

Kangaroo Fitness Database Project

CIS 3400

Section EMWA

Group 12

Member Names and Emails

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Phase I – Proposal/Introduction

Narrative Description (Business, Problem, Opportunity)

The biggest challenges facing gyms on both the client and business sides are impersonal environments, long waits for equipment, and high-maintenance locations. Kangaroo Fitness aims to deliver bespoke personal training services by matching specialized trainers with our customers. Even better, this is all done through our supply system which brings any requested equipment necessary to the training location of the customer's choice.

The appointments are the focal point of our data collection, as they track the training location and bidirectional ratings for the trainers and users. The appointments will also track which services and equipment were requested. One appointment may have more than one service and more than one equipment needed. We want basic information from our trainers and users. We need to know our trainers' specializations and hourly rates. We want to know the workout service types, subtypes, and which equipment they require. Our workout services will also have a rate associated with them as trainers will be able to charge on top of it. We want to know the equipment name, manufacturer, type, and subtype. The equipment will be stored at shipping facilities, which will have their basic information stored.

Information Needs

- Customer and Trainer Reviews
- Trainer specializations and rates
- Equipment type and subtypes
- Storage facilities
- Service types
- Appointment location and services rendered

Initial List of Entities Identified

- Locations
- Customers
- Equipment
- Trainers
- Other Employees
- Departments
- Appointments
- Vehicles

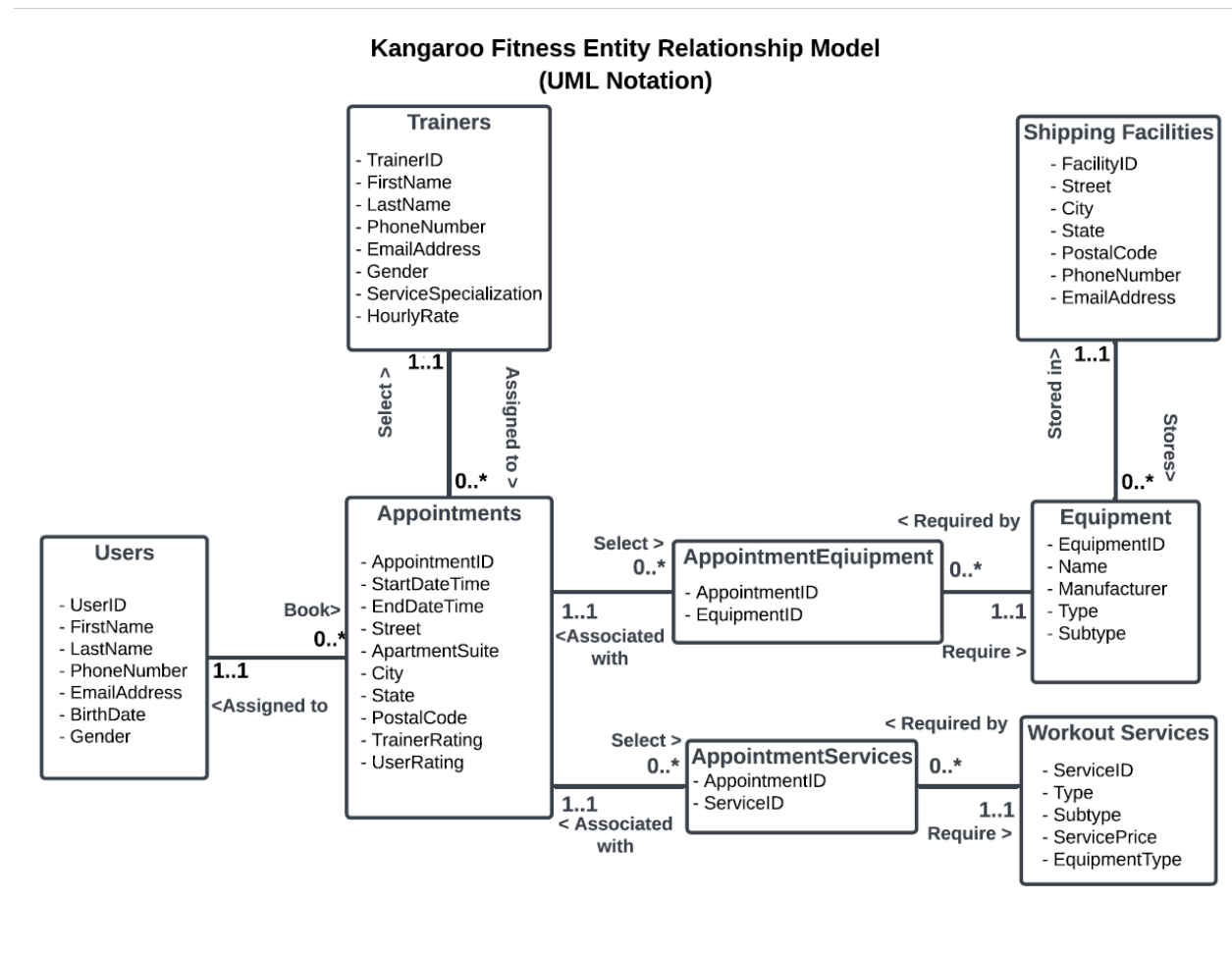
Final List of Entities

- Appointments
- Trainers
- Users
- Shipping Facilities
- Equipment
- Workout Services
- AppointmentEquipment (intersection)
- AppointmentServices (intersection)

Roles and Duties

- **Group Spokesperson (David, Victor)**
 - o Responsible for communication with professor
 - o Email by 11:30 PM of due dates
- **Systems Analyst (Victor, Kazi)**
 - o Entity Relationship diagram
 - o Convert to a relationship model
 - o Normalization
- **Database (Kelvin)**
 - o Implement tables SQL CREATE TABLE
- **Application Developer (Kelvin, Calvin)**
 - o Forms, reports, queries, menus, navigation
 - o Example printouts of forms
- **Documentation Writer (David, Victor)**
 - o Responsible for writing final report
 - o Screenshots

Phase II – Systems Analysis



Comments

- No relationship lines cross in any way. They either are going horizontally or vertically.
- We decided on not allowing overlapping appointments with services rendered and trainers to make it easier.
- Trainers and users would rate each other after every appointment.
- Clients are charged a flat rate for any service and trainers charge an hourly rate based on their expertise.

