

# CPSC 304 Project Cover Page

Milestone #: 4

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Group Number: 34

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

**Repository Link:** [https://github.students.cs.ubc.ca/CPSC304-2023S-T2/project\\_k1s9g\\_k4r6m\\_t8a8t](https://github.students.cs.ubc.ca/CPSC304-2023S-T2/project_k1s9g_k4r6m_t8a8t)

**Program Link:** [https://www.students.cs.ubc.ca/~kynguyen/Restaurants\\_Manager.php](https://www.students.cs.ubc.ca/~kynguyen/Restaurants_Manager.php)

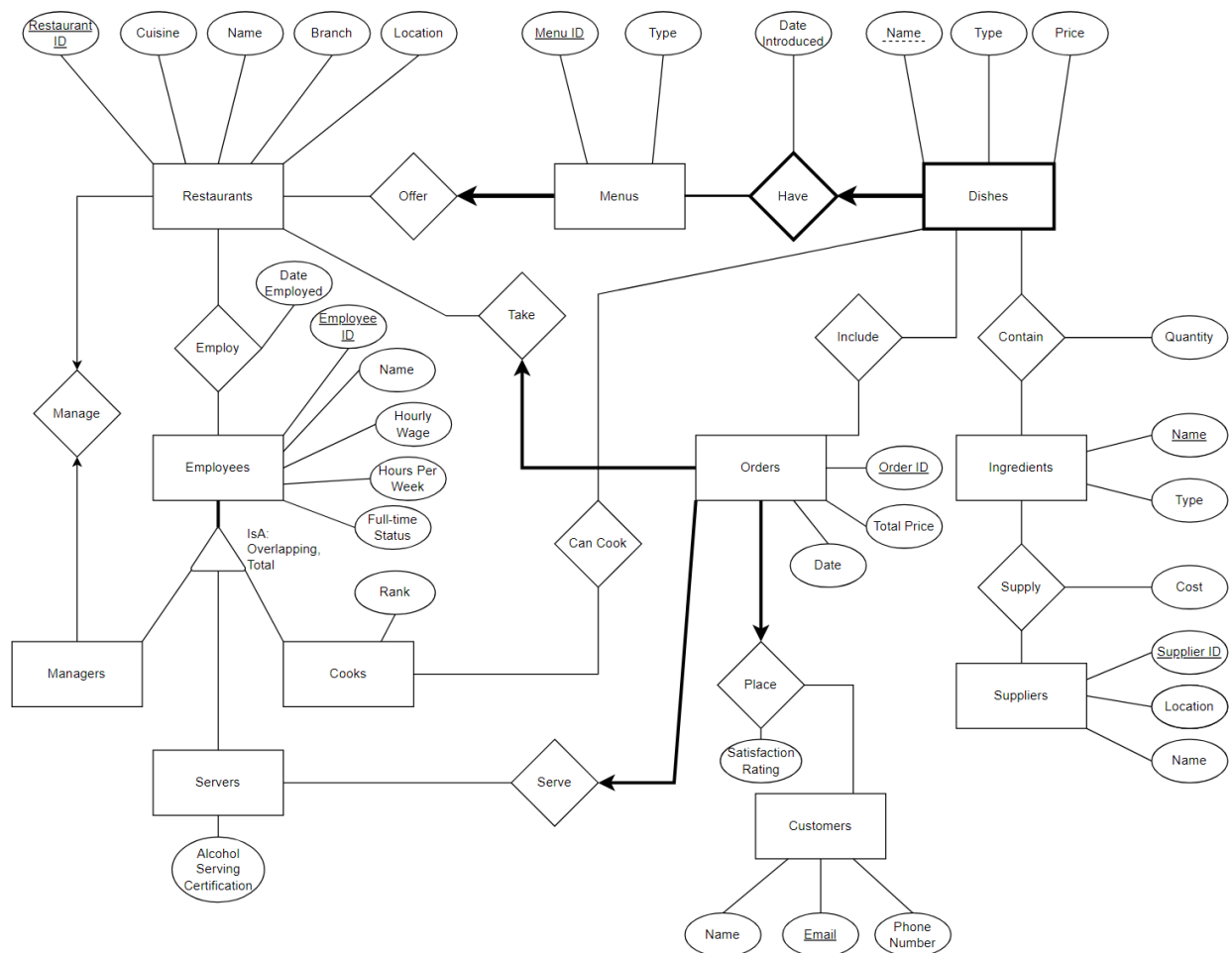
## Project Summary

In this database project, we modelled a domain on restaurant logistics called Restaurants Manager. We have successfully created a relational database with Oracle SQL\*Plus, utilizing PHP to produce the backend to frontend of our project. Accessing the program page, we can access the database instances which includes Restaurants, Employees divided between Managers, Cooks and Servers, Menus, Menu Dishes, Ingredients, Suppliers, Customers, Orders, and more.

