The Description

This project is about Art Gallery Database management system. This is basically consist of management of Users and Gallery database. This project shows Information about gallery and manages orders for the customer , shows customer's , artist's, artwork's details..

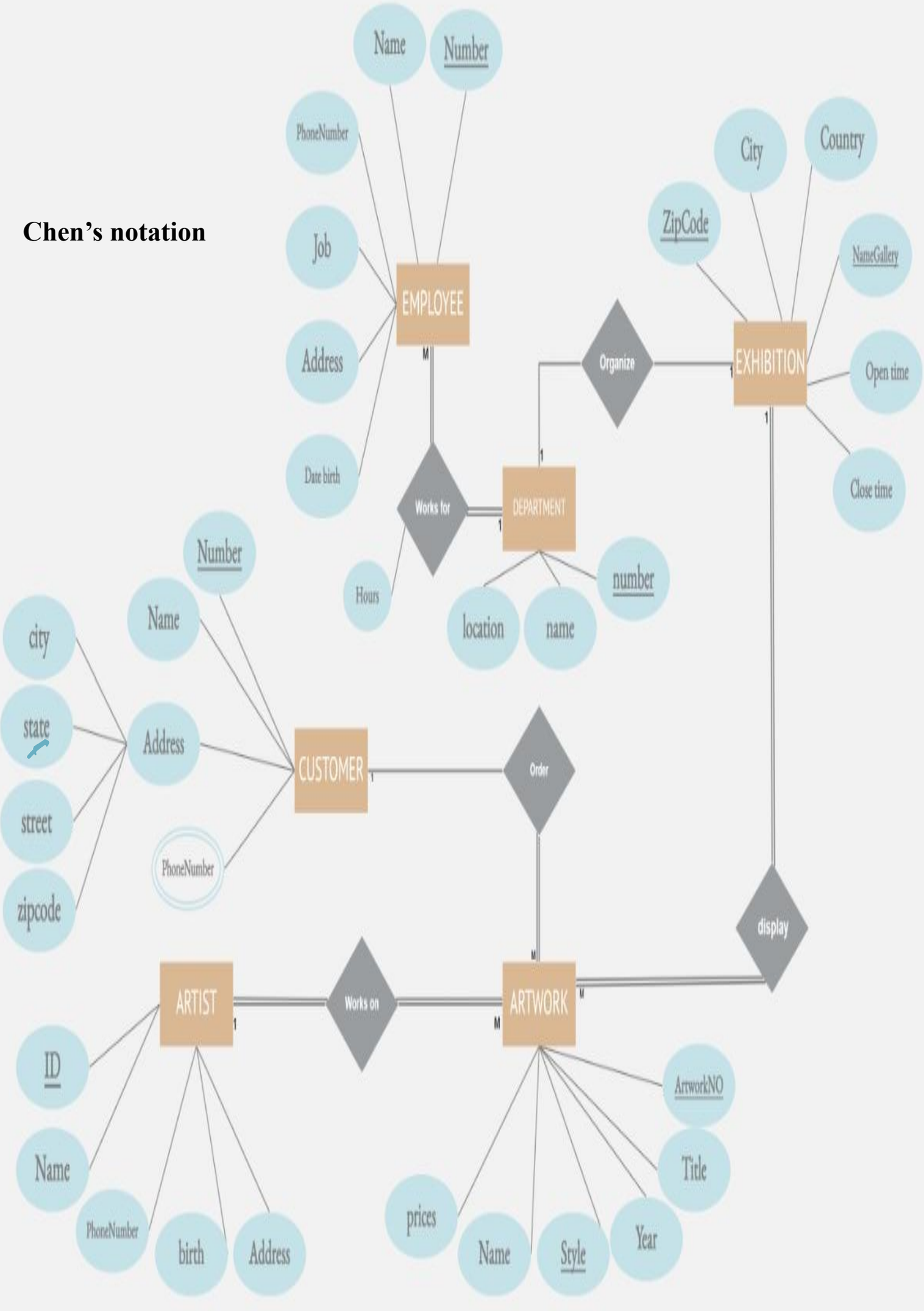
Art gallery has many EMPLOYEEs .Each employee has(unique number, phoneNumber , name , job ,address , date birth) , one or more employee works for one DEPARTMENT . In one department, more than one employee works, Each department contain (unique Employee number , Name_ Employee , names of arts ,unique artists ID) . The DB will keep track of the number of hours per week that an employee currently works for department.

