



CS372-Database System
3ND Semester 2023



ART GALLERY

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Introduction

An art gallery database project is an that aims to create a centralized system for managing and tracking information related to an art gallery and its associated training courses. The our project involve gallery staff, artwork, instructors, and students.

Overall, an our project can streamline operations, improve communication, and enhance the overall experience for all stakeholders involved.



System Requirements

Data Requirements:

- ART GALLERY:

One gallery include: gallery id, name, location, working hours and all communication accounts, space reservation price , available spaces , reserved spaces .The gallery id is unique number .

- CUSTOMER:

Data store of each customer include: customer id , first name ,last name ,phone number , payment state.The customer id and phone number is unique number .

- INTERNS:

Data stored for each intern include: interns id ,first name,middle name, last name, phone number, age, email and enroll courses, membership status .
The interns id and phone number is unique number .

- COURSES:

Intern members enrolled in courses offered by gallery, the data stored for each courses include: course id ,name, description, number of intern members, the price for each course , date of course begins and date of course end.The course id is unique number .

System Requirements

- **EMPLOYEES:**

Works for gallery, the data stored for each employee include: employees id, first name,middle name, last name,phone number, email, type of job, salary , age, gender.The employees id and phone number is unique number .

- **TRAINERS:**

Works for gallery and teaching the interns, the data stored for each trainer include: employees id, first name , middle name, last name, phone number, email, type of art, salary , age, gender.The employees id and phone number is unique number .Trainers is subclass of employee.

- **ARTISTICAL WORKS:**

Artworks displays at gallery, the data stored for each artwork include: artwork id, name of artwork, , artist first name , artist last name.The Artworks id is unique number .



System Requirements

Transaction Requirements: Data Manipulation:

- Insert/update/ delete the details of art gallery
- Insert/update/ delete the details of interns
- Insert/update/ delete the details of courses
- Insert/update/ delete the details of trainers
- Insert/update/ delete the details of artistic work
- Insert/update/ delete the details of employees
- Insert/update/ delete the details of customer

Queries:

- List the details of art gallery.
- List the details of interns.
- List the details of courses.
- List the details of trainers.
- List the details of customer.
- List the details of artistic work.
- List the details of employees.
- List the details of number of interns.
- List the details of number of interns and, name for each course.



System Requirements



Queries:

- List the details of number of available spaces.
- List the details of date of course begins and date of course end.
- List the details of membership status.
- List the details of information trainers.
- List the details of Trainer supervises on Intern.

Business Rules:

- Membership status of the interns:

Perks for each trainee will automatically stop when the current date is later than the end date of all registered course offers. The status of the trainee has also been modified to "disabled".

- Maximum Space Reserved:

There is a maximum number of spaces in the exhibition.