Relationship Sentences

One **USER** *may be* booking one or more **APPOINTMENTS**.

One **APPOINTMENT** *must be* assigned to one and only one **USER**.

One **APPOINTMENT** *may be* a reservation to provide one or more **SERVICES RENDERED**.

One **SERVICE RENDERED** *must be* a specific service rendered by one and only one **APPOINTMENT**.

One **APPOINTMENT** *must* select one and only one **TRAINER**.

One **TRAINER** *may be* assigned to one or more **APPOINTMENTS**.

One **TRAINER** *may be* assigned to one or more **SHIPPING FACILITIES**.

One **SHIPPING FACILITY** *may* serve one or more **TRAINERS**.

One **SHIPPING FACILITY** *may* hold one or more **VEHICLES**.

One **VEHICLE** *must be* stored in one and only one **SHIPPING FACILITY**.

One **SHIPPING FACILITY** *may* store one or more **EQUIPMENT**.

One **EQUIPMENT** *must be* stored in one or more **SHIPPING FACILITIES**.

One **EQUIPMENT** *must be* assigned to one or more **SERVICE RENDERED**.

One **SERVICE RENDERED** *may* require one or more **EQUIPMENTS**.

One **SERVICE RENDERED** *must be* a rendering of one and only one **WORKOUT SERVICE**.

One **WORKOUT SERVICE** *may be* a service rendered as one or more **SERVICE RENDERED**.

Phase III – Logical and Physical Modeling

Normalization

Trainers(TrainerID (key), FirstName, LastName, PhoneNumber, EmailAddress, Gender, ServiceSpecialization, HourlyRate)

Key: TrainerID

FD1: TrainerID \rightarrow FirstName, LastName, PhoneNumber, EmailAddress, Gender, ServiceSpecialization, HourlyRate

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: No transitive dependencies

ShippingFacilities(FacilityID (key), Street, City, State, PostalCode, PhoneNumber, EmailAddress)

FD1: FacilitiesID \rightarrow Street, City, State, PostalCode, PhoneNumber, EmailAddress

FD2: PostalCode \rightarrow City, State

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: Transitive dependency exists: PostalCode \rightarrow City, State

Solution: Split Trainers relation into two new relations named ShippingFacilitiesData and PostalCode:

ShippingFacilitiesData(FacilityID (key), Street, PostalCode (fk), PhoneNumber, EmailAddress)

FD1: FacilitiesID \rightarrow Street, PostalCode, PhoneNumber, EmailAddress

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: No transitive dependencies

PostalCode(PostalCode (key), City, State)

FD1: PostalCode \rightarrow City, State

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: No transitive dependencies

Appointments(AppointmentID (key), StartDateTime, EndDateTime, Street, ApartmentSuite, City, State, PostalCode, TrainerRating, UserRating)

FD1: AppointmentID \rightarrow StartDateTime, EndDateTime, Street, ApartmentSuite, City, State, PostalCode, TrainerRating, UserRating

FD2: PostalCode \rightarrow City, State

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: Transitive dependency exists: PostalCode \rightarrow City, State

Solution: Split Trainers relation into two new relations named AppointmentData and PostalCode. PostalCode has already been created:

AppointmentData(AppointmentID (key), StartDateTime, EndDate, TimeStreet, ApartmentSuite, City, State, PostalCode (fk), TrainerRating, UserRating)

FD1: AppointmentID \rightarrow StartDateTime, EndDateTime, Street, ApartmentSuite, PostalCode, TrainerRating, UserRating

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: No transitive dependencies

Equipment(EquipmentID (key), Name, Manufacturer, Type, Subtype)

FD1: EquipmentID \rightarrow Name, Manufacturer, Type, Subtype

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: No transitive dependencies

WorkoutServices(ServiceID (key), Type, Subtype, ServicePrice, EquipmentType)

FD1: ServiceID -> Type, Subtype, ServicePrice, EquipmentType

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: No transitive dependencies

Users(UserID (key), FirstName, LastName, PhoneNumber, EmailAddress, Birthdate, Gender)

FD1: UserID -> FirstName, LastName, PhoneNumber, EmailAddress, Birthdate, Gender

1NF: Meets the definition of a relation

2NF: No partial key dependencies

3NF: No transitive dependencies

AppointmentsEquipment (AppointmentID (key), EquipmentID (fk))

FD1: AppointmentID -> EquipmentID

1NF, 2NF, 3NF: All key

AppointmentsServices (AppointmentID (key), ServiceID (fk))

FD1: AppointmentID -> ServiceID

1NF, 2NF, 3NF: All key

Final Set of Relations

Trainers(TrainerID (key), FirstName, LastName, PhoneNumber, EmailAddress, Gender, ServiceSpecialization, HourlyRate)

ShippingFacilitiesData(FacilityID (key), Street, PostalCode (fk), PhoneNumber, EmailAddress)

PostalCode(PostalCode (key), City, State)

AppointmentsData(AppointmentID (key), StartDateTime, EndDate, TimeStreet, ApartmentSuite, City, State, PostalCode (fk), TrainerRating, UserRating, UserID (fk), TrainerID (fk))

Equipment(EquipmentID (key), Name, Manufacturer, Type, Subtype)