Each ARTWORK has contain(a unique Artwork_No, Title, year it was made ,unique
And one style ,panting name ,prices),one ARTIST may works on several artworks
and Artwork is created by only one artist. Each artist has(a unique ID, name , phoneNumber ,birth, address, and art style).

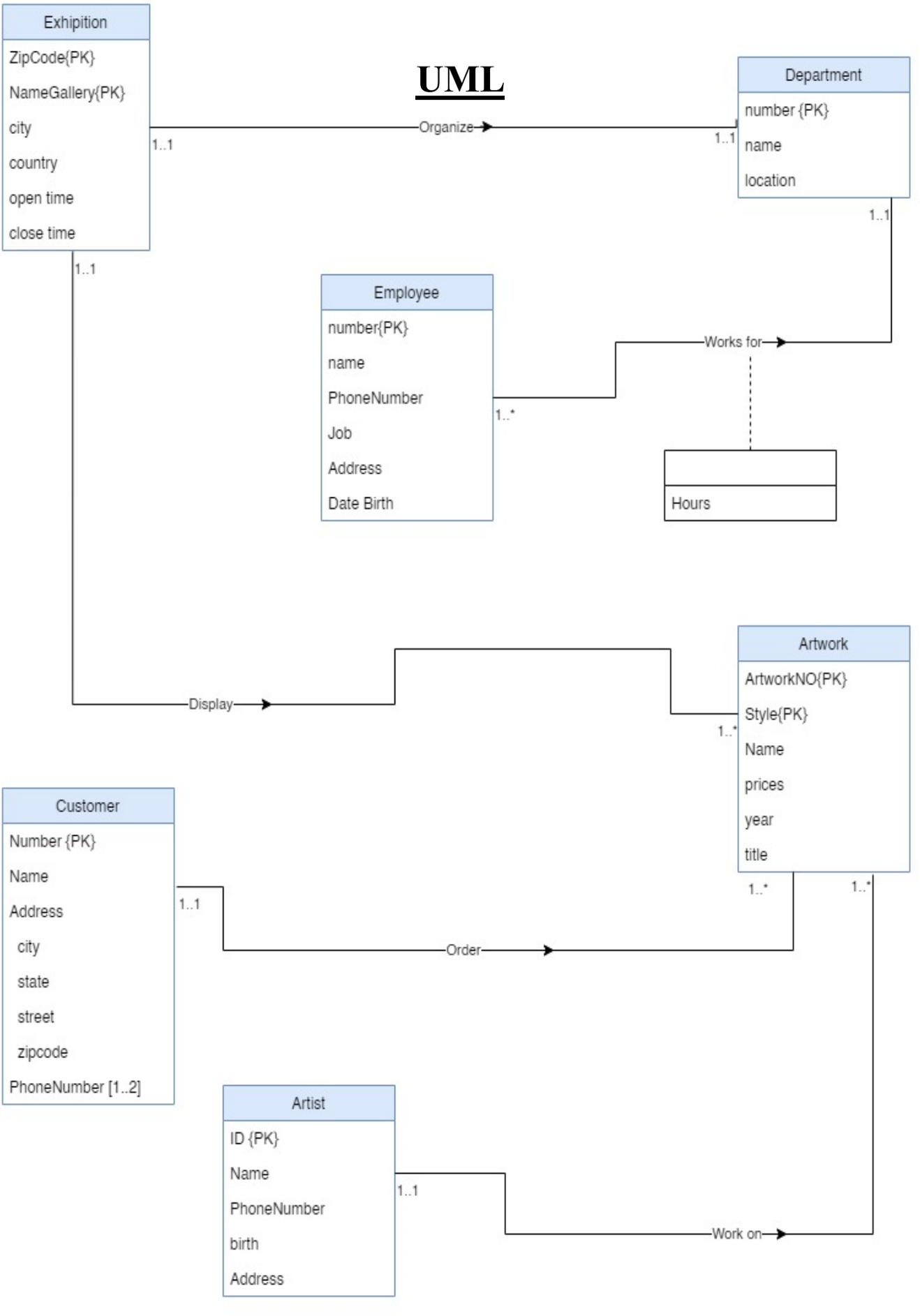
Each CUSTOMER has (a unique number, name, address, 1-2phoneNumber), the customer can order one or more artwork, but the artwork can only be sold to one customer.

Each EXHIBITION has contain (a unique Name_Gallery, Open time, close time, Country, City, and a unique Zip Code) , and Exhibition displays a number of artworks and more than one artwork are displayed in one exhibition.