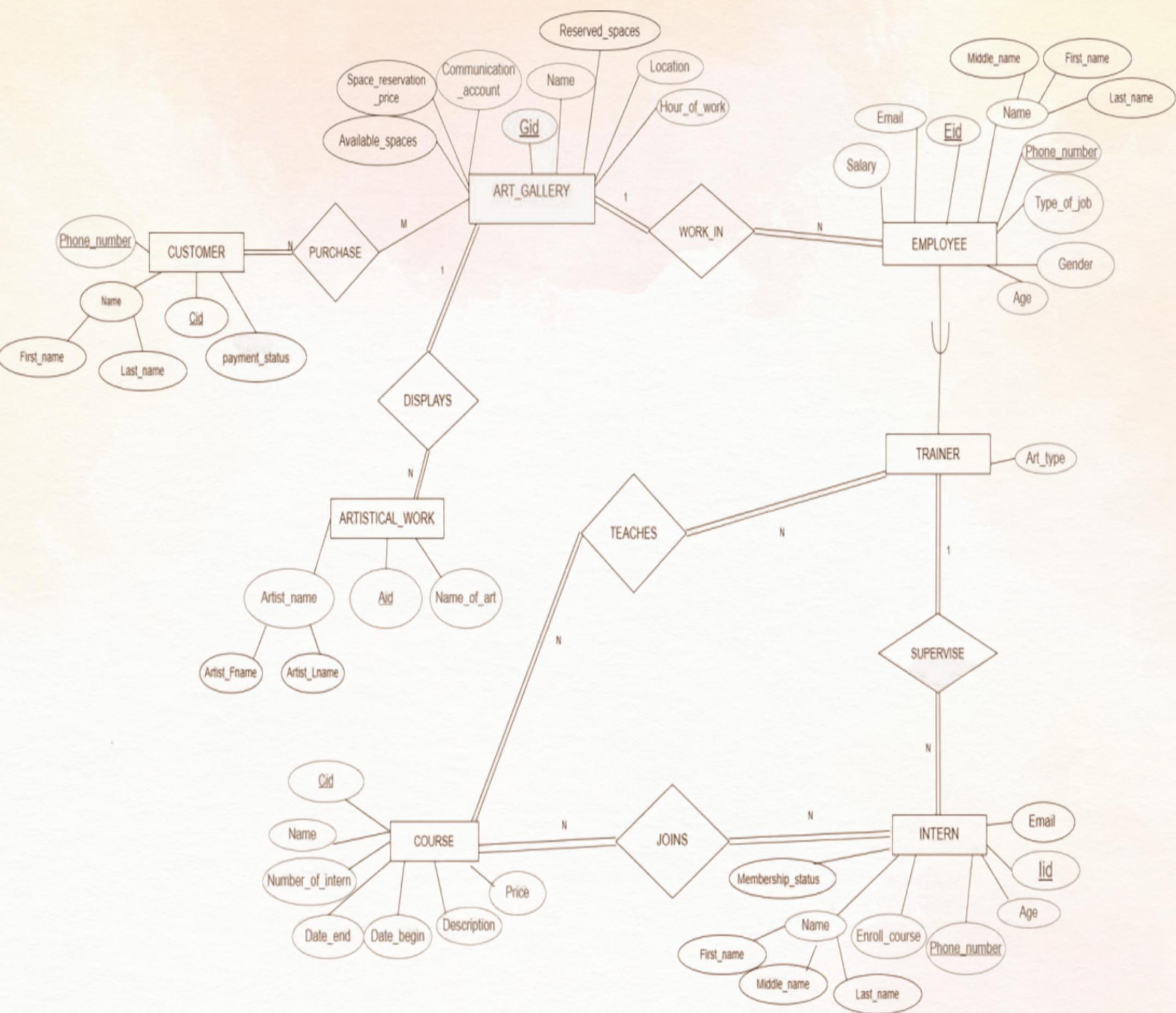
- The time available to reserve the space:

There is a specific time for each space based on the price paid for the period of reserving the space.

- Exact time for the exhibition:

There is a specific time for opening and closing the exhibition.

EER Model



Relational Schema

ART_GALLERY

Available_Spaces	Space_Reservation_Price	Communication_Account	Gid	Name	Reserved_Space	Loc	Hour_Of_Work
------------------	-------------------------	-----------------------	-----	------	----------------	-----	--------------

CUSTOMER

Phone_number	First_name	Last_name	Cid	Payment status
--------------	------------	-----------	-----	----------------

PURCHASE

Cid	Gid
-----	-----

EMPLOYEE

Salary	E_Mail.	Eid	First_name	Middle_name	Last_name	Phone_Number	Type_of_Job	Gender	Age	Gid
--------	---------	-----	------------	-------------	-----------	--------------	-------------	--------	-----	-----

TRAINER

Art_type	Eid
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ARTISTICAL_WORK

Artis_Lname	Artis_Fname	Aid	Name_of_Art	Gid
-------------	-------------	-----	-------------	-----

COURS

Cid	Name	Number_of_Intern	Data_End	Data_Being	Description	Price
-----	------	------------------	----------	------------	-------------	-------

INTERN

First_name	Middle_name	Last_name	Membership_Status	Iid	Enroll_Course	Phone_Number	Age	Email	Eid
------------	-------------	-----------	-------------------	-----	---------------	--------------	-----	-------	-----

TEACHES

Cid	Eid
-----	-----

JOINS

Iid	Cid
-----	-----



Appendix

Sample format for documenting entities:

Entity Name	Description	Aliases
ART GALLERY	Store information about space reservation and working hours and communication accounts.	
INTERNS	Store information about interns and the members of each interns.	
COURSES	Information about the members enrolled in courses offered by gallery.	
TRAINERS	Store the information of the courses offered by the gallery	
ARTISTICAL WORKS	Store the information of the arts works displayed at gallery.	
EMPLOYEES	Store the information for each employee at gallery.	
CUSTOMER	Store the information for each customer at gallery.	