WorkoutServices(ServiceID (key), Type, Subtype, ServicePrice, EquipmentType)

Users(UserID (key), FirstName, LastName, PhoneNumber, EmailAddress, Birthdate, Gender)

AppointmentEquipment (AppointmentID (key), EquipmentID (fk))

AppointmentServices (AppointmentID (key), ServiceID (fk))

Comments

- Due to the E-R model revision removing the “Vehicles” entity, we decided to remove the “Weight” attribute from the “Equipment” entity because it was analogous to cargo load.
- In the “Trainers” entity, we considered a functional dependency between “ServiceSpecialization” and “HourlyRate” but our business will allow trainers to choose the rate that they charge and we will take a percentage of it. This will allow more experienced trainers to earn what they believe they deserve.
- PostalCode entity is shared between “ShippingFacilitiesData” and “AppointmentsData”.
- Two intersection relations were created per E-R model revision.

Phase IV – Database Implementation

SQL CREATE TABLE and ALTER TABLE Statements

```
CREATE TABLE trainers(  
    trainerID INTEGER NOT NULL PRIMARY KEY,  
    first_name VARCHAR(20) NOT NULL,  
    last_name VARCHAR(20) NOT NULL,  
    phone_number VARCHAR(20) NOT NULL,  
    email_address VARCHAR(40) NOT NULL,  
    gender VARCHAR(20),  
    service_specialization VARCHAR(30),  
    hourly_rate CURRENCY NOT NULL  
);  
  
CREATE TABLE appointments(  
    appointmentID INTEGER NOT NULL PRIMARY KEY,  
    start_date_time DATETIME,  
    end_date_time DATETIME,  
    street VARCHAR(20),  
    apartment_suite VARCHAR(20),  
    city VARCHAR(20),  
    state VARCHAR(2),  
    postal_code VARCHAR(10),  
    trainer_rating NUMBER,  
    user_rating NUMBER,  
    trainerID INTEGER NOT NULL,  
    userID INTEGER NOT NULL  
);  
  
CREATE TABLE users(  
    userID INTEGER NOT NULL PRIMARY KEY,  
    first_name VARCHAR(20) NOT NULL,  
    last_name VARCHAR(20) NOT NULL,  
    phone_number VARCHAR(20) NOT NULL,  
    email_address VARCHAR(40) NOT NULL,  
    birth_date DATE,  
    gender VARCHAR(20)  
);  
  
CREATE TABLE shipping_facilities(  
    facilityID INTEGER NOT NULL PRIMARY KEY,  
    street VARCHAR(20),  
    city VARCHAR(20),  
    state VARCHAR(2),
```

```
        postal_code VARCHAR(10),
        phone_number VARCHAR(20) NOT NULL,
        email_address VARCHAR(40) NOT NULL
    );

CREATE TABLE equipment(
    equipmentID INTEGER NOT NULL PRIMARY KEY,
    name VARCHAR(20),
    manufacturer VARCHAR(20),
    type VARCHAR(20),
    subtype VARCHAR(20),
    facilityID INTEGER NOT NULL
);

CREATE TABLE workout_services(
    serviceID INTEGER NOT NULL PRIMARY KEY,
    type VARCHAR(20),
    subtype VARCHAR(20),
    service_price CURRENCY NOT NULL,
    equipment_type VARCHAR(20)
);

CREATE TABLE appointment_equipment(
    appointmentID INTEGER NOT NULL,
    equipmentID INTEGER NOT NULL
);

CREATE TABLE appointment_services(
    appointmentID INTEGER NOT NULL,
    serviceID INTEGER NOT NULL
);

ALTER TABLE appointment_equipment ADD CONSTRAINT
fk_appointmentequip
    FOREIGN KEY (appointmentID) REFERENCES
appointments(appointmentID);

ALTER TABLE appointment_equipment ADD CONSTRAINT fk_equipment
    FOREIGN KEY (equipmentID) REFERENCES
equipment(equipmentID);

ALTER TABLE appointment_services ADD CONSTRAINT
fk_appointmentserv
    FOREIGN KEY (appointmentID) REFERENCES
appointments(appointmentID);
```