Chen's notation



UML


Exhipition
ZipCode{PK}
NameGallery{PK}
city
country
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Organize
1..1
1..1
Department
number {PK}
name
location
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1..1
Employee
number{PK}
name
PhoneNumber
Job
Address
Date Birth
1..*
Works for
Hours
Display
1..*
Artwork
ArtworkNO{PK}
Style{PK}
Name
prices
year
title
1..*
1..*
Customer
Number {PK}
Name
Address
city
state
street
zipcode
PhoneNumber [1..2]
1..1
Order
Artist
ID {PK}
Name
PhoneNumber
birth
Address
1..1
Work on

Relational Schema Mapping

Step 1: Mapping of Regular Entity Types

Exhibition

ZipCode	NameGallery	City	country	open time	close time

Department

number	name	lacation

Employee

number	Name	PhoneNumber	Job	Address	Date Birth

ArtWork

ArtWorkNO	Style	Name	prices	Year	title

Customer

Number	Name	City	State	Street	zipcode

Aritst

ID	Name	PhoneNumber	Birth	address

Step 2: Mapping of Weak Entity Types

NONE

Step 3: Mapping of Binary 1:1 Relationship Types

Relationship: Organize (Exhibition & Department)

Department

number	name	lacation	Exhibition_ZipCode	Exhibition_NameGallery

Step 4: Mapping of Binary 1:M Relationship Types

Relationship: Works for (Employee& Department)

Employee

number	Name	PhoneNumber	Job	Address	Date Birth	Dep_number

Relationship: Display (Exhibition & ArtWork)

ArtWork

ArtWorkNO	Style	Name	prices	Year	title	Ex_ZipCode	Ex_NameGallery

Relationship: Order (Customer & ArtWork)

ArtWork

ArtWorkNO	Style	Name	prices	Year	title	Ex_ZipCode	Ex_NameGallery	Customer_number

Relationship: Work on (Artist & ArtWork)

ArtWork

ArtWorkNO	Style	Name	prices	Year	title	Ex_ZipCode	Ex_NameGallery	Customer_number	ArtistID

Step 5: Mapping of Binary M: N Relationship Types

NONE

Step 6: Mapping of Multivalued Attribute

CustomerNum

Number	PhoneNumber

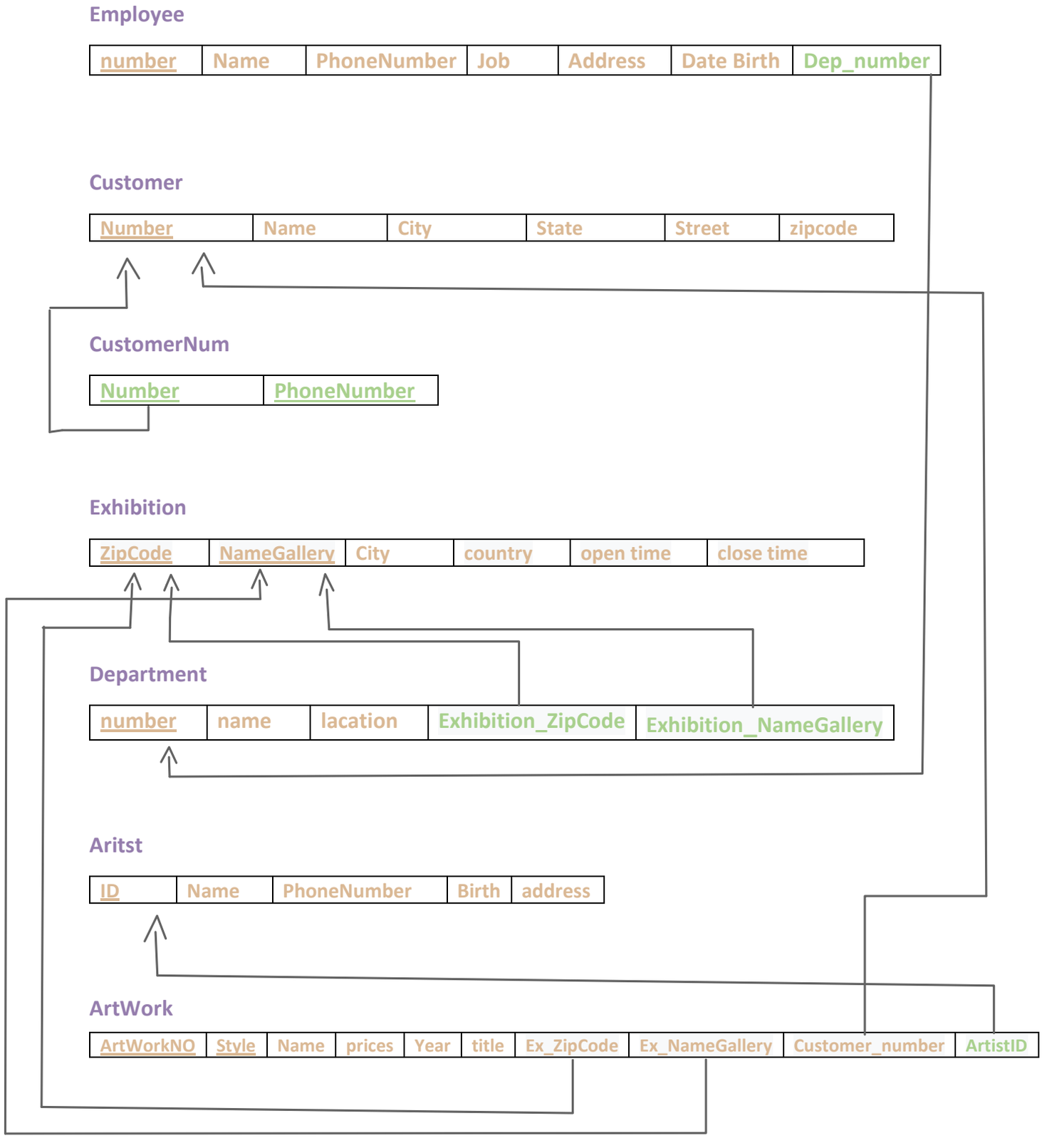
Step 7: Mapping of N-ary relationship types

