

CS 340: Project Step 2 Draft  
 Wassim El Moznine & Billie Harrer  
 Group #125 - "Tuple? I thought you said taco"

## Project Title: Bicoastal Orchids Webstore

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### a) Fixes based on Feedback from Step 1:

#### TA Comments for Step 1 Final

- Overview Quality: I suggest **expanding on your overview** a bit more.
- DB Outline: Each entity must have a **description (sales and growers)**. Please include this in your next draft.
- 1:M Relationships: Your Sales 1:M relationship with Orchids is formed incorrectly. In 1:M relationship, the ID of the "one" should be an FK in the "many". **So if a single sale were to have many orchids, the attribute saleID must be an FK in Orchids.**

Since there's the possibility that an Orchid might not be sold yet, **you can make this FK nullable** (exclude not NULL allows the attribute to be NULL), you can also default it to NULL.

**I do recommend an M:M relationship** between Orchids and Sales as there can be multiple orchid products with the same species (ex. 5 lilac orchids), though I'm assuming that they can be the same species but different growers and prices depending on the quality/height/etc ( this must be included in your overview if so!) . If that's not the case and you will have multiples of the same orchids with the same price and grower, then you must have an M:M relationship as the relationship right now would cause update/delete/creation errors in this scenario.

- M:N Relationship: Your explanation of the M:M relationship between Growers and Orchids is correct in the Relationship section of each entity, but it is being formed incorrectly. You have the growerID as an FK in orchids, **however an M:M relationship should be formed using an intersection table containing both IDs of each entity as an FK.**

So instead of having growerID in Orchids, growerID and OrchidID should be present in the **intersection table, Orchids\_Growers**.

You do not need to show this intersection table in the ERD if there are no additional attributes in Orchids\_Growers besides the FKs, but you will have to

remove growerID from Orchids.

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## Updates

- Expanded overview
- Added descriptions to Sales and Growers
- Fixed 1:M Sales to Orchids by changing location of the FK from sales to orchids. Made this FK nullable.
- Updated the FK for the Orchids\_Growers intersection table
- The number of orchids sold per month is reduced by a factor of 10 for logical purposes.

## Not Implemented

- The TA suggested an M:M relationship between Orchids & Sales. The store only carries 1 quantity of a given species— specifically the *best* of that given species. Since it is the best, that orchid will not have multiple quantities. These details have been added to the expanded overview.
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## b) Project Outline and Database Outline - Updated Version:

### 1) Overview

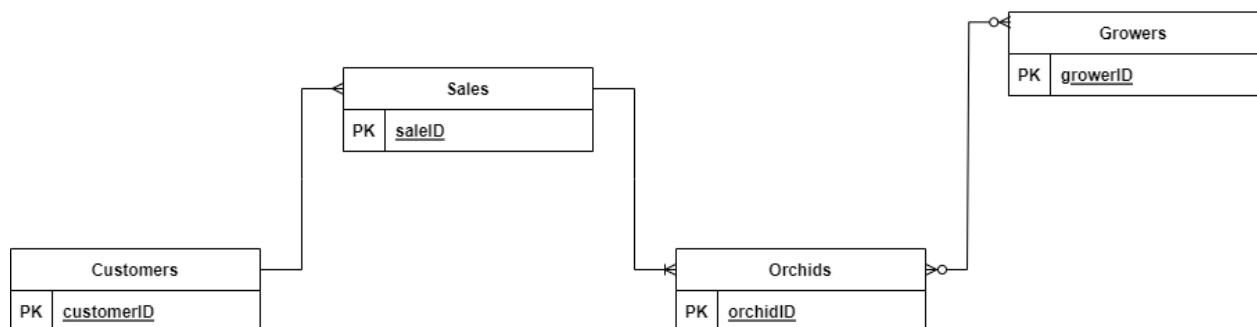
Bicoastal Orchids is a small shop that sources and sells the best orchid of a given species. The store carries 50 species sourcing from 10 different growers selling around 10 orchids per month. The website gives customers the ability to create sales to order orchids. The shop owner can use the website to track sales, customers, orchid inventory, as well as the information of the orchid growers. The shop doesn't allow the customers to know who grows the orchids, but it is necessary for the shop owner to have the growers' information in the database.