Appendix

Sample format for documenting relationships:

Entity name	Multiplicity	Relationship	Multiplicity	Entity name
ART GALLERY	N:M	Purchase	M:N	CUSTOMER
ART GALLERY	1:N	WORK_IN	N:N	EMPLOYEE
ART GALLERY	1:N	DISPLAYS	N:N	ARTISTICAL WORKS
COURSE	N:N	TEACHES	N:N	TRAINER
COURSE	N:N	JOINS	N:N	INTERN
INTERN	N:1	SUPERVISE	N:1	TRAINER

Appendix

Sample format for documenting attributes:

Entity Name	Attributes	Description	Data Type & Length	Nulls	Multi-valued	Derived	Default
ART GALLERY	Gid	Gallery number	Int	No	No	No	
	Name	Gallery name	Varchar(20)	no	No	No	
	Reserved_spaces	The reserved spaces	Int	No	No	No	
	Location	The gallery location	Varchar(20)	No	No	No	
	Hour_of_works	Hours work	time	No	No	No	
	Communication account	Communication account	Varchar(30)	No	No	No	
	Space_reservation_price	Reservation price	money	No	No	No	
	Available_spaces	Available spaces	int	No	No	No	
Employee	Eid	Employee id	Int	No	No	No	
	Name	Employee name	Varchar(90)	No	No	No	
	Email	Employee Email	Varchar(30)	No	No	No	
	Salary	Employee salary	money	No	No	No	
	Phone_number	Phone number for employee	Varchar(30)	No	yes	No	
	Type_of_job	Job type	Varchar(30)	No	No	No	
	Gender	Gender (male or femal)	Varchar(10)	No	No	No	
	Age	Employee age	int	No	No	yes	

Appendix

Sample format for documenting attributes:

Trainer	Art type	Type of the art	Varchar(50)	No	No	No	
	Eid	Employee Id	int	No	No	No	
INTERN	Iid		int	No	No	No	
	Name	Intern name	Varchar(90)	No	No	No	
	Age	Intern age	int	No	No	yes	
	Phone_number	Phone number	Varchar(30)	No	yes	No	
	Email	email	Varchar(30)	No	No	No	
	Status	status	Varchar(30)	No	No	No	
	Enroll_course	Enrolled courses	Varchar(30)	No	No	No	
COURSE	Cid	Course id	int	No	No	No	
	Name	Course name	Varchar(30)	No	No	No	
	Num_of_intern	Number of intern	int	No	No	No	
	Date_end	end date	datetime	No	No	No	
	Date_begin	Begin date		No	No	No	
	Description	Course description	text	No	No	No	
	price	Course price	money	No	No	No	

Appendix

Sample format for documenting attributes:

ARTISTICAL_WORK	Aid	Artist id	int	No	No	No	
	Name_of_art	Art name	Varchar(30)	No	No	No	
	Artist_name	Artist name	Varchar(30)	No	No	No	
	Gid	Gallery id	int	No	No	No	
Customer	C_id	Customer id	int	No	No	No	
	fName	Customer first name	Varchar(30)	No	No	No	
	lName	Customer last name.	Varchar(30)	No	No	No	
	Phone_number	Customer phone	Varchar(30)	No	No	Yes	
	Payment_status	Payment status	Varchar(30)	No	No	No	