This program allows us to view any relation instance and view the tuples in each of them, such as orders for example, to see content such as the review given by a customer pertaining to dishes that they ordered, and the servers who served them. The program properly inserts new cooks into the corresponding program without violating constraints, and it can update or delete current employees in the database. We can select specific attributes of a table we want to view and add constraints to them. We can also simply project the attributes we want to see from the Orders table. We can obtain the info of the orders taken from a given server employee. There are other special queries which overall can give insight for the user to compare and critique restaurants, such as counting the number of employees at each restaurant or viewing the restaurants that offer lower average wages compared to the total average wage of all restaurant employees. We can also see which customers are ordering over a given amount of orders. Lastly we can find suppliers that supply all ingredients in the database, such that restaurants may want to convenient use them to supply their ingredients.

## Project Changes

There has been several changes throughout the progress of the project, such as changing the participation constraints in the ER diagram, and realizing the changes on the DDL. This allowed us to not require assertions, and to have a more convenient method of adding tuples to tables such as employees or customers without having to make sure they have at least one relation they are in, such as at least one place of employment, or one order, respectively. The IsA constraints were changed to overlapping from disjoint to allow employees to have multiples, as seen in our sample data, where every employee should at least be a server. The ON UPDATE lines of code were removed as they were redundant, and the ON DELETE lines were updated to match the participation constraints in the one-to-many or one-to-one cardinalities in our relations. Lastly, a few more insertion statements were added for additional sample data that our queries can use. The latest and final ER diagram is attached below.



## Queries Included

Here is the list of queries the program provides, and sample visualization:

- **OPTIONAL: Reset**
  - o Reset the program and run the DDL script to add all relations and their tuples
- **Insert**
  - o HTML: Line 48, php: Line 972
  - o Add a new cook to Cooks, while also adding a new tuple to Employees\_Main, and Employees\_FT if the given hours per week and FT status is new

**View all Tuples in Selected Table**  
Choose from a table in the database to view its rows.  

Cooks

View

EID	RANK
2	Head Chef
4	Head Chef
5	Line Cook
8	Sous Chef
11	Head Chef

**Add a New Cook**  
Enter the details for the cook to be added.  
Employee ID: 

21

  
Name: 

Anya Forger

  
Hourly Wage: 

19.20

  
Hours Per Week: 

15

  
Fulltime Status: 

No

  
Cook Rank: 

Kitchen Porter

Insert

**View all Tuples in Selected Table**  
Choose from a table in the database to view its rows.  

Cooks

View

EID	RANK
2	Head Chef
4	Head Chef
5	Line Cook
8	Sous Chef
11	Head Chef
21	Kitchen Porter

- **Delete**
  - o HTML: Line 81, php: Line 1064
  - o Remove an Employee by their ID, or by random

**View all Tuples in Selected Table**  
Choose from a table in the database to view its rows.  

Employees Main

View

EID	ENAME	HOURLYWAGE	HOURLYPERWEEK
1	Alice Johnson	30	50
2	Mark Ramirez	26.5	20
3	Sarah Thompson	14	5
4	James Lee	27	35
5	Emily Martinez	16.25	10
6	Michael Robinson	16.5	37.5
7	Jessica Nguyen	28.5	50
8	William Patel	22.3	20
9	Jennifer Smith	32.75	40
10	Robert Kim	15	35
11	Laura Garcia	32.5	37.5
12	Daniel Jackson	17	20
13	Samantha Chen	16	10
14	Christopher Brown	18.5	40
15	Elizabeth Wilson	28.25	40
16	Thomas Davis	16.3	35
17	Ashley Rodriguez	15.5	20
18	Kevin Taylor	29.5	40
19	Amanda Wright	17.25	35
20	Ryan Lewis	17.25	37.5

**Remove an Employee**  
Remove an employee by Employee ID. This will also remove the tuple from the employee type.  
Leaving the box blank will delete a random employee.  
Employee ID: 