### 2) Database Outline, in Words

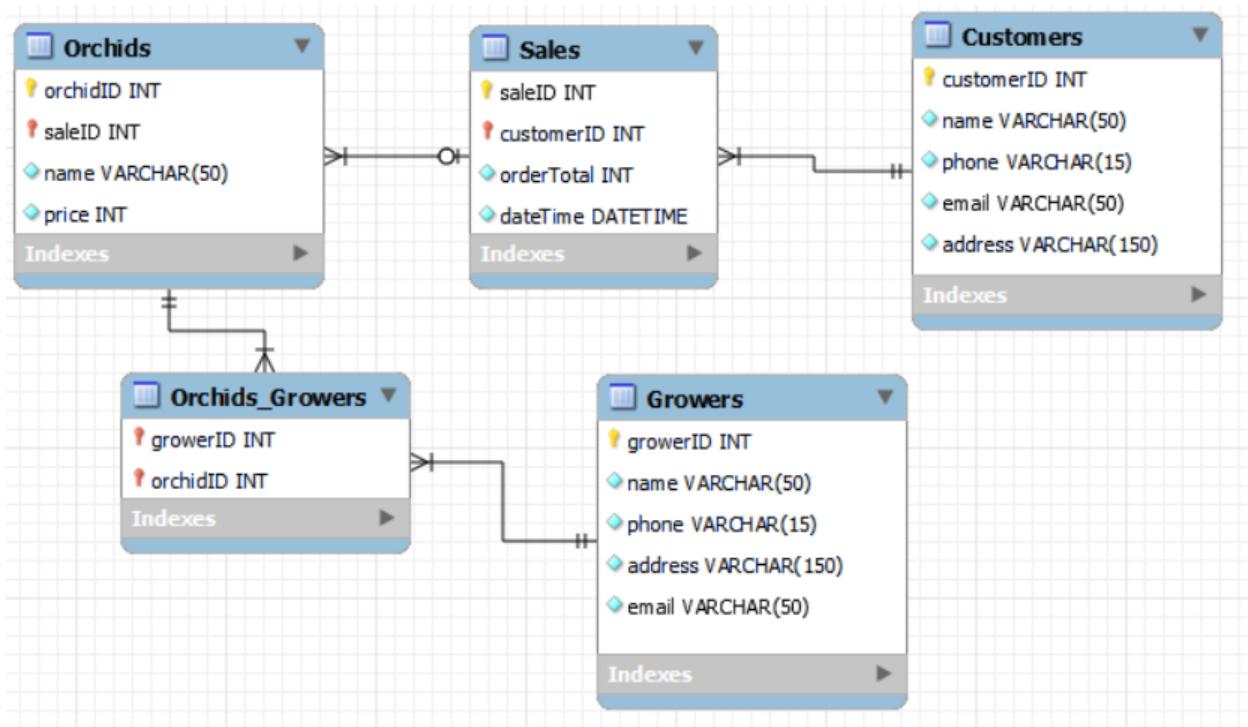
- Orchids: records the details of the various orchid
  - orchidID: int, auto\_increment, unique, not NULL, PK
  - saleID: int, default NULL, FK
  - name: varchar(50), not NULL
  - price: int, not Null
  - Relationship: an M:M relationship exists between Orchids and Growers and is shown in a Orchids\_Growers intersection table
  - Relationship: a 1:M relationship between Orchids and Sales is implemented with saleID as a FK inside of Orchids