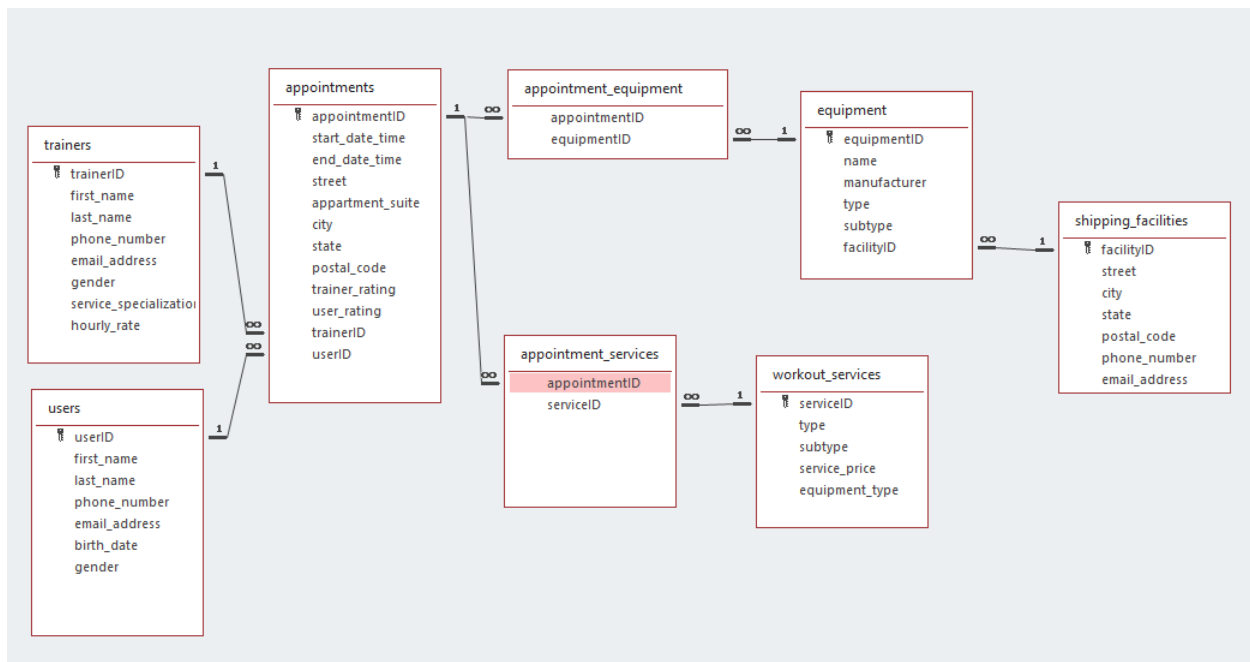
```
ALTER TABLE appointment_services ADD CONSTRAINT fk_service
    FOREIGN KEY (serviceID) REFERENCES
workout_services(serviceID);
```

```
ALTER TABLE appointments ADD CONSTRAINT fk_appointmenttrainer
    FOREIGN KEY (trainerID) REFERENCES trainers(trainerID);
```

```
ALTER TABLE appointments ADD CONSTRAINT fk_appointmentuser
    FOREIGN KEY (userID) REFERENCES users(userID);
```

```
ALTER TABLE equipment ADD CONSTRAINT fk_facility
    FOREIGN KEY (facilityID) REFERENCES
shipping_facilities(facilityID);
```

Relationships View in MS Access



Phase V – Application Implementation

Example Printouts and Descriptions

Appointment Report

appointments						
appointmentID	start_date_time	end_date_time	street	apartment_suite	city	state
100	1/4/2022 2:07:55 AM	1/4/2022 2:45:53 AM	Hanson	65	Houston	<input type="text" value="NY"/>
101	3/20/2022 4:27:58 AM	3/20/2022 5:11:02 AM	Loomis	93	Rockford	<input type="text" value="NY"/>
102	12/30/2022 9:25:26 PM	12/30/2022 11:26:47 PM	Pond	4	Densington	<input type="text" value="NJ"/>
103	11/13/2022 1:49:04 PM	11/13/2022 4:04:11 PM	Declaratio	25	Cincinnati	<input type="text" value="PA"/>
104	6/21/2022 9:55:31 PM	6/21/2022 10:12:43 PM	Kingsford	16	Charleston	<input type="text" value="NY"/>

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postal_code	trainer_rating	user_rating	trainerID	userID
77245	3	4	<input type="text" value="4"/>	<input type="text" value="3"/>
61110	4.3	5	<input type="text" value="3"/>	<input type="text" value="2"/>
92165	4.8	4	<input type="text" value="1"/>	<input type="text" value="5"/>
45228	5	3	<input type="text" value="1"/>	<input type="text" value="4"/>
29416	2.1	5	<input type="text" value="2"/>	<input type="text" value="1"/>

Equipment Report

equipment					
equipmentID	name	manufacturer	type	subtype	facilityID
1	yoga mat	yoga productions	cardio	yoga	1
2	barbell	Sharkx industries	weight	barbell	4
3	squat rack	Sharkx industries	weight	squat rack	4
4	dumbbell	Gym loaners	weight	dumbbell	2
5	treadmill	Cardio Suppliers	cardio	treadmill	3
6	rowing machine	Excelsius Sporting	cardio	rowing machine	2
7	bench rack	Alpha Centurion	weight	bench	3
8	resistance cable	Geodude Sporting	weight	cables	2

Shipping Facilities Report

shipping_facilities						
facilityID	street	city	state	postal_cod	phone_number	email_address
1	Dober St	Brooklyn	NY	10312	(917) 188-1881	dobershipping@gmail.com
2	Essex Avenue	Manhattan	NY	31231	(913) 232-1312	essexindustries@gmail.com
3	Bastion St	Queens	NY	12394	(912) 321-3555	bastionshipping@outlook@gmail.cc
4	Juxatpose	Bronx	NY	15823	(718) 991-9919	juxatposefacility@hotmail.com

Trainers Report

trainers

last_name	trainerID	first_name	phone_num	email_address	gender	service_specializa	hourly_rate
Blazewski	4	Kendrick	263-895-06	kblazewski6@techcrunc	Male	Running Coach	\$28.36
Humburton	3	Shurlocke	709-624-08	shumburton2@aol.com	Male	Weight Managem	\$31.27
Korobi	1	Samia	336-278-49	samia.korobi@instagra	Female	Yoga Instructor	\$75.50
Smith	2	Kelvin	929-746-38	k.smith@gmail.com	Male	Bodybuilding Spec	\$55.75

Users Report

users

last_name	userID	first_name	phone_number	email_address	birth_date	gender
Clarke	2	Sadie	197-685-1613	sclarke1@goo.ne.jp	12/18/1999	Female
Dusting	4	Valene	980-559-7378	vdusting3@mashable.com	6/9/2000	Female
Hannen	3	Wilmer	113-315-6949	whannen2@eventbrite.com	9/20/2000	Male
Percival	5	Gates	468-867-8570	gpercival4@timesonline.co.uk	4/7/1997	Female
Propper	1	Arne	194-900-9535	apropper0@state.gov	12/3/2000	Male

Workout Services Report

workout_services

serviceID	type	subtype	service_price	equipment_type
1	cardio	yoga	\$30.00	yoga mat
2	body building	benching	\$50.00	weights
3	endurance	yoga	\$40.00	weights
4	weight management	cardio	\$40.00	treadmill
5	resistance training	weight	\$50.00	weights