13

Delete

**View all Tuples in Selected Table**  
Choose from a table in the database to view its rows.  

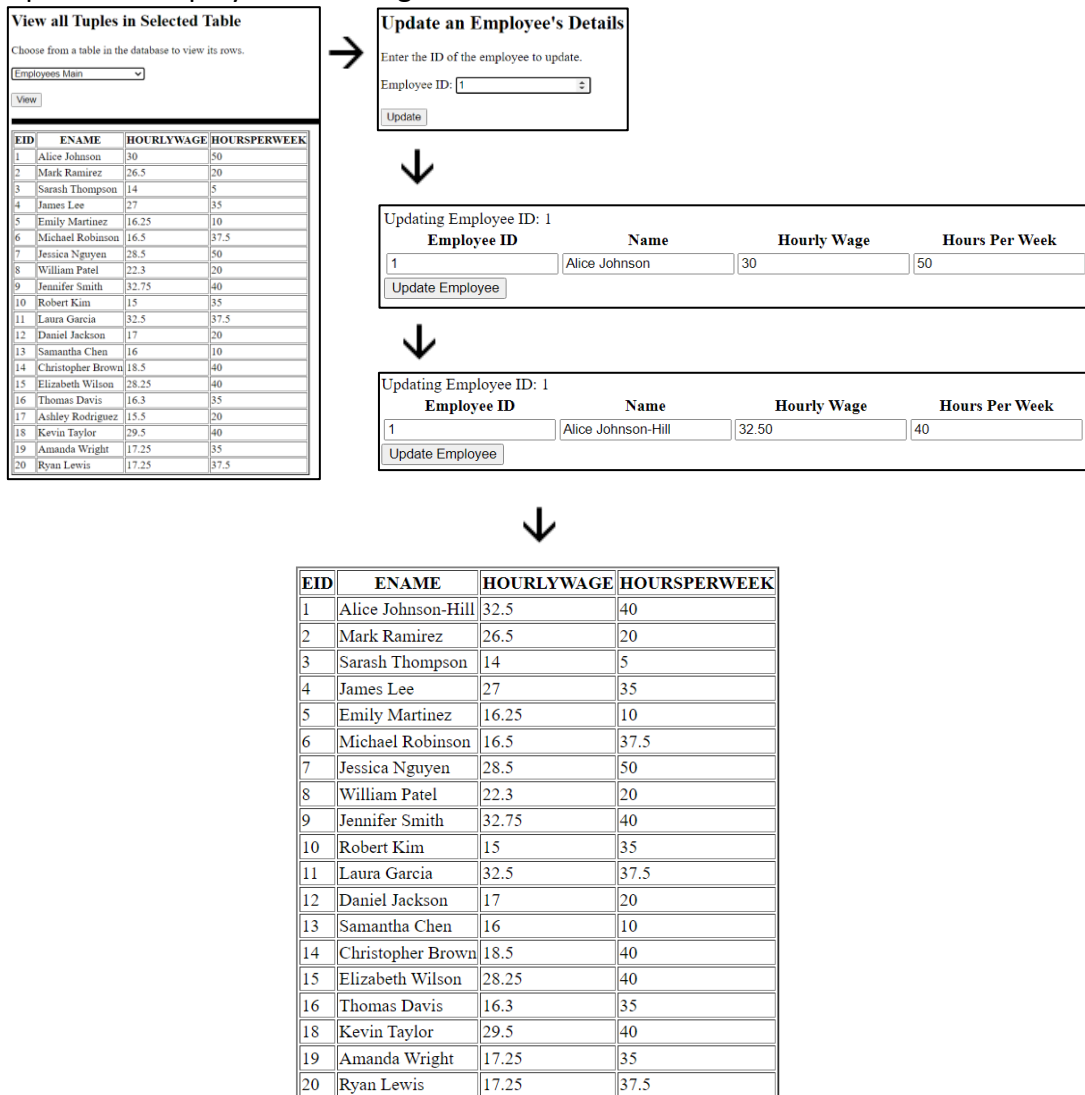
Employees Main

View

EID	ENAME	HOURLYWAGE	HOURLYPERWEEK
1	Alice Johnson	30	50
2	Mark Ramirez	26.5	20
3	Sarah Thompson	14	5
4	James Lee	27	35
5	Emily Martinez	16.25	10
6	Michael Robinson	16.5	37.5
7	Jessica Nguyen	28.5	50
8	William Patel	22.3	20
9	Jennifer Smith	32.75	40
10	Robert Kim	15	35
11	Laura Garcia	32.5	37.5
12	Daniel Jackson	17	20
14	Christopher Brown	18.5	40
15	Elizabeth Wilson	28.25	40
16	Thomas Davis	16.3	35
17	Ashley Rodriguez	15.5	20
18	Kevin Taylor	29.5	40
19	Amanda Wright	17.25	35
20	Ryan Lewis	17.25	37.5