Implementation

```
create table ArtGallery(Gid int not null primary Key , GName varchar(20)not null,CommunicationAccount varchar(30) not null ,HourOfWork time not null  
,location varchar(20) not null,Space_reservation_price money not null  
,ReservedSpaces int check(ReservedSpaces <=50) not null,AvailableSpaces int not null)  
  
INSERT INTO ArtGallery VALUES ( 1234,'Madina Art Center', '@madinaartcenter', '5:00', 'King Fahd Park', 2000,8,42)  
  
create table Employee(Eid int primary Key not null ,FirstName varchar(30) not null,MiddleName Varchar(30) NOT NULL,LastName Varchar(30) NOT NULL  
, Email varchar(30) not null,phone_number varchar(30) not null,salary money not null,Type_of_jop varchar(30) not null  
,Gender varchar(10) not null,Age int not null,Gid int not null foreign key references ArtGallery(Gid))  
  
INSERT INTO Employee VALUES (12, 'Mohammed', 'Fahad' , 'Alharbi' , 'mohammed21@gmail.com', '0502004857',5000,'Trainer' , 'male',25,1234)  
INSERT INTO Employee VALUES (13, 'Lujain' , 'Abdulah' , 'Alharbi' , 'Lujain32@gmail.com', '0503002987',5000,'Trainer' , 'female',22,1234)  
INSERT INTO Employee VALUES (14, 'Ahmed', 'Adel' , 'Alharbi' , 'Ahamed33@gmail.com', '0503003337',5000,'HR' , 'male',28,1234)  
INSERT INTO Employee VALUES (15, 'Salman' , 'Mohamed' , 'Alhrbi' , 'salman3@gmail.com', '0503595937',2000,'Security guard' , 'male',24,1234)  
INSERT INTO Employee VALUES (16, 'sna' , 'Abdulaziz' , 'Alharbi' , 'sna32@gmail.com', '0503003030',3000,'Technician' , 'female',27,1234)  
  
create table Trainer(Eid int not null foreign key references Employee(Eid), Art_type varchar(30) not null)  
  
INSERT INTO Trainer VALUES (13,'Digital art')  
INSERT INTO Trainer VALUES (12,'Abstract art')  
  
create table Intern(Iid int not null primary Key ,FirstName varchar(30) not null,MiddleName Varchar(30) NOT NULL,LastName Varchar(30) NOT NULL  
, Email varchar(30) not null,phone_number varchar(30) not null,Age int not null,Enroll_Course varchar(30) not null  
,Membership_Status varchar(30) not null,Eid int not null foreign key references Employee(Eid))  
  
INSERT INTO Intern VALUES (17, 'Wafa' , 'Nabil' , 'Alharbi' , 'wafa66@gmail.com', '0508009989',20,'Digital art' , 'current',13)  
INSERT INTO Intern VALUES (18, 'Shahad' , 'Ahamed' , 'Alsaif' , 'shahadal@gmail.com', '0505678987',19,'Digital art' , 'current',13)  
INSERT INTO Intern VALUES (19, 'Ahad' , 'Omar' , 'Alsaif' , 'ahad44@gmail.com', '0504567787',22,'Abstract art' , 'current',12)  
INSERT INTO Intern VALUES (20, 'Ahmed' , 'Omar' , 'Aljuhani' , 'ahamd@gmail.com', '0506789887',23,'Abstract art' , 'not current',12)  
  
create table Course (Cid int not null primary Key , CName varchar(30) not null,Number_of_intern int not null check(Number_of_intern<=30)  
,Date_begin DateTime not null,Date_end DateTime not null, CDescription text not null, price money not null )  
  
INSERT INTO Course VALUES (66,'Abstract art',20,'2023-05-1 5:00:00 ','2023-05-30 10:00:00 ','In this course we will be creating 2 colorful large modern abstract paintings I will cover the usage of unconventional tools and materials to add interest and excitement to your masterpiece.',1000)  
INSERT INTO Course VALUES (67,'Digital art',20,'2023-05-1 5:00:00 ', '2023-05-30 10:00:00 ', 'This course will take you from having little knowledge in digital painting and drawing to creating advanced art and having a deep understanding of drawing fundamentals.',3000)  
  
create table ArtisticalWork(Aid int not null primary Key ,Artist_Fname varchar(30) not null,Artist_Lname varchar(30) not null,  
Name_of_art varchar(30) not null,Gid int not null foreign key references ArtGallery(Gid))  
  
INSERT INTO ArtisticalWork VALUES (30,'Ahmad','Khaled','The sky',1234)  
INSERT INTO ArtisticalWork VALUES (31,'Ahmad','Mohammad','The Earth',1234)  
INSERT INTO ArtisticalWork VALUES (32,'Amal','Mohammad','Rose ',1234)  
INSERT INTO ArtisticalWork VALUES (33,'Taif','Abdullah','Tulip ',1234)  
INSERT INTO ArtisticalWork VALUES (34,'saleh','Alnegedan','Alsayl ',1234)  
INSERT INTO ArtisticalWork VALUES (35,'Bartolome','Murillo','The little fruitseller ',1234)  
INSERT INTO ArtisticalWork VALUES (36,'Paul','gauguin','Winter landscape ',1234)  
INSERT INTO ArtisticalWork VALUES (37,'Vincent','van Gogh ','The Starry Night ',1234)  
INSERT INTO ArtisticalWork VALUES (38,'Vincent','van Gogh ','Irises ',1234)  
  
create table Customer(C_id int not null primary Key , Customer_Fname varchar(30) not null,Customer_Lname varchar(30) not null  
,phone_number varchar(30) not null ,payment_status varchar(30) not null )  
  
INSERT INTO Customer VALUES (40,'Khaled','Alharbi ','0507898765','Done')  
INSERT INTO Customer VALUES (41,'Lama' , 'Alharbi ' , '0506997878','Not Done ')  
INSERT INTO Customer VALUES (42,'Mona' , 'Alharbi ' , '0507008989','Done')  
INSERT INTO Customer VALUES (43,'khaled' , 'Alharbi ' , '0507008998','Done')  
INSERT INTO Customer VALUES (44,'Mohammed' , 'Alharbi ' , '0503877788','Not Done')
```