Form Printouts

Appointments Data Entry

Appointments Data Entry

Appointment ID	100
Start Date and Time	1/4/2022 2:07:55 AM
End Date and Time	1/4/2022 2:45:53 AM
Street	Hanson
Apartment Suite	65
City	Houston
State	NY
Postal Code	77245
Trainer Rating	3
User Rating	4
Trainer ID	4
User ID	3

Appointment ID	101
Start Date and Time	3/20/2022 4:27:58 AM
End Date and Time	3/20/2022 5:11:02 AM
Street	Loomis
Apartment Suite	93
City	Rockford
State	NY
Postal Code	61110
Trainer Rating	4.3
User Rating	5
Trainer ID	3
User ID	2

Appointment ID	102
Start Date and Time	12/30/2022 9:25:26 PM
End Date and Time	12/30/2022 11:26:47 PM
Street	Pond
Apartment Suite	4
City	Densington

Equipment Data Entry

Equipment Data Entry

Equipment ID	<input type="text" value="1"/>
Name	<input type="text" value="yoga mat"/>
Manufacturer	<input type="text" value="yoga productions"/>
Type	<input type="text" value="cardio"/>
Subtype	<input type="text" value="yoga"/>
Facility ID	<input type="text" value="1"/>

Equipment ID	<input type="text" value="2"/>
Name	<input type="text" value="barbell"/>
Manufacturer	<input type="text" value="Sharkx industries"/>
Type	<input type="text" value="weight"/>
Subtype	<input type="text" value="barbell"/>
Facility ID	<input type="text" value="4"/>

Equipment ID	<input type="text" value="3"/>
Name	<input type="text" value="squat rack"/>
Manufacturer	<input type="text" value="Sharkx industries"/>
Type	<input type="text" value="weight"/>
Subtype	<input type="text" value="squat rack"/>
Facility ID	<input type="text" value="4"/>

Equipment ID	<input type="text" value="4"/>
Name	<input type="text" value="dumbell"/>
Manufacturer	<input type="text" value="Gym loaners"/>
Type	<input type="text" value="weight"/>
Subtype	<input type="text" value="dumbell"/>
Facility ID	<input type="text" value="2"/>

Equipment ID	<input type="text" value="5"/>
Name	<input type="text" value="treadmill"/>
Manufacturer	<input type="text" value="Cardio Suppliers"/>
Type	<input type="text" value="cardio"/>
Subtype	<input type="text" value="treadmill"/>

Shipping Facilities Data Entry

Shipping Facilities Data Entry

Facility ID	<input type="text" value="1"/>
Street	<input type="text" value="Dober St"/>
City	<input type="text" value="Brooklyn"/>
State	<input type="text" value="NY"/>
Postal Code	<input type="text" value="10312"/>
Phone Number	<input type="text" value="9171881881"/>

Email Address	<input type="text" value="dobershipping@gmail.com"/>
---------------	--

Facility ID	<input type="text" value="2"/>
Street	<input type="text" value="Essex Avenue"/>
City	<input type="text" value="Manhattan"/>
State	<input type="text" value="NY"/>
Postal Code	<input type="text" value="31231"/>
Phone Number	<input type="text" value="9132321312"/>

Email Address	<input type="text" value="essexindustries@gmail.com"/>
---------------	--

Facility ID	<input type="text" value="3"/>
Street	<input type="text" value="Bastion St"/>
City	<input type="text" value="Queens"/>
State	<input type="text" value="NY"/>
Postal Code	<input type="text" value="12394"/>
Phone Number	<input type="text" value="9123213555"/>

Email Address	<input type="text" value="bastionshipping@outlook@gmail.com"/>
---------------	--

Facility ID	<input type="text" value="4"/>
Street	<input type="text" value="Juxatpose"/>
City	<input type="text" value="Bronx"/>
State	<input type="text" value="NY"/>
Postal Code	<input type="text" value="15823"/>
Phone Number	<input type="text" value="7189919919"/>

Trainers Data Entry

Trainers Data Entry

Trainer ID	1
First Name	Samia
Last Name	Korobi
Phone Number	336-278-4940
Email Address	samia.korobi@instagram.com
Gender	Female
Service Specialization	Yoga Instructor
Hourly Rate	\$75.50

Trainer ID	2
First Name	Kelvin
Last Name	Smith
Phone Number	929-746-3821
Email Address	k.smith@gmail.com
Gender	Male
Service Specialization	Bodybuilding Specialist
Hourly Rate	\$55.75

Trainer ID	3
First Name	Shurlocke
Last Name	Humburton
Phone Number	709-624-0842
Email Address	shumburton2@aol.com
Gender	Male
Service Specialization	Weight Management Specialist
Hourly Rate	\$31.27

Trainer ID	4
First Name	Kendrick
Last Name	Blazewski
Phone Number	263-895-0639
Email Address	kblazewski6@techcrunch.com

Users Data Entry

Users Data Entry

User ID	<input type="text" value="1"/>
First Name	<input type="text" value="Arne"/>
Last Name	<input type="text" value="Propper"/>
Phone Number	<input type="text" value="194-900-9535"/>
Email Address	<input type="text" value="apropper0@state.gov"/>
Birth Date	<input type="text" value="12/3/2000"/>
Gender	<input type="text" value="Male"/>

User ID	<input type="text" value="2"/>
First Name	<input type="text" value="Sadie"/>
Last Name	<input type="text" value="Clarke"/>
Phone Number	<input type="text" value="197-685-1613"/>
Email Address	<input type="text" value="sclarke1@goo.ne.jp"/>
Birth Date	<input type="text" value="12/18/1999"/>
Gender	<input type="text" value="Female"/>

User ID	<input type="text" value="3"/>
First Name	<input type="text" value="Wilmer"/>
Last Name	<input type="text" value="Hannen"/>
Phone Number	<input type="text" value="113-315-6949"/>
Email Address	<input type="text" value="whannen2@eventbrite.com"/>
Birth Date	<input type="text" value="9/20/2000"/>
Gender	<input type="text" value="Male"/>

User ID	<input type="text" value="4"/>
First Name	<input type="text" value="Valene"/>
Last Name	<input type="text" value="Dusting"/>
Phone Number	<input type="text" value="980-559-7378"/>
Email Address	<input type="text" value="vdusting3@mashable.com"/>
Birth Date	<input type="text" value="6/9/2000"/>
Gender	<input type="text" value="Female"/>

User ID	<input type="text" value="5"/>
---------	--------------------------------

Workout Services Data Entry**Workout Services Data Entry**

Service ID	<input type="text" value="1"/>
Type	<input type="text" value="cardio"/>
Subtype	<input type="text" value="yoga"/>
Service Price	<input type="text" value="\$30.00"/>
Equipment Type	<input type="text" value="yoga mat"/>

Service ID	<input type="text" value="2"/>
Type	<input type="text" value="body building"/>
Subtype	<input type="text" value="benching"/>
Service Price	<input type="text" value="\$50.00"/>
Equipment Type	<input type="text" value="weights"/>

Service ID	<input type="text" value="3"/>
Type	<input type="text" value="endurance"/>
Subtype	<input type="text" value="yoga"/>
Service Price	<input type="text" value="\$40.00"/>
Equipment Type	<input type="text" value="weights"/>

Service ID	<input type="text" value="4"/>
Type	<input type="text" value="weight management"/>
Subtype	<input type="text" value="cardio"/>
Service Price	<input type="text" value="\$40.00"/>
Equipment Type	<input type="text" value="treadmill"/>

Service ID	<input type="text" value="5"/>
Type	<input type="text" value="resistance training"/>
Subtype	<input type="text" value="weight"/>
Service Price	<input type="text" value="\$50.00"/>
Equipment Type	<input type="text" value="weights"/>

Queries

Business Query – Which trainer has the highest rating?

```
SELECT a.trainer_rating, t.first_name, t._last_name
FROM trainers AS t
INNER JOIN appointments as A
ON t.trainerID = a.trainerID
ORDER BY a.trainer_rating DESC;
```

Highest Rated Trainers

12/16/2022

trainer_rating	first_name	last_name
5	Samia	Korobi
4.8	Samia	Korobi
4.3	Shurlocke	Humburton
3	Kendrick	Blazewski
2.1	Kelvin	Smith

Business Query – Which workout service has the highest price?

```
SELECT *
FROM workout_services
ORDER BY service_price DESC;
```

serviceID	type	subtype	service_price	equipment_type
2	body building	benching	\$50.00	weights
5	resistance training	weight	\$50.00	weights
3	endurance	yoga	\$40.00	weights
4	weight management	cardio	\$40.00	treadmill
1	cardio	yoga	\$30.00	yoga mat
*				

Business Query – What are the addresses of the facilities that hold the cardio equipment, and who are their manufacturers?

```
SELECT f.street, f.city, f.state, f.postal_code, e.manufacturer,
e.type, e.subtype
FROM equipment AS e
INNER JOIN shipping_facilities AS f
ON e.facilityID = f.facilityID
WHERE e.type = 'cardio'
;
```

street	city	state	postal_code	manufacturer	type	subtype
Dober St	Brooklyn	NY	10312	yoga productions	cardio	yoga
Bastion St	Queens	NY	12394	Cardio Suppliers	cardio	treadmill
Essex Avenue	Manhattan	NY	31231	Excelsius Sporting	cardio	rowing machine

Appointment Query: Sorted by start time, we look at all the appointments made

```
SELECT *
FROM appointments
ORDER BY appointments.start_date_time;
```

Appointments Data

12/16/2022

start_date_time	end_date_time	street	apartment_sui	city
1/4/2022 2:07:55 AM	1/4/2022 2:45:53 AM	Hanson	65	Houston
3/20/2022 4:27:58 AM	3/20/2022 5:11:02 AM	Loomis	93	Rockford
6/21/2022 9:55:31 PM	6/21/2022 10:12:43 PM	Kingsford	16	Charleston
11/13/2022 1:49:04 PM	11/13/2022 4:04:11 PM	Declaration	25	Cincinnati
12/30/2022 9:25:26 PM	12/30/2022 11:26:47 PM	Pond	4	Densington

Equipment Query: Returns equipment data

```
SELECT *
FROM equipment;
```

Equipment Data

12/16/2022

name	manufacturer	type	subtype	facilityID
yoga mat	yoga productio	cardio	yoga	1
barbell	Sharkx industri	weight	barbell	4
squat rack	Sharkx industri	weight	squat rack	4
dumbell	Gym loaners	weight	dumbell	2
treadmill	Cardio Supplier	cardio	treadmill	3
rowing machin	Excelsius Sporti	cardio	rowing machin	2
bench rack	Alpha Centurio	weight	bench	3
resistance cabl	Geodude Sport	weight	cables	2

Shipping Facilities Query: Returns shipping facilities

```
SELECT *
FROM shipping_facilities;
```

Shipping Facilities Query

12/16/2022

street	city	state	postal_code	phone_number	email_address
Dober St	Brooklyn	NY	10312	(917) 188-1881	dobershipping
Essex Avenue	Manhattan	NY	31231	(913) 232-1312	essexindustries
Bastion St	Queens	NY	12394	(912) 321-3555	bastionshippin
Juxatpose	Bronx	NY	15823	(718) 991-9919	juxatposefacilit

