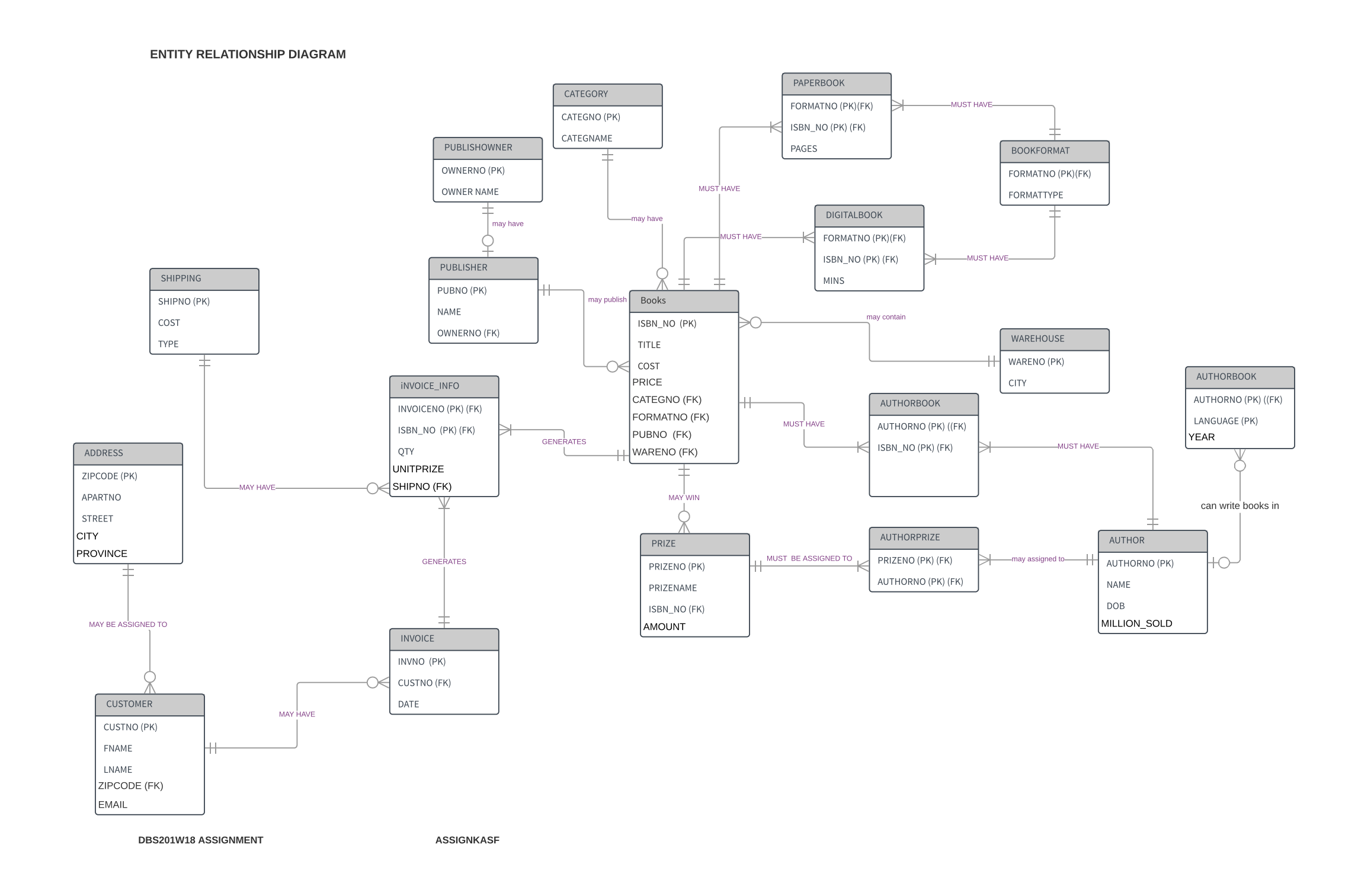
|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| AUTHORNO | int |  | Y | AUTHOR(AUTHORNO) | Y | Y |  | Assigned |
| LANGUAGE | Char | 25 | Y |  |  |  |  | ASSIGNED |
| YEAR | Char | 25 |  |  |  |  |  |  |

**Table: AUTHORPRIZE**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| PRIZENO | int |  | Y | PRIZE(PRIZENO) | Y | Y |  | Assigned |
| AUTHORNO | int | 25 | Y | AUTHOR(AUTHORNO) | Y |  |  |  |

**Table: INVOICE\_INFO**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data TYPE | Length | PK | FK | REqd | Unique | Validation | Default |
| INVNO | CHAR | 25 | Y | INVOICE(INVNO) | Y | Y |  | Assigned |
| ISBN\_NO | CHAR | 25 | Y | BOOKS(ISBN\_NO) | Y |  |  |  |
| QTY | Int |  |  |  | Y |  |  |  |
| UNITPRIZE | Decimal | 10,2 |  |  | Y |  |  |  |
| SHIPNO | Int |  |  | SHIPPING(SHIPNO) | Y |  |  |  |



**TABLES**

A screenshot of a computer

Description generated with very high confidence

**USERVIEW**

**A screenshot of a computer

Description generated with very high confidence**

**CONSTRAINTS**

**A screenshot of a computer screen

Description generated with very high confidence**

**A screenshot of a computer

Description generated with very high confidence**