

Project Step 6

<http://classwork.engr.oregonstate.edu:52983/>

Executive Summary

This project has evolved through multiple stages of feedback, testing, and refinement. What started as just a plan with basic structure eventually grew into a fully functional system with a cleaner design, better usability, and more realistic features.

One of the early changes we made involved redesigning the database to reduce redundancy and improve organization. We created a separate `Class_types` table instead of keeping that data inside the `Classes` table. The relationship between `Scheduled_classes` and `Instructors` was first removed while we figured out how to handle substitute instructors. We later added back a new attribute (`substitute_id`) to reflect real world scheduling needs more accurately.

We also made important changes to how registration numbers are handled. Instead of manually tracking `spots_filled` and `spots_available`, we switched to real-time subqueries that calculate those values automatically. Based on feedback, we also removed the unnecessary `registration_time` to simplify the schema.

As the project developed, we added full Create, Read, Update, and Delete (CRUD) functionality for `Members`, `Instructors`, `Registrations`, and `Classes`. We improved the interface by standardizing data formats, cleaning up the visual design, adding constraints to the email and phone number attributes and making the update forms easier to use with pre-filled data.

AI tools were helpful in several areas of the project. We used them for brainstorming design ideas, generating sample SQL queries, and refining code formatting. When AI would struggle with more complex or project-specific logic, human input and testing were very much needed. Peer feedback highlighted areas that we hadn't considered or details that we overlooked.

This project became much stronger because of all the changes we made along the way with the help of feedback and also implementing new knowledge from the material that we would learn every week. With a cleaner database structure, smarter logic, and a more user-friendly interface, the system now better reflects the kind of functionality that real users would need in a database-driven website.

Project Outline and Database Outline

Overview:

All-in-One Fitness is a facility that promotes health and wellness featuring 5 fully-equipped studios, dedicated to one of the following classes: Reformer Pilates, Hot Yoga, Dance, Boxing, and Tinikling. The company currently has over 500 members and 25 professional instructors that run the studio, generating \$20,000 of profit per month. Their mission is to be the one stop shop for everything fitness. With that in mind, the company is actively looking to expand their offerings to include any fitness class you can imagine – while bringing in the best instructors to lead the way. They are looking to modernize their processes to reduce the workload of the staff as they look to scale the business. Currently, their class schedules, instructors, member information and signups are tracked manually which has led to inefficiencies in the day-to-day operations of the business. A database-driven website will accurately and efficiently track the members, instructional staff, classes, studios, registrations and scheduled classes.

Database Outline:

1. **Members:** records the details of members of All-in-One Fitness
 - member_id: PRIMARY KEY, INT, AUTO_INCREMENT - each member has a unique id
 - first_name: VARCHAR (50), NOT NULL
 - last_name: VARCHAR (50), NOT NULL
 - birth_date: DATE, NOT NULL
 - email: VARCHAR(100), NOT NULL, UNIQUE
 - phone_num: VARCHAR (15), NOT NULL, UNIQUE
 - Relationships:
 - M:N (**Members-Scheduled_classes**) - Each member can take many scheduled classes and a scheduled class can be taken by many members
 - An Intersection Table/new Entity called Registrations is created with a 0:M (**Members-Registration**) relationship
 - 0:M Relationship between **Members** and **Registrations** implemented with member_id as a foreign key *inside* of **Registrations**
2. **Registrations:** entity and intersection table recording the registrations of members to classes
 - registration_id: PRIMARY KEY, INT, AUTO_INCREMENT
 - date: DATE, NOT NULL
 - status: VARCHAR (50), NOT NULL - Registered, Attended, Late, Cancelled, No_show (possible category table)

- schedule_id: FOREIGN KEY, INT, NOT NULL
- member_id: FOREIGN KEY, INT, NOT NULL

3. **Instructors:** records the details of the employed instructors

- instructor_id: PRIMARY KEY, INT, AUTO_INCREMENT - each instructor member has a unique id
- first_name: VARCHAR (50), NOT NULL
- last_name: VARCHAR (50), NOT NULL
- salary: DECIMAL(10,2), NOT NULL - how much each instructor gets paid yearly
- birth_date: DATE, NOT NULL
- email: VARCHAR(100), NOT NULL, UNIQUE
- phone_num: VARCHAR (15), NOT NULL, UNIQUE
 - Relationships:
 - 1:M Relationships between **Instructors** and **Classes** implemented with instructor_id as a foreign key *inside* of **Classes**
 - 0:M Relationships between **Instructors** and **Scheduled_classes** implemented with instructor_id (substitute_id) as a foreign key *inside* of **Scheduled_classes** - used to record substitute instructors, can be null