Trainers Data Query: Returns trainers

```
SELECT *
FROM trainers;
```

Trainers Data

12/16/2022

first_name	last_name	phone_number	email_address	gender	service_speciali
Samia	Korobi	336-278-4940	samia.korobi@	Female	Yoga Instructor
Kelvin	Smith	929-746-3821	k.smith@gmail.	Male	Bodybuilding S
Shurlocke	Humburton	709-624-0842	shumburton2	Male	Weight Manag
Kendrick	Blazewski	263-895-0639	kblazewski6@t	Male	Running Coach

Users Query: Returns users data

```
SELECT *
FROM users;
```

Users Data

12/16/2022

first_name	last_name	phone_number	email_address	birth_date	gender
Arne	Propper	194-900-9535	apropper0@st	12/3/2000	Male
Sadie	Clarke	197-685-1613	sclarke1@goo.	12/18/1999	Female
Wilmer	Hannen	113-315-6949	whannen2@ev	9/20/2000	Male
Valene	Dusting	980-559-7378	vdusting3@ma	6/9/2000	Female
Gates	Percival	468-867-8570	gpercival4@ti	4/7/1997	Female

Workout Services Query: Returns workout services

```
SELECT *
FROM workout_services;
```

Workout Services Data

12/16/2022

type	subtype	service_price	equipment_type
cardio	yoga	\$30.00	yoga mat
body building	benching	\$50.00	weights
endurance	yoga	\$40.00	weights
weight manage	cardio	\$40.00	treadmill
resistance train	weight	\$50.00	weights