NONE

STEP 8: Superclass/Subclass

NONE

FINAL MAPPING



Normalization

Employee

number	Name	PhoneNumber	Job	Address	Date Birth	Dep_number

First Normal Form (1NF):

database fields columns contain only a single value

There are no repeating groups in the table

(All attributes have single value).

Second Normal Form (2NF):

Each database attributes must depend on a primary key

The table in 1NF and there are no patrial dependency

(A Non-key attribute depends on all filed in the primary key).

Third Normal Form (3NF):

database fields columns contain no transitive dependencies ,The table in 1NF and 2NF and there are no transitive dependency

(There are no Non-key attribute depends on another Non-key attributes).

Customer

Number	Name	City	State	Street	zipcode

First Normal Form (1NF):

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Customer (customerNum ,Name, zipcode)

Customerzipcode (zipcode, City, state ,street)

Exhibition

ZipCode	NameGallery	Street	City	country	open time	close time

First Normal Form (1NF):

database fields columns contain only a single value

There are no repeating groups in the table

(All attributes have single value).

Second Normal Form (2NF):

Each database attributes must depend on a primary key

The table in 1NF and there are patrial dependency

Exhibition (Zipcode ,NameGallery ,City ,country , open time , close time)

ExhibitionName (Zipcode ,NameGallery , open time , close time)

ExhibitionZipcode (Zipcode ,City , country)

Third Normal Form (3NF):

database fields columns contain no transitive dependencies

(There are no Non-key attribute depends on another Non-key attributes).

Department

number	name	lacation	Exhibition_ZipCode	Exhibition_NameGallery

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Artist

ID	Name	PhoneNumber	Birth	address

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The table in 1NF and there are no patrial dependency

(A Non-key attribute depends on all filed in the primary key).

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ArtWork

ArtWorkNO	Style	Name	prices	Year	title	Ex_ZipCode	Ex_NameGallery	Customer_number	ArtistID

First Normal Form (1NF):

database fields columns contain only a single value

There are no repeating groups in the table

(All attributes have single value).

Second Normal Form (2NF):

Each database attributes must depend on a primary key

The table in 1NF and there are patrial dependency

ArtWork (ArtworkNO ,Style, Name, prices, Year, title,Ex_NameGallery, Customer_number ,ArtistID)

ArtWorkNO (ArtworkNO ,Style , prices, Year ,Name, title ,Ex_NameGallery, Customer_number ,ArtistID)

Third Normal Form (3NF):

database fields columns contain no transitive dependencies

(There are no Non-key attribute depends on another Non-key attributes)

CustomerNum

Number	PhoneNumber

First Normal Form (1NF):

database fields columns contain only a single value

There are no repeating groups in the table

(All attributes have single value).

Second Normal Form (2NF):

Each database attributes must depend on a primary key

The table in 1NF and there are no patrial dependency

(A Non-key attribute depends on all filed in the primary key).

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