4. **Classes:** records the details of the different classes we offer

- class_id: PRIMARY KEY, INT, AUTO_INCREMENT - each class during the week has a specific ID
- class_type_id: FOREIGN KEY, INT, NOT NULL - 5 different class types, allows us to track which classes are getting booked the most (possible category table of 1: Pilates; 2: Hot Yoga; 3: Dance; 4: Boxing; 5: Tinikling)
- class_name: VARCHAR (50), NOT NULL - classes have different levels and types within them (Pilates Level 1 vs Pilates Level 2; Hip Hop vs Grooves)
- description: TEXT, NOT NULL - details of what the class will entail and difficulty or recommendations for preparation
- start_time: TIME, NOT NULL
- end_time: TIME, NOT NULL
- instructor_id: FOREIGN KEY, INT, NOT NULL - who's teaching the class
- studio_id: FOREIGN KEY, INT, NOT NULL - which studio the class is taught in
 - Relationships:
 - 0:M Relationships between **Classes** and **Scheduled_classes** implemented with class_id as a foreign key *inside* of **Scheduled_classes**
 - 0:M Relationship between **Classes** and **Class_types** implemented with class_type_id as a foreign key *inside* of **Classes**. Each class type can be associated with many classes.

5. **Class_types**

- class_type_id: PRIMARY KEY, INT, AUTO_INCREMENT - each type of class corresponds to a number referenced in the classes table
- type_name: VARCHAR(30), not NULL - name of the class (Boxing, Pilates, Dance, Tinikling, Yoga)
 - Relationships
 - 0:M Relationship between **Classes** and **Class_types** implemented with class_type_id as a foreign key inside of **Classes**. Each class type can be associated with many classes.

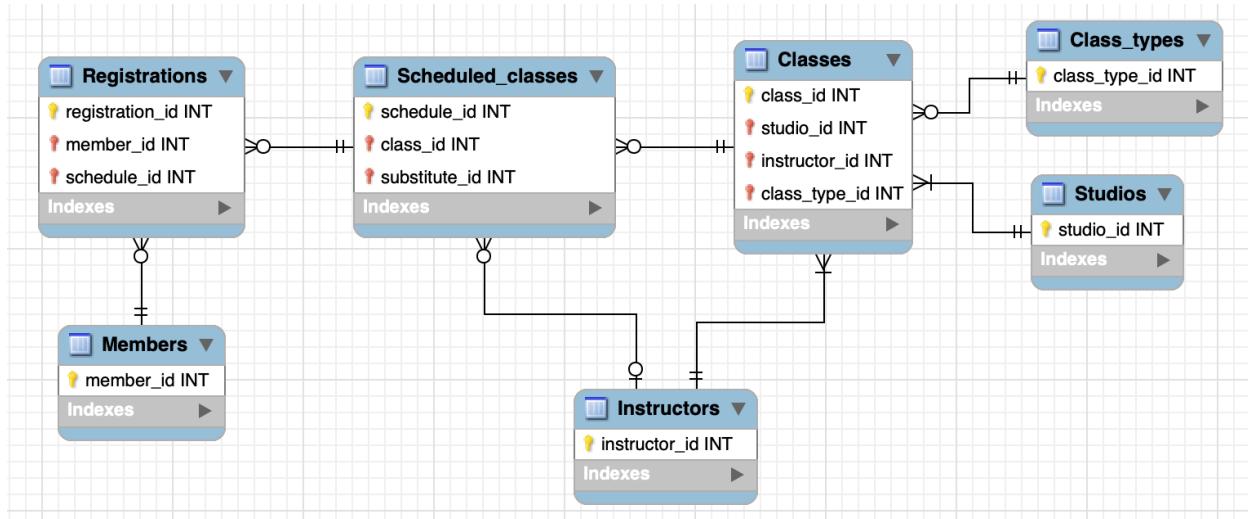
6. **Studios:** records the details of the different studios in our facility and what classes are taught at each one