Navigation Form

Navigation Form

Users Data Entry

Users Report

Trainers Data Entry

Trainers Report

Appointments Data Entry

Appointments Report

Equipment Data Entry

Equipment Report

Workout Services Data Entry

Workout Services Report

Shipping Facilities Data Entry

Shipping Facilities Report

Users Data Entry

User ID

1

First Name

Arne

Last Name

Propper

Phone Number

194-900-9535

Email Address

apropper0@state.gov

Birth Date

12/3/2000

Gender

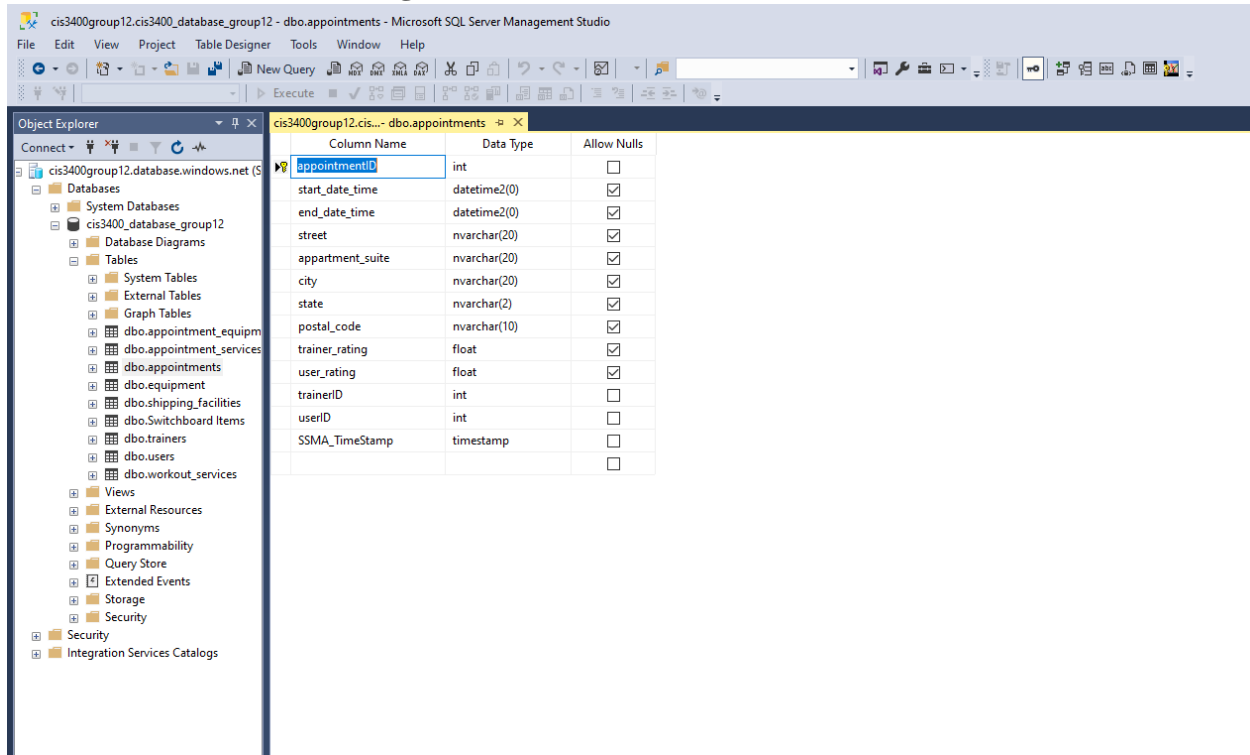
Male

Records: 1 of 5

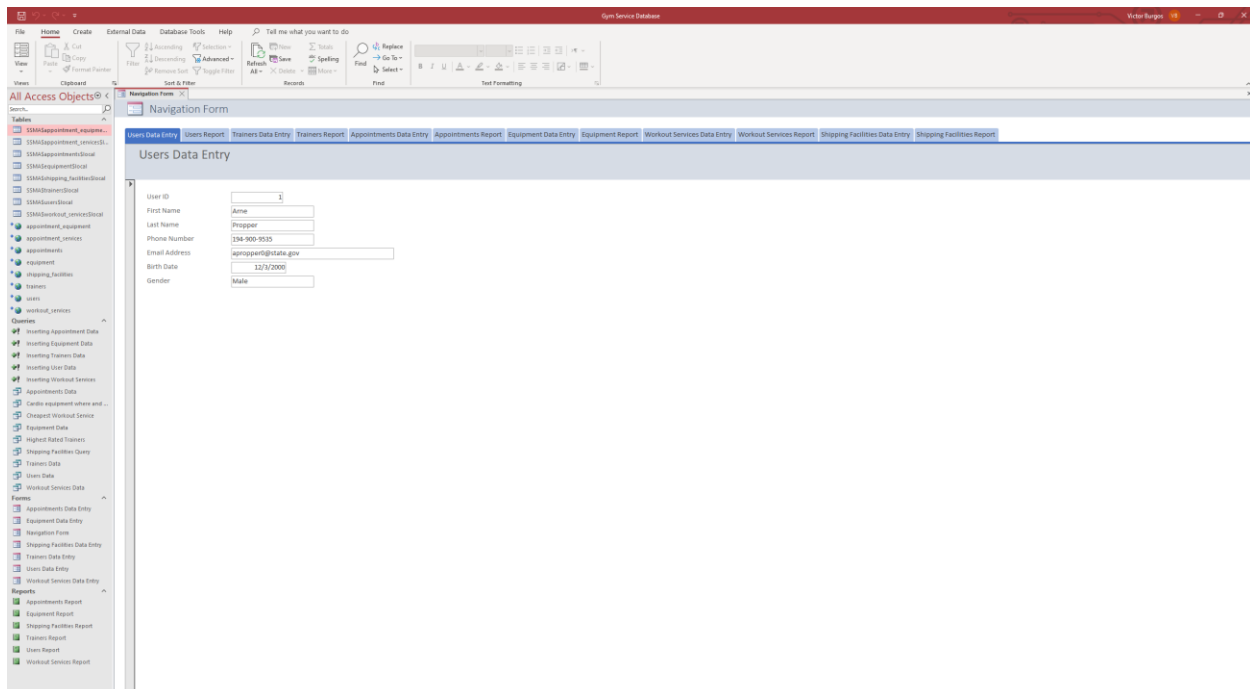
Layout includes: Users Data Entry, Users report, Trainers data entry, trainers report, appointments data entry, appointments report, equipment data entry, equipment report, workout services data entry, workout services report, shipping facilities data entry, shipping facilities report

Phase VI – Microsoft SQL Server (Extra Credit)

Microsoft SQL Server Management Studio



Microsoft Access with Linked Tables




Microsoft Azure Query Editor

Microsoft Azure

Search resources, services, and docs (G+/)

Home > cis3400_database_group12 (cis3400group12/cis3400_database_group12)

 cis3400_database_group12 (cis3400group12/cis3400_database_group12) | Query editor (preview) ...

SQL database

Search

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Overview

Activity log

Tags

Diagnose and solve problems

Getting started

Query editor (preview)

Settings

Compute + storage

Connection strings

Properties

Locks

Data management

Replicas

Sync to other databases

Integrations

cis3400_database_group12 (victorb...)

Showing limited object explorer here. For full capability please click here to open Azure Data Studio.

Tables

dbo.appointment_equipment

...

dbo.appointment_services

...

dbo.appointments

...

dbo.equipment

...

dbo.shipping_facilities

...

dbo.Switchboard Items

...

dbo.trainers

...

dbo.users

...

dbo.workout_services

...

Views

...

Stored Procedures

...

Query 1

Run Cancel query Save query Export data as Show only Editor

1

Phase VII - Conclusion

Software and Services

The group used Discord for primary communication and file sharing. Work was done on Discord both synchronously and asynchronously. Outlook was used to submit project stages and for secondary communication and file sharing. Google Docs was used to collaborate on text files.

Experience

The Systems Analysis (Entity Relationship Model) phase was probably the most difficult step due to the conceptualization of logistics and functionality of the trainer matching service. At first glance, a service might resemble a delivery business like UberEats or Doordash because of equipment. However, there was the extra factor of the selection of trainer and service. One interesting aspect of the service was the realization that trainers were not normal employees of the company, but would also be users. The best way for our group to meet that challenge was to imagine how such a service would work in web or mobile application form on the consumer side.

We had a more complete idea of how we wanted the final database to look because a great deal of time was spent at the first phase. This made the Logical and Physical Modeling phase much easier. We had simplified our list of entities, attributes, and relationships to the point where most of the relations already satisfied Third Normal Form, or needed a simple relation for Postal Codes, or were intersections.

Overall, the project was a great experience in learning how collaboration works in practice and how databases are used to serve an organization or business. Another difficult aspect of the project was attempting to figure out which business idea we wanted to go forward with and refining that idea. Asking questions about how the business collects revenue and what are the consumers looking for in the service created a better project outcome. This type of exercise is great for entrepreneurial thinking because it is easy to come up with ideas but obstacles come when giving structure to the idea.

If given another chance to do the project, we would have spent more time on the business concept, which would have probably produced a more unique idea. However, Professor Holowczak was quick to suggest a better idea than a simple gym business.

Business Solution

Our database allows customers to train at locations of their choosing with trainers and equipment on demand. Hopefully, this business model will allow customers to meet their training needs through ultimate convenience. The biggest challenge to this business overall is the trainer and equipment logistics, which we had determined to be addressed if the trainer uses a vehicle provided by the company to bring the equipment to the appointment. We believe that our database is structured in a way that allows scalability and flexibility to the business if we were to for example: implement brick and mortar training locations, track our vehicles, or hold group sessions.

Final Comments

The biggest contributor to the success of the project was the group members' mature attitude and commitment to see each phase through to completion. We respected our roles and responsibilities, but also helped each other even in responsibilities that we did not claim. Formal in-person meetings ended but we continued our work asynchronously and made sure to stay on track to meet deadlines.