- Sales: records the details of sales of orchids
  - saleID: int, auto\_increment, unique, not NULL, PK
  - customerID: int, not NULL, FK
  - orderTotal: int, NOT NULL,
  - dateTime: datetime, not NULL
  - Relationship: a 1:M relationship between Customers and Sales is implemented with customerID as a FK inside of Sales
  - Relationship: a 1:M relationship between Orchids and Sales is implemented with saleID as a FK inside of Orchids
- Growers
  - growerID: int, auto\_increment, unique, not NULL, PK
  - name: varchar(50), not NULL
  - phone: varchar(15), unique, not NULL
  - email: varchar(50), unique, not NULL
  - address: varchar(150), not NULL
  - Relationship: an M:M relationship exists between Orchids and Growers and is shown in a Orchids\_Growers intersection table
- Customers: records the details of Customers we do business with
  - customerID: int, auto\_increment, unique, not NULL, PK
  - name: varchar(50), not NULL
  - phone: varchar(15), unique, not NULL
  - email: varchar(50), unique, not NULL
  - address: varchar(150), not NULL
  - Relationship: a 1:M relationship between Customers and Sales is implemented with customerID as a FK inside of Sales

### c) Entity-Relationship Diagram:



## d) Schema:



## e) Example Data:

**Orchids**

orchidId	Name	Market Price
1	Rntda. Cherry Rose	\$45
2	Phrag. QF Ula'ula	\$75
3	Maxillaria tenuifolia	\$36
4	Rth. Love Passion 'Orange Bird'	\$30
5	Phalaenopsis tetraspis	\$35
Source: <a href="https://www.palmerorchids.com/">https://www.palmerorchids.com/</a>		

**Growers**

growerID	name	phone	email	address
1	Chadwick & Son Orchids	804-598-7560	greenhouse@chadwickorchids.com	1240 Dorset Road, Powhatan, VA 23139
2	Carter and Holmes	803-276-057	orchids@carterandholmes.com	629

	Orchids	9		Mendenhall Road, Newberry, SC 29108
	<a href="#">3</a> Palmer Orchids	941-322-164 4	info@palmerorchids.com	22700 Taylor Drive, Bradenton, FL 34211
	<a href="#">4</a> Odoms Orchids	772-267-945 9	odomsorchids@comcast.net	1611 S. Jenkins Rd., Ft. Pierce, FL. 34947
	<a href="#">5</a> Orchids by Hausermann	630-543-685 5	info@orchidsbyhausermann.com	2N134 Addison Road, Villa Park, IL 60181-1191

Sources:

<https://chadwickorchids.com/>

<https://www.carterandholmes.com/>

<https://www.palmerorchids.com/phalaenopsis/phalaenopsis-tetraspis>

<https://odoms.com/>

<https://www.orchidsbyhausermann.com/>

## Customers

customerID	name	phone	email	address
1	Elin West	511-255-7584	elin.west@email.com	78318 Kozey Mountains, New Jody, DE 15321
2	Rob Ledner	602-075-3616	rob.ledner@email.com	178 Lynn Spring, North Spring, NY 09390
3	Elias Mante	653-563-9340	elias.mante@email.com	2181 Elwood Mall, East Duaneport, PA 27015
4	Milagro Harris	788-304-5279	milagro.harris@email.com	28828 Shawnda Village, West Matt, NM 72622
source:		<a href="https://random-data-api.com/api/v2/users?size=4&amp;is_xml=true">https://random-data-api.com/api/v2/users?size=4&amp;is_xml=true</a>		

**Sales**

saleID	customerID	orderTotal	dateTime
1	4	45	2023-01-15 23:55:23
2	1	40	2023-01-18 10:13:01
3	2	85	2023-01-18 17:37:34

## STEP 1 Final Draft

### Feedback by the Peer Reviewers:

#### Review 1:

I like your project idea! Orchids are so pretty.

I think your project meets the requirements in terms of having the required numbers of entities, attributes, and relationships, but I think you need to **add a FK for GrowerID to the Sales entity**. Right now, the Sales entity records the sale of an OrchidID, but since there is a M:M relationship between Orchids and Growers, how do you know which grower sold the orchid? If this database is to help growers know when to restock, I think that's a key piece of data you need. :)

Also, if you want to build it out your **Sales entity a bit further, you could make it so that customers could order more than 1 orchid per sale**. Currently, it looks like this database is set up to record 1 orchid per sale, given the 1:1 relationship with Sales to Orchids. You could change it to 1:M instead. And if you do that, you would also want to include an **order total attribute in the Sales entity**. I would probably recommend that anyway, but I think it would definitely be necessary if a sales record includes multiple orchids.