- studio_id: PRIMARY KEY, INT, AUTO_INCREMENT - each studio has a unique ID
- studio_name: VARCHAR (30), NOT NULL - a designated studio for each class type
- max_capacity: INT, NOT NULL - each studio has different capacity depending on the class type
 - Relationships:
 - 1:M Relationships between **Studios** and **Classes** implemented with studio_id as a foreign key *inside* of **Classes**

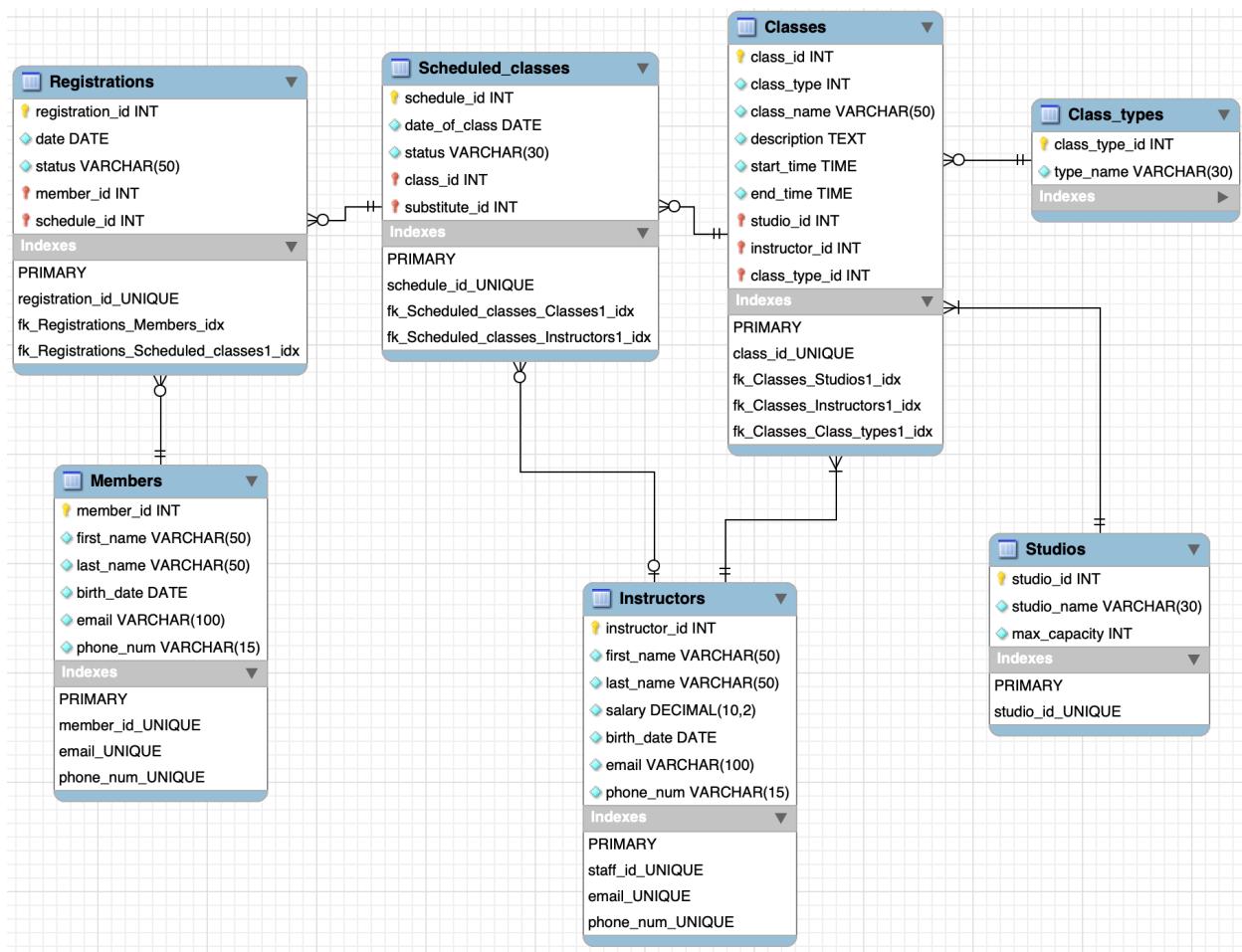
7. **Scheduled_classes:** records the details of all scheduled classes

- schedule_id: PRIMARY KEY, INT, AUTO_INCREMENT - each scheduled class has a unique ID
- date_of_class: DATE, NOT NULL - date that the class took place
- status: VARCHAR(30), not NULL - active, cancelled, substitute
- class_id: FOREIGN KEY, INT, NOT NULL - each class during the week has a specific ID
- substitute_id: FK, INT - used only to record substitute instructors, can be null
 - Relationships:
 - M:N (**Members-Scheduled_classes**) - Each member can take many scheduled classes and a scheduled class can be taken by many members
 - An Intersection Table/new Entity called Registrations is created with a 0:M (Scheduled_classes-Registration) relationship
 - 0:M Relationship between **Scheduled_classes** and **Registrations** implemented with schedule_id as a foreign key *inside* of **Registrations**

Entity-Relationship Diagram:



Schema:



Sample Data:

Classes

class_id	class_type_id	class_name	description	start_time	end_time	instructor_id	studio_id
1	1	Knockout Burn	A high-intensity boxing class focused on cardio an...	18:00:00	19:00:00	1	1
2	2	Core Elevation	A mat-based session targeting core strength and po...	08:00:00	09:00:00	2	2
3	3	Rhythm & Flow	A fusion dance workout mixing hip-hop and Afrobeat...	19:30:00	20:30:00	5	3
4	4	Bamboo Beats	Traditional Filipino Tinikling dance with a modern...	17:00:00	18:00:00	6	4
5	5	Sunrise Stillness	Gentle sunrise yoga for breathwork and mindfulness	07:00:00	08:00:00	3	5
6	1	Knockout Burn Advanced	Advanced level boxing class focused on technique a...	18:00:00	19:00:00	1	1
7	2	Pilates Sculpt	Mat Pilates combined with weights to sculpt and to...	16:00:00	17:00:00	4	2

Class_Types

class_type_id	type_name
1	Boxing
2	Pilates
3	Dance
4	Tinikling
5	Yoga

Instructors

instructor_id	first_name	last_name	salary	birth_date	email	phone_num
1	Jordan	Reyes	24000.00	1987-03-15	jordan.reyes@onefitness.com	212-555-1832
2	Sienna	Brooks	25000.00	1990-08-22	sienna.brooks@onefitness.com	917-555-2648
3	Marcus	Nguyen	23000.00	1985-11-06	marcus.nguyen@onefitness.com	646-555-7371
4	Layla	Patel	5000.00	1992-01-30	layla.patel@onefitness.com	718-555-4902
5	Elijah	Kim	24000.00	1988-06-18	elijah.kim@onefitness.com	347-555-8120
6	Chloe	Martinez	25000.00	1993-05-10	chloe.martinez@onefitness.com	332-555-0923

Members

member_id	first_name	last_name	birth_date	email	phone_num
1	Darren	Manalastas	1998-11-11	darrenm@yahoo.com	111-111-1111
2	Paulene	Pare	1998-04-19	paulenep@yahoo.com	222-222-2222
3	Maya	Thompson	2000-07-12	maya.thompson@yahoo.com	333-333-3333
4	Leo	Ramirez	1994-11-03	leo.ramirez@yahoo.com	444-444-4444
5	Alina	Chen	1998-03-27	alina.chen@yahoo.com	555-555-5555

Registrations

registration_id	date	status	member_id	schedule_id
1	2025-04-10	no show	1	3
2	2025-04-11	registered	3	2
3	2025-04-12	attended	1	4
4	2025-04-13	late	4	1
5	2025-04-14	cancelled	4	2

Scheduled_classes

schedule_id	date_of_class	status	class_id	substitute_id
1	2025-04-10	active	1	NULL
2	2025-04-10	active	2	NULL
3	2025-04-10	cancelled	3	NULL
4	2025-04-10	substitute	4	1
5	2025-04-11	active	5	NULL
6	2025-04-11	cancelled	6	NULL
7	2025-04-11	active	7	NULL
8	2025-04-12	substitute	1	3

Studios

studio_id	studio_name	max_capacity
1	Studio A	25
2	Studio B	15
3	Studio C	30
4	Studio D	25
5	Studio E	30

Screen Captures of Website**Home Page**



Dashboard

Fitness Dashboard

[Classes](#) [Class Types](#) [Instructors](#) [Members](#)