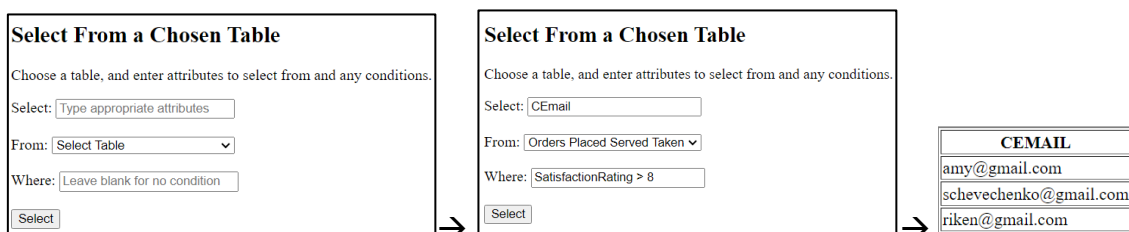
## - Update

- HTML: Line 95, php: Line 1103
- Update an Employee's details given their ID



## - Selection

- HTML: Line 108, php: Line 1181
- From a selection of tables from a dropdown, type what attributes and conditions to select from



## - Projection

- HTML: Line 144, php: Line 1206
- Choose attributes to project from the Orders table

**Projection On Orders**

Select 'Yes' in the options for attributes you want to view in the table, otherwise please select 'No'.

Order ID: ☐ Yes

Total Price: ☐ Yes

Satisfaction Rating: ☐ Yes

Customer Email: ☐ No

Restaurant ID: ☐ No

Employee ID: ☐ No



OID	SATISFACTIONRATING	TOTALPRICE
1	4	26.38
2	8	13.19
3	8	14.25
4	7	13.19
5	7	13.19
6	6	22
7	4	13
8	6	14.25
9	9	18
10	9	18
11	7	14.25
12	6	18
13	3	22
14	6	40
15	9	13.19
16	7	49
20	7	49
21	8	49
22	7	14.25
23	8	13.19
24	7	13.19
25	5	8
26	5	8
27	6	8
28	7	13.19

## - Join

- HTML: Line 191, php: Line 1243
- Joins Employees, Servers and Orders given the EID

**Join: Obtain Servers' Orders Taken**

Please select from existing server employee IDs.

Employee ID:



EID	ENAME	HOURLYWAGE	HOURS PER WEEK	ALCOHOLSERVINGCERTIFICATION	OID	TOTALPRICE	DATES	SATISFACTIONRATING	CEMAIL	RID
3	Sarash Thompson	14	5	1	1	26.38	11-AUG-23	4	johnny@hotmail.com	1
3	Sarash Thompson	14	5	1	3	14.25	03-SEP-18	8	jennifer@gmail.com	3
3	Sarash Thompson	14	5	1	28	13.19	12-AUG-23	7	johnny@hotmail.com	1

## - Aggregation with Group By

- HTML: Line 203, php: Line 1258
- Get Count of Employees at Each Restaurant

**Count Employees at Each Restaurant**

Count the number of employees employed at each restaurant.



RNAME	BRANCH	RLOCATION	EMPLOYEECOUNT
Les Amis	Kitsilano	Montreal, QC, CA	11
Nelly's Brunch Pantry	Kitsilano	Vancouver, BC, CA	3
Banana Leaf	Kitsilano	Vancouver, BC, CA	2
Banana Leaf	Fairview	Vancouver, BC, CA	2
Jo's Italian Deli	West Point Grey	Vancouver, BC, CA	3

- **Aggregation with Having**

- HTML: Line 214, php: Line 1269
- Find customers' count of orders who order more than provided number of orders

**Find Frequent Customers**

Find emails of customers that have placed at least some number of orders.

Order Count:



CEMAIL	ORDERCOUNT
bierhoff@gmail.com	3
hernan@gmail.com	2
johnny@hotmail.com	2
jurgen@gmail.com	3
gabriel@gmail.com	2
gomez@gmail.com	3

- **Nested Aggregation with Group By**

- HTML: Line 227, php: Line 1281
- List restaurants and their average hired employees' wages if there are lower than the average wage of all employees in the database

**Find Restaurants That Have A Low Average Wage**

Get a list of restaurants that have a lower employee average wage than the average wage of all employees in the database.



RID	RNAME	BRANCH	RLOCATION	AVGHOURLYWAGERESTAURANT
3	Les Amis	Kitsilano	Montreal, QC, CA	17.4625

- **Division**

- HTML: Line 238, php: Line 1311
- List suppliers that supply every ingredient in the database

**Find Suppliers That Supply Every Ingredient**

Get a list of suppliers that supply all known ingredients in the database.



SID	SNAME
1	Costco Business Centre

- **OPTIONAL: Count Tuples**

- Lists the number tuples in each table

- **OPTIONAL: View Tuples**

- Lists the tuples of a chosen table