Implementation

```
create table Teaches(Eid int not null foreign key references Employee(Eid),Cid int not null foreign key references Course(Cid) )  
INSERT INTO Teaches VALUES (13,67)  
INSERT INTO Teaches VALUES (12,66)  
  
create table Joins (Iid int not null foreign key references Intern(Iid),Cid int not null foreign key references Course(Cid) )  
INSERT INTO Joins VALUES (17,67)  
INSERT INTO Joins VALUES (18,67)  
INSERT INTO Joins VALUES (19,66)  
INSERT INTO Joins VALUES (20,66)  
  
create table Purchase(C_id int not null foreign key references Customer(C_id), Gid int not null foreign key references ArtGallery(Gid))  
INSERT INTO Purchase VALUES (40,1234)  
INSERT INTO Purchase VALUES (41,1234)  
INSERT INTO Purchase VALUES (42,1234)  
INSERT INTO Purchase VALUES (43,1234)  
INSERT INTO Purchase VALUES (44,1234)
```

/*Targeted Queries:*/

```
SELECT*FROM ArtGallery  
SELECT*FROM Employee  
SELECT*FROM Intern  
SELECT*FROM Course  
SELECT*FROM Trainer  
SELECT*FROM ArtisticalWork  
SELECT*FROM Customer  
  
SELECT Number_of_intern FROM Course  
SELECT Number_of_intern, CName FROM Course  
SELECT AvailableSpaces FROM ArtGallery  
SELECT CName, Date_begin, Date_end FROM Course  
SELECT Iid, FirstName, Lastname, Membership_Status FROM Intern  
  
SELECT Trainer.Eid, Art_type, Employee.Type_of_jop , Employee.FirstName, MiddleName, Employee.LastName, phone_number, salary, Gender, Email  
FROM Trainer, Employee WHERE Employee.Eid= Trainer.Eid  
  
SELECT Employee.FirstName AS 'Trainer', Intern.FirstName AS 'Intern' FROM Employee JOIN Intern ON Employee.Eid= Intern.Eid
```

Run of code:

List the details of art gallery

	Gid	GName	CommunicationAccount	HourOfWork	location	Space_reservation_price	ReservedSpaces	AvailableSpaces
1	1234	Madina Art Center	@madinaartcenter	05:00:00.0000000	King Fahd Park	2000.00	45	5

List the details of employees

	Eid	FirstName	MiddleName	LastName	Email	phone_number	salary	Type_of_jop	Gender	Age	Gid
1	12	Mohammed	Fahad	Alharbi	mohammed21@gmail.com	0502004857	5000.00	Trainer	male	25	1234
2	13	Lujain	Abdulah	Alharbi	Lujain32@gmail.com	0503002987	5000.00	Trainer	female	22	1234
3	14	Ahmed	Adel	Alharbi	Ahamed33@gmail.com	0503003337	5000.00	HR	male	28	1234
4	15	Salman	Mohamed	Alhrbi	salman3@gmail.com	0503595937	2000.00	Security guard	male	24	1234
5	16	sna	Abdulaziz	Alharbi	sna32@gmail.com	0503003030	3000.00	Technician	female	27	1234

Implementation

List the details of interns

	lid	FirstName	MiddleName	LastName	Email	phone_number	Age	Enroll_Course	Membership_Status	Eid
1	17	Wafa	Nabil	Alharbi	wafa66@gmail.com	0508009989	20	Digital art	current	13
2	18	Shahad	Ahamed	Alsaif	shahadal@gmail.com	0505678987	19	Digital art	current	13
3	19	Ahad	Omar	Alsaif	ahad44@gmail.com	0504567787	22	Abstract art	current	12
4	20	Ahmed	Omar	Aljuhani	ahamd@gmail.com	0506789887	23	Abstract art	not current	12

List the details of courses

	Cid	CName	Number_of_intern	Date_begin	Date_end	CDescription	price
1	66	Abstract art	20	2023-05-01 05:00:00.000	2023-05-30 10:00:00.000	In this course we will be creating 2 colorful lar...	1000.00
2	67	Digital art	20	2023-05-01 05:00:00.000	2023-05-30 10:00:00.000	This course will take you from having little kno...	3000.00

List the details of trainers

	Eid	Art_type
1	13	Digital art
2	12	Abstract art

List the details of artistic work

	Aid	Artist_Fname	Artist_Lname	Name_of_art	Gid
1	30	Ahamad	Khaled	The sky	1234
2	31	Ahamad	Mohammad	The Earth	1234
3	32	Amal	Mohammad	Rose	1234
4	33	Taif	Abdullah	Tulip	1234
5	34	saleh	Alnegedan	Alsayl	1234
6	35	Bartolome	Murillo	The little fruitseller	1234
7	36	Paul	gauguin	Winter landscape	1234
8	37	Vincent	van Gogh	The Starry Night	1234
9	38	Vincent	van Gogh	Irises	1234

Implementation

List the details of customer

	C_id	Customer_Fname	Customer_Lname	phone_number	payment_status
1	40	Khaled	Alharbi	0507898765	Done
2	41	Lama	Alharbi	0506997878	Not Done
3	42	Mona	Alharbi	0507008989	Done
4	43	khaled	Alharbi	0507008998	Done
5	44	Mohammed	Alharbi	0503877788	Not Done

List the details of number of interns

	Number_of_intern
1	20
2	20

List the details of number of interns and name for each course

	Number_of_intern	CName
1	20	Abstract art
2	20	Digital art

List the details of number of available spaces

	AvailableSpaces
1	41

Implementation

List the details of date of course begins and date of course end

	CName	Date_begin	Date_end
1	Abstract art	2023-05-01 05:00:00.000	2023-05-30 10:00:00.000
2	Digital art	2023-05-01 05:00:00.000	2023-05-30 10:00:00.000

List the details of membership status

	lid	FirstName	Lastname	Membership_Status
1	17	Wafa	Alharbi	current
2	18	Shahad	Alsaif	current
3	19	Ahad	Alsaif	current
4	20	Ahmed	Aljuhani	not current

List the details of information trainers

	Eid	Art_type	Type_of_jop	FirstName	MiddleName	LastName	phone_number	salary	Gender	Email
1	13	Digital art	Trainer	Lujain	Abdulah	Alharbi	0503002987	5000.00	female	Lujain32@gmail.com
2	12	Abstract art	Trainer	Mohammed	Fahad	Alharbi	0502004857	5000.00	male	mohammed21@gmail.com

List the details of Trainer supervises on Intern

	Trainer	Intern
1	Lujain	Wafa
2	Lujain	Shahad
3	Mohammed	Ahad
4	Mohammed	Ahmed