Edit: Whoops, just saw we have to fill out a specific rubric, so here's that:

- Does the overview describe what problem is to be solved by a website with DB back end?
  - Yes - it is clear this is a database for growers to manage sales and inventory
- Does the overview list specific facts?
  - Yes
- Are at least four entities described and does each one represent a single idea to be stored as a list?
  - Yes, although as mentioned above, **I recommend building out the Sales entity a bit more to record the GrowerID**, so that when a sale is recorded, you know which grower sold the orchid.

- Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?
  - Yes
- Are 1:M relationships correctly formulated? Is there at least one M:M relationship? Does the ERD present a logical view of the database?
  - The 1:M connector is the wrong way in the ERD for Sales and Customers, but the relationship is described correctly.
  - There is a M:M relationship between orchids and growers
- Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?
  - Yes to all of the above.

## Review 2:

Hi Billie and Wassim,

I really your idea and it was great to see how you set up the introduction for your project. When it comes to main requirements, I believe that you project has that which means that you have the queries already done and they look pretty good to me. But like Ellen mentioned before me, you should definitely have a relationship between the growers and the sales because again how would you know which grower sold it.

- Does the overview describe what problem is to be solved by a website with DB back end?
  - Yes we know what problem is being solved as there is an introduction present.
- Does the overview list specific facts?
  - I believe it is.
- Are at least four entities described and does each one represent a single idea to be stored as a list?
  - Yes there are at least 4 entities described and yes they each represent a single idea to be stored.
- Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?
  - Yes there are but I think that your entities can definitely expand more like you can add more information about the sales and customers. Phone number could be added and even when the purchase was made could be added as that will keep track of the sales made. I think that you could add more grower information aswell like their phone number and date.
- Are 1:M relationships correctly formulated? Is there at least one M:M relationship? Does the ERD present a logical view of the database?

- Yes they are correctly formulated and there is at least one M:M relationship. And the ERD present a logical view.
- Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?
  - Yes the naming between overview and entity/attributes is consistent. All naming convention have been made.

### Review 3:

Hi Group 125, I outlined a few areas that possibly need to be addressed in my review below. Overall though, your project idea was very clear and easy to understand. Great work!

- Does the overview describe what problem is to be solved by a website with DB back end?

Yes, the overview clearly specifies that Bicoastal Orchids is a small florist shop in need of database-driven website to help keep track of sales and orchid quantities in need of restocking.

- Does the overview list specific facts?

Yes, the overview clearly states that Bicoastal Orchids is a shop that sources 50 species of orchids from 10 different growers selling around 100 orchids per month.

- Are at least four entities described and does each one represent a single idea to be stored as a list?

There are at least 4 entities described, all of each represent a single idea: Orchids, Sales, Growers, and Customers.

- Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?

No, the **outline leaves out the purposes for the Sales and Growers entities**. Don't forget to add those in for the Final Draft. The attribute datatypes and constraints are clearly outlined. The relationships between entities are also clearly outlined, although I would agree with Ellen to maybe look into the relationship between Orchids and Sales, as a M:1 might make more sense to reflect a sale involving many orchids.

- Are 1:M relationships correctly formulated? Is there at least one M:M relationship? Does the ERD present a logical view of the database?



All the 1:M relationships are correctly formulated. Each Customer can have many Sales orders. There is at least one M:M relationship, the one between Orchids and Growers. The ERD, however, doesn't depict the 1:M relationship between Customers and Sales. Don't forget to add that in!

- Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?

There is a consistency in naming between overview and entity/attributes, entities are plural and attributes are singular, and there is a correct use of capitalization for naming.

## Review 4

- Does the overview describe what problem is to be solved by a website with DB back end?

Yes, although the website appears to be meant to be customer-facing, you might want to change that to make it slightly simpler.

- Does the overview list specific facts?

Yes, all of the facts appear to be thought out

- Are at least four entities described and does each one represent a single idea to be stored as a list?

Yes, and each entity appears to be as simple as possible and can't be broken down further

- Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?