[Registrations](#) [Scheduled Classes](#) [Studios](#)

Classes (READ, UPDATE)

- Reset database functionality (DDL Stored Procedure)

All-in-One Fitness Class Management System

Darren Manalastas
Paulene Patrish Pare
Group 118

Home Classes Class Types Instructors Members Registrations Scheduled Classes Studios

Classes

Class ID	Class Name	Class Type	Description	Start Time	End Time	Instructor Name	Studio Name
1	Knockout Burn	Boxing	A high-intensity boxing class focused on cardio and power.	06:00 PM	07:00 PM	Jordan Reyes	Studio A
2	Core Elevation	Pilates	A mat-based session targeting core strength and posture	08:00 AM	09:00 AM	Sienna Brooks	Studio B
3	Rhythm & Flow	Dance	A fusion dance workout mixing hip-hop and Afrobeat styles	07:30 PM	08:30 PM	Elijah Kim	Studio C
4	Bamboo Beats	Tinikling	Traditional Filipino Tinikling dance with a modern twist	05:00 PM	06:00 PM	Chloe Martinez	Studio D
5	Sunrise Stillness	Yoga	Gentle sunrise yoga for breathwork and mindfulness	07:00 AM	08:00 AM	Marcus Nguyen	Studio E
6	Knockout Burn Advanced	Boxing	Advanced level boxing class focused on technique and sparring	06:00 PM	07:00 PM	Jordan Reyes	Studio A
7	Pilates Sculpt	Pilates	Mat Pilates combined with weights to sculpt and tone your body	04:00 PM	05:00 PM	Layla Patel	Studio B

Update Class Details

Select Class: 1 - Knockout Burn

Class Name: Knockout Burn Class Type: 1 - Boxing Description: A high-intensity boxing class focused on cardio and power. Start Time: 06:00 PM End Time: 07:00 PM Instructor: 1 - Jordan Reyes Studio: 1 - Studio A

[Update Class](#)

[Reset Database](#)

Class Types (READ)

Home Classes Class Types Instructors Members Registrations Scheduled Classes Studios

Class Types

Type ID	Type Name
1	Boxing
2	Pilates
3	Dance
4	Tinikling
5	Yoga

Instructors (CREATE, READ, UPDATE, DELETE)

- Reset database functionality (DDL Stored Procedure)

All-in-One Fitness Class Management System

Darren Manalastas
Paulene Patrish Pare
Group 118

Home Classes Class Types Instructors Members Registrations Scheduled Classes Studios

Instructors							
Instructor ID	First Name	Last Name	Salary	Birth Date	Email	Phone Number	Actions
1	Jordan	Reyes	24,000.00	03-15-1987	jordan.reyes@onefitness.com	212-555-1832	<button>Delete Instructor</button>
2	Sienna	Brooks	25,000.00	08-22-1990	sienna.brooks@onefitness.com	917-555-2648	<button>Delete Instructor</button>
3	Marcus	Nguyen	23,000.00	11-06-1985	marcus.nguyen@onefitness.com	646-555-7371	<button>Delete Instructor</button>
4	Layla	Patel	5,000.00	01-30-1992	layla.patel@onefitness.com	718-555-4902	<button>Delete Instructor</button>
5	Elijah	Kim	24,000.00	06-18-1988	elijah.kim@onefitness.com	347-555-8120	<button>Delete Instructor</button>
6	Chloe	Martinez	25,000.00	05-10-1993	chloe.martinez@onefitness.com	332-555-0923	<button>Delete Instructor</button>

Add a New Instructor

First Name: Last Name: Salary: Birth Date: Email: Phone Number: Insert Instructor

Update Instructor Details

Select Instructor: 1 - Jordan Reyes

First Name:	Jordan	Last Name:	Reyes	Salary:	24000.00	Birth Date:	03/15/1987	Email:	jordan.reyes@onefitness.com	Phone Number:	212-555-1832	<button>Update Instructor</button>
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[Reset Database](#)

Members (CREATE, READ, UPDATE, DELETE)

- Reset database functionality (DDL Stored Procedure)

Home Classes Class Types Instructors Members Registrations Scheduled Classes Studios

Members							
Member ID	First Name	Last Name	Birth Date	Email	Phone Number	Action	
1	Daren	Manalastas	11-11-1998	darenm@yahoo.com	111-111-1111	<button>Delete Member</button>	
2	Paulene	Pare	04-19-1998	paulenep@yahoo.com	222-222-2222	<button>Delete Member</button>	
3	Maya	Thompson	07-12-2000	maya.thompson@yahoo.com	333-333-3333	<button>Delete Member</button>	
4	Leo	Ramirez	11-03-1994	leo.ramirez@yahoo.com	444-444-4444	<button>Delete Member</button>	
5	Alina	Chen	03-07-1998	alina.chen@yahoo.com	555-555-5555	<button>Delete Member</button>	
6	Paulene Patrish Pare		04-19-2000	paulenepatrishpare000@gmail.com	909-595-5451	<button>Delete Member</button>	

Add a New Member

First Name: Last Name: Birth Date: Email: Phone Number: Insert Member

Update Member Details

Select Member: 1 - Daren Manalastas

First Name:	Daren	Last Name:	Manalastas	Birth Date:	11/11/1998	Email:	darenm@yahoo.com	Phone Number:	111-111-1111	<button>Update Member</button>
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[Reset Database](#)

Scheduled Classes (READ)

Home Classes Class Types Instructors Members Registrations Scheduled Classes Studios

Scheduled Classes

Schedule ID	Class Date	Class Name	Instructor Name	Studio Name	Start Time	Max Capacity	Spots Filled	Spots Available	Class Status
1	04-10-2025	Knockout Burn	Jordan Reyes	Studio A	06:00 PM	25	1	24	Active
2	04-10-2025	Core Elevation	Sienna Brooks	Studio B	08:00 AM	15	2	13	Active
3	04-10-2025	Rhythm & Flow	Elijah Kim	Studio C	07:30 PM	30	1	29	Cancelled
4	04-10-2025	Bamboo Beats	Jordan Reyes	Studio D	05:00 PM	25	1	24	Substitute
5	04-11-2025	Sunrise Stillness	Marcus Nguyen	Studio E	07:00 AM	30	0	30	Active
6	04-11-2025	Knockout Burn Advanced	Jordan Reyes	Studio A	06:00 PM	25	0	25	Cancelled
7	04-11-2025	Pilates Sculpt	Layla Patel	Studio B	04:00 PM	15	0	15	Active
8	04-12-2025	Knockout Burn	Marcus Nguyen	Studio A	06:00 PM	25	0	25	Substitute

Registrations (CREATE, READ, UPDATE, DELETE)

- Insert from a M:N
- Update from a M:N
- Delete from a M:N
- Reset database functionality (DDL Stored Procedure)

Home Classes Class Types Instructors Members Registrations Scheduled Classes Studios

Registrations

Registration ID	Registration Date	Member Name	Class Schedule	Status	Actions
1	04-10-2025	Darren Manalastas	04-10-2025, 07:30 PM - Rhythm & Flow	No Show	<button>Delete Registration</button>
2	04-11-2025	Maya Thompson	04-10-2025, 08:00 AM - Core Elevation	Registered	<button>Delete Registration</button>
3	04-12-2025	Darren Manalastas	04-10-2025, 05:00 PM - Bamboo Beats	Attended	<button>Delete Registration</button>
4	04-13-2025	Leo Ramirez	04-10-2025, 06:00 PM - Knockout Burn	Late	<button>Delete Registration</button>
5	04-14-2025	Leo Ramirez	04-10-2025, 08:00 AM - Core Elevation	Cancelled	<button>Delete Registration</button>

Register a Member to a Class

Registration Date: / / Member: Select Member Class Schedule: Select Schedule Status: Registered Insert Registration

Update Registration Details

Select Registration: 1 - Darren Manalastas 04-10-2025, 07:30 PM - Rhythm & Flow

Class Schedule: 3 - 04-10-2025, 07:30 PM - Rhythm & Flow Status: No Show Update Registration

Studios (READ)

Studio ID	Studio Name	Max Capacity
1	Studio A	25
2	Studio B	15
3	Studio C	30
4	Studio D	25
5	Studio E	30

Citations:

*Spraul, T. (2024, October 12). *How profitable is owning a gym? (average gym profit margins by gym type)*. Exercise.com | Software to grow your fitness business.

<https://www.exercise.com/grow/how-profitable-is-owning-a-gym/>