Yes, the attributes/relationships are all readable and well explained

- Are 1:M relationships correctly formulated? Is there at least one M:M relationship? Does the ERD present a logical view of the database?

All of the 1:M relationships appear to be correctly formulated, and there is a M:M relationship between orchids and growers. The ERD appears to match the entities.

I would actually recommend a second M:M relationship between Sales and Orchids. Right now one order of different orchids appears to be handled by multiple Sales entries, which would cause the date to be repeated across multiple rows.

- Is there consistency in a) naming between overview and entity/attributes  
b) entities plural, attributes singular c) use of capitalization for naming?

All naming appears to be consistent

## TA Comments for Step 1 Draft:

Great work group 125!

Just a few thoughts:

- Can a single sale have multiple orchids? That is, can a person purchase multiple orchids through one transaction (Sales to Orchids 1:M)
- Can a sale have multiple customers ( Sales 1:M with Customers shown in your ERD) or can a customer have multiple sales ( opposite to what you have) ?

## Actions based on the feedback:

The reviews' feedback largely overlapped, but feedback from each review that was incorporated into the final draft is highlighted within the reviews above. Additional fields were suggested in the feedback as well as updated relationships. An error to the original ERD diagram was also fixed based on feedback from reviewers.

The suggestion to add growerID to Sales was not incorporated into the final draft as the orchidID field can be used to find the growerID so it seems redundant to include this.

Additionally, the "quantity" attribute in the Orchids entity was removed as each orchid would have a unique orchidID, so for that orchidID, the quantity would always be 1.

Updates are outlined below:

### Entity Updates:

- Sales:
  - Added orderTotal
  - Changed date to dateTime
  - Added 1:M relationship from sales to orchids
- Customers
  - Added phoneNumber
- Growers

- Added phoneNumber
- Orchids
  - Removed quantity

ERD Updates:

- Fixed 1:M relationship for Customers to Sales
- Changed 1:1 relationship between Sales and Orchids to a 1:M relationship

## STEP 1 Final Draft:

### a) Overview

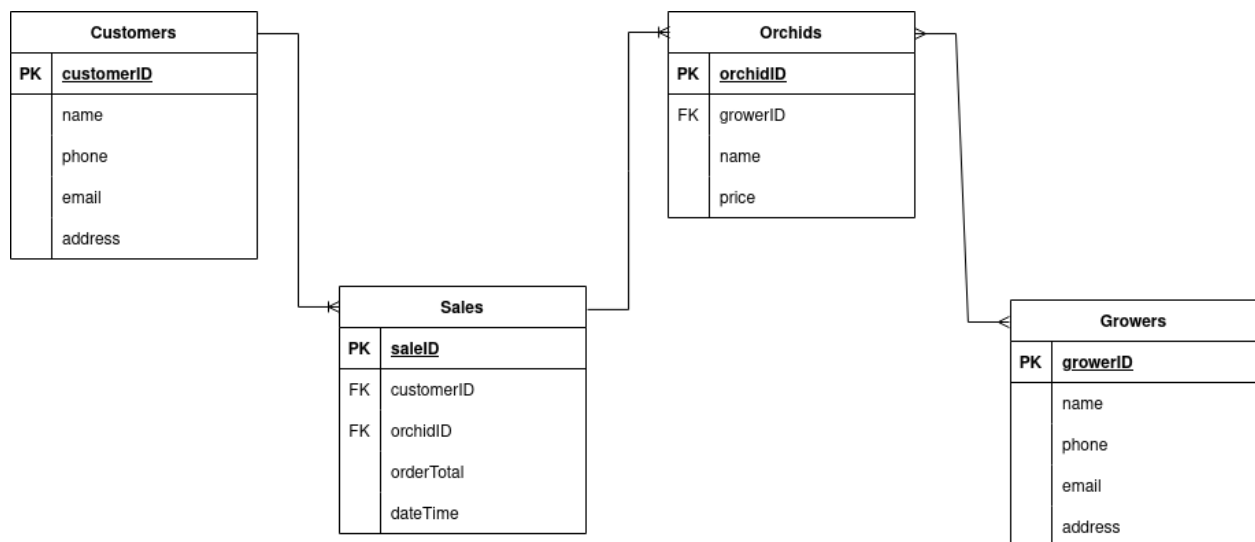
Bicoastal Orchids is a small shop that sources 50 species of orchids from 10 different growers selling around 100 orchids per month. The website gives customers the ability to create sales to order orchids. The growers database is utilized by the shop owner to determine where to order orchids to restock the store.

### b) Database Outline, in Words

- Orchids: records the details of the various orchid
  - orchidID: int, auto\_increment, unique, not NULL, PK
  - growerID: int, not NULL, FK
  - name: varchar(50), not NULL
  - price: int, not Null
  - Relationship: an M:M relationship exists between Orchids and Growers and is shown in a Orchids\_Growers intersection table
  - Relationship: a 1:M relationship between Orchids and Sales is implemented with orchidID as a FK inside of Sales
- Sales:
  - saleID: int, auto\_increment, unique, not NULL, PK
  - customerID: int, not NULL, FK
  - orchidID: int, not NULL, FK
  - orderTotal: smallmoney, NOT NULL\*
  - dateTime: datetime, not NULL
  - Relationship: a 1:M relationship between Customers and Sales is implemented with customerID as a FK inside of Sales
  - Relationship: a 1:M relationship between Orchids and Sales is implemented with orchidID as a FK inside of Sales

- Growers
  - growerID: int, auto\_increment, unique, not NULL, PK
  - name: varchar(50), not NULL
  - phone: varchar(15), unique, not NULL
  - email: varchar(50), unique, not NULL
  - address: varchar(150), not NULL
  - Relationship: an M:M relationship exists between Orchids and Growers and is shown in a Orchids\_Growers intersection table
- Customers: records the details of Customers we do business with
  - customerID: int, auto\_increment, unique, not NULL, PK
  - name: varchar(50), not NULL
  - phone: varchar(15), unique, not NULL
  - email: varchar(50), unique, not NULL
  - address: varchar(150), not NULL
  - Relationship: a 1:M relationship between Customers and Sales is implemented with customerID as a FK inside of Sales

### c) Entity-Relationship Diagram:



# First Draft:

## a) Overview

Bicoastal Orchids is a small shop that sources 50 species of orchids from 10 different growers selling around 100 orchids per month. The website gives customers the ability to create sales to order orchids. The growers database is utilized by the shop owner to determine where to order orchids to restock the store.

## b) Database Outline, in Words

- Orchids: records the details of the various orchid
  - orchidID: int, auto\_increment, unique, not NULL, PK
  - growerID: int, not NULL, FK
  - name: varchar(50), not NULL
  - price: int, not Null
  - quantity: int, not Null
  - Relationship: an M:M relationship exists between Orchids and Growers and is shown in a Orchids\_Growers intersection table
  - Relationship: a 1:1 relationship between Orchids and Sales is implemented with orchidID as a FK inside of Sales
- Sales
  - saleID: int, auto\_increment, unique, not NULL, PK
  - customerID: int, not NULL, FK
  - orchidID: int, not NULL, FK
  - date: DATE, not NULL
  - Relationship: a 1:M relationship between Customers and Sales is implemented with customerID as a FK inside of Sales
  - Relationship: a 1:1 relationship between Orchids and Sales is implemented with orchidID as a FK inside of Sales
- Growers
  - growerID: int, auto\_increment, unique, not NULL, PK
  - name: varchar(50), not NULL
  - email: varchar(50), unique, not NULL
  - address: varchar(150), not NULL
  - Relationship: an M:M relationship exists between Orchids and Growers and is shown in a Orchids\_Growers intersection table
- Customers: records the details of Customers we do business with
  - customerID: int, auto\_increment, unique, not NULL, PK
  - name: varchar(50), not NULL
  - email: varchar(50), unique, not NULL

- address: varchar(150), not NULL
- Relationship: a 1:M relationship between Customers and Sales is implemented with customerID as a FK inside of Sales

### c) Entity-Relationship Diagram:

