CPSC 304 Project Cover Page

Milestone #: 4

Date: 2024-4-3

Group Number: 83

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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

Project Description

Our project is an application designed for the Aerospace Industry. Our project aims to help manage the creation of missions to outer space and the organization of human and capital resources.

Repository Link

https://github.students.cs.ubc.ca/CPSC304-2023W-T2/project_e4u2b_i6z8h_o5f8l

SQL script

'SQL_Script.sql' is the file that contains the script to create tables, drop tables and insert rows.

Project changes

- Added 'ON DELETE CASCADE' in Obtained and Requires tables. Because we need to meet the requirement in Milestone 5 about DELETE operation that 'Implement a cascade-on-delete situation'.
- 2. Changed table names from singular to plural because in sql it makes it more natural to use plural.
 - a. GROUNDMEMBERS
 - b. SUPPLYDEPOTS
 - c. NUMCONTROLROOMS
 - d. MISSIONCONTROLCENTERS
 - e. LAUNCHSITES
 - f. MODELS
 - g. SHIPS
 - h. PINPOINTS
 - i. MISSIONS
 - j. TASKS
 - k. STATIONS
 - I. CERTIFICATIONS

Schema and Data

Missions(MissionID, ShipID, Planet, Latitude, Longitude, ControlCenterID, Name, Description, StartDate, EndDate)

MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenterID
000000001	Lalopo-11	Lorem Ipsum	18-Mar-05	25-May-07	000000001	Mars	-49	-120	000000001

0000000002	Lalopo-12	Lorem Ipsum	25-May-07	25-May-08	0000000002	Mars	-30	95	0000000002
000000003	Lalopo-13	Lorem Ipsum	25-May-08	25-May-09	000000003	Venus	33	71	0000000003
000000004	Lalopo-14	Lorem Ipsum	25-May-09	25-May-10	000000004	Pluto	44	-79	0000000002
000000005	Lalopo-15	Lorem Ipsum	25-May-11	25-May-12	0000000005	Mercury	46	-74	0000000005

Facilities(FacilityID, Name, Location)

acinites(<u>racinityrid</u> , Name, Location)			
FacilityID	Name	Location	
000000001	Mira HQ	Detroit	
0000000002	Aperture Enrichment Center	Somewhere, Michigan	
000000003	Neumos	925 E Pike St, Seattle	
000000004	Googleplex	1600 Amphitheatre Pkwy, Mountain View	
000000005	Tesla HQ	3500 Deer Creek Rd, Palo Alto	
000000006	Polus	Polus	
000000007	Uber HQ	1515 Third Street in San Francisco	
000000008	Apple Park	1 Apple Park Way, Cupertino	
000000009	The Middle of Nowhere	Kinistino, Saskachewan	
000000010	Vancouver Public Library	2425 Macdonald St, Vancouver	
000000011	ICICS	2366 Main Mall, Vancouver	
000000012	Hugh Dempster	6245 Agronomy Rd, Vancouver	
000000013	Basement Food Court	5726 University Blvd, Vancouver	
000000014	The Nest	6133 University Blvd, Vancouver	
000000015	My Back Yard	1234 Somewhere Street, Vancouver	

Ships(ShipID, Model, LaunchSiteID, ServiceStartDate)

ShipID	ServiceStartDate	Model	LaunchSiteID
000000001	18-Mar-05	Victory-II	0000000006
000000002	25-May-07	Lockmart CM-88B Bison	000000006
000000003	20-Sep-02	Aught Three	000000006
000000004	15-Jun-18	Skeld	000000006
000000005	09-Nov-23	Galactica	000000006
000000006	09-Nov-23	Aught Three	0000000006
000000007	09-Nov-23	Aught Three	0000000006

0000000008	09-Nov-23	Aught Three	000000006
000000009	09-Nov-23	Aught Three	0000000006
000000000	09-Nov-23	Galactica	0000000006
000000010	09-Nov-23	Galactica	000000006
000000020	09-Nov-23	Galactica	0000000006
8495672135	22-Nov-22	Victory-II	000000006
7269851340	14-Aug-21	Lockmart CM-88B Bison	000000006
9348752610	05-Jan-23	Aught Three	0000000006
3579124680	27-Apr-20	Skeld	0000000006
6834192075	01-Oct-20	Galactica	0000000006
4951763028	19-Jun-23	Aught Three	0000000006
9276803154	28-Mar-22	Aught Three	0000000006
1658047932	10-Dec-20	Aught Three	0000000006
5938271460	07-Sep-21	Aught Three	0000000006
3791856240	03-Aug-22	Galactica	0000000006
5276349801	30-Oct-21	Galactica	0000000006

Personnel(EmployeeID, Salary, Name, YOE)

EmployeeID	Salary	Name	YOE
000000001	75000	Crew Mate	15-Jun-18
0000000002	150000	Ellen Ripley	25-May-79
000000003	150000	Jim Raynor	31-Mar-98
000000004	85000	Malcolm Reynolds	28-Apr-24
000000005	65000	John Doe	21-Apr-24
000000006	85000	Neil Armstrong	01-Apr-62
000000007	45000	Buzz Aldrin	23-May-62
000000008	250000	Wullf Yularen	10-Jul-23
0000000009	45000	David Hickman	03-Jan-18
000000010	45000	Joseph Hatfield	27-Nov-21
188888888	145000	Sarah Kerrigan	01-Dec-79
2888888888	145000	Artanis	05-Nov-45

388888888	95000	Tychus Findlay	27-Apr-60
4888888888	105000	Nova Terra	15-Jul-56
5888888888	105000	Matt Horner	08-Sep-50
688888888	55000	Gabriel Tosh	18-Mar-48
7888888888	200000	Arcturus Mengsk	02-Oct-18
888888888	85000	Tassadar	23-Jun-23
988888888	65000	Fenix	12-Dec-12

$CrewMembers(\underline{\textbf{EmployeeID}}, \, MissionsFlown)$

EmployeeID	MissionsFlown
000000001	0
0000000002	6
000000003	5
000000004	6
0000000006	7

$\underline{\text{GroundMembers}(\underline{\textbf{EmployeeID}},\,\textbf{FacilityID},\,\text{WorkModel},\,\text{Clearance})}$

EmployeeID	WorkModel	FacilityID	Clearance
000000005	Hybrid	000000001	1
000000007	In-Person	000000001	1
0000000008	Online	000000002	1
0000000009	In-Person	000000002	1
000000010	In-Person	000000002	2
1888888888	Hybrid	000000001	1
2888888888	In-Person	000000001	1
388888888	Online	000000002	1
488888888	In-Person	000000002	4
5888888888	In-Person	000000002	6

688888888	Hybrid	000000001	2
7888888888	In-Person	000000001	2
8888888888	Online	000000002	1
988888888	In-Person	0000000002	1

$SupplyDepots(\underline{\textbf{FacilityID}}, VolumetricCapacity)$

FacilityID	VolumetricCapacity
11	100000
12	100000
13	100000
14	100000
15	10

$NumControlRooms(\underline{NumControlRooms}, \\MaxStaffCapacity)$

NumControlRooms	MaxStaffCapacity
1	100
2	200
3	300
4	400
5	500

${\bf Mission Control Centers}(\underline{\textbf{FacilityID}},\,\textbf{NumControl Rooms})$

FacilityID	NumControlRooms
000000001	1
0000000002	2
000000003	3
000000004	4
000000005	5

 $Launch Sites ({\color{red} \underline{\textbf{FacilityID}}}, \\ Maximum Supported Class)$

FacilityID	MaximumSupportedClass
000000006	L-Class
000000007	M-Class
000000008	M-Class
000000009	M-Class
1000000000	S-Class

Models(Model, Class)

Model	Class
Victory-II	L-Class
Lockmart CM-88B Bison	M-Class
Aught Three	S-Class
Skeld	L-Class
Galactica	L-Class

PinPoints(Planet, Latitude, Longitude)

Planet	Latitude	Longitude	FirstVisited	LastVisited
Mars	-49	-120	18-Mar-05	18-Mar-05
Mars	-30	95	25-May-07	25-May-07
Venus	33	71	25-May-08	25-May-08
Pluto	44	-79	25-May-09	25-May-09
Mercury	46	-74	25-May-11	25-May-11

AssignedTo(**EmployeeID**, **MissionID**, Role)

<u> </u>	, <u></u> ,,	/
EmployeeID	MissionID	Role
000000009	000000001	Flight Director
1000000000	000000001	Spacecraft Communicator
0000000002	000000001	Flight Engineer
000000003	000000001	Commander
000000001	000000001	Pilot

000000001	000000002	Pilot
000000001	000000003	Pilot
000000001	000000004	Pilot
000000001	000000005	Pilot

Tasks(<u>TaskID</u>, **MissionID**, Priority, Description, Status)

TaskID	Priority	Description	Status
000000001	000000003	Fix wiring	Uninitialized
0000000002	000000001	Clear asteroids	Uninitialized
000000003	000000001	Mine minerals	Uninitialized
000000004	000000001	Collect vespene	Uninitialized
000000005	000000001	Twiddle thumbs	Uninitialized

Cargo(BarcodeNumber, DepotID, ShipID, Volume, Weight, Description)

BarcodeNumber	Volume	Weight	Description	DepotID
000000001	10	2	Components	000000011
000000002	2	4	Components	000000011
000000003	100	3	Components	000000011
000000004	6	3	Components	000000011
000000005	3	5	Components	000000011

Stations(ShipID, Position, Description)

ShipID	Position	Description
000000001	Navigation	Determines route and makes course changes
000000001	Botanical	Runs botanical garden in ship
000000001	Security	Runs security
000000001	Flight Control	Flies the ship
000000001	Research	Conducts research in space
000000001	Bridge	Read ship vitals

Certifications(CertificationID, Description)

CertificationID	Description
000000001	Flying a ship 101
000000002	Bachelor of Science
0000000003	Exercising authority in space 101
000000004	Gardening 101
000000005	How to find yourself in space 101

${\sf Designated}(\underline{\textbf{CrewMemberID}}, \underline{\textbf{ShipID}}, \underline{\textbf{Position}})$

CrewMemberID	ShipID	Position
000000001	000000001	Navigation
000000002	000000001	Botanical
000000003	000000001	Security
000000004	000000001	Flight Control
0000000006	000000001	Research

$Obtained(\underline{CertificationID},\ \underline{CrewMemberID})$

<u> </u>				
CertificationID	CrewMemberID			
000000003	000000001			
000000003	0000000003			
000000004	000000001			
000000004	000000002			
0000000005	000000001			
0000000005	000000002			

Requires(CertificationID, ShipID, Position)

CertificationID	ShipID	Position
000000001	000000001	Bridge
0000000002	000000001	Research
0000000003	000000001	Security
000000004	000000001	Botanical
0000000005	000000001	Flight Control

Timeline

Database setup - Fei Long & Jonathan

Jonathan

•	SQL script to create all the tables and data in the database Queries: INSERT Operation Queries: DELETE Operation	2024-3-15
• Fei	Queries: UPDATE Operation	2024-3-22
•	Configure Oracle Database on department remote server Queries: Selection Queries: Projection Queries: Join Queries: Aggregation with Group By Queries: Aggregation with Having Queries: Nested Aggregation with Group By	2024-3-15
• Back	Queries: Division tend - Matias	2024-3-22
•	Create python development environment	2024-3-15
•	Setup FastAPI app with uvicorn	2024-3-13
•	Agree on schema for backend endpoint calls - Matias and Jonathan	2024-3-10
•	Implement GET endpoints	2024-3-23
•	Implement POST endpoints	2024-3-26
•	Implement PUTS endpoints	2024-3-29
Fron	tend (GUI) - Jonathan	
•	Create React boilerplate Implement GET endpoint calls Implement POST endpoint calls Implement PUTS endpoints calls Use mock data from mock endpoint calls	2024-3-15
•	Implement React components associated with main table, using mock Connect components to endpoint calls	2024-3-29 2024-4-1

Queries

Please note the screenshots are in the next section.

Insert Row (all tables) backend/main.py:138

Query:

```
INSERT INTO {table}
VALUES ({val1}, {val2});
```

Delete Row (Certifications only) backend/main.py:153

Query:

```
DELETE FROM {table}
WHERE {key1}={id1} and {key2}={id2};
```

Update Row (Missions only) backend/main.py:172

Query:

```
UPDATE {table}
SET {attr1}={val1}, {attr2}={val2};
WHERE {key1}={id1};
```

<u>Selection (Mission)</u> backend/main.py:192

Query:

```
SELECT *
FROM {table}
WHERE {user input};
```

Projection (all tables) backend/main.py:207

Query:

```
SELECT {attr1} {attr2}
FROM {table};
```

<u>Join (Mission and AssignedTo)</u> backend/main.py:119

Query:

```
SELECT *
FROM missions m, assignedTo a, personnel p
WHERE m.MissionID=a.MissionID and a.EmployeeID=p.EmployeeID and
{date1} ≤ m.startDate and m.endDate ≤ {date2};
```

Aggregation with GROUP BY (Ship count by class) backend/main.py:35

Query:

SELECT m.Class, COUNT(*) as shipCount FROM ships s, models m WHERE s.Model=m.Model GROUP BY m.Class

Aggregation with HAVING (Ship count by class having more than 5) backend/main.py:54

Query:

SELECT m.Class, COUNT(*) as shipCount FROM ships s, models m WHERE s.Model=m.Model GROUP BY m.Class HAVING COUNT(*)>5

Nested Aggregation with GROUP BY backend/main.py:74

Query:

```
SELECT g.WorkModel, AVG(p.Salary) AS modelAvgSalary

FROM groundMembers g, personnel p

WHERE g.EmployeeID=p.EmployeeID

GROUP BY g.WorkModel

HAVING AVG(p.Salary) > ( SELECT AVG(p1.Salary)

FROM groundmembers g, personnel p1

where g.employeeid=p1.employeeid)
```

Division backend/main.py:96

Query:

```
SELECT p.EmployeeID

FROM Personnel p

WHERE NOT EXISTS (SELECT m.MissionID

FROM Missions m

MINUS

SELECT a.MissionID

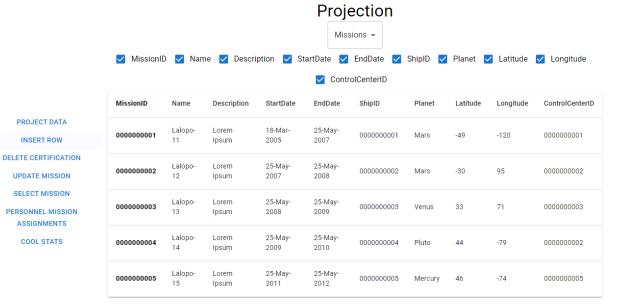
FROM AssignedTo a

WHERE a.EmployeeID = p.EmployeeID);
```

Screenshots

Project

Before



During (selecting different columns)

Space Agency

Projection Missions •

✓ MissionID ✓ Name	☐ Description ☐ Sta	artDate	☐ ShipID ☐ Planet	✓ Latitude ✓ Longitude
		ControlCenterID		
MissionID	Name	Latitude	Longitude	ControlCenterID
000000001	Lalopo-11	-49	-120	000000001
000000002	Lalopo-12	-30	95	0000000002
000000003	Lalopo-13	33	71	000000003
000000004	Lalopo-14	44	-79	0000000002
000000005	Lalopo-15	46	-74	0000000005

After

PROJECT DATA
INSERT ROW

DELETE CERTIFICATION
UPDATE MISSION
SELECT MISSION
PERSONNEL MISSION
ASSIGNMENTS
COOL STATS

Space Agency

Projection



PROJECT DATA
INSERT ROW

DELETE CERTIFICATION
UPDATE MISSION
SELECT MISSION
PERSONNEL MISSION
ASSIGNMENTS
COOL STATS

Insert

Before

Space Agency

Insert

Missions ▼

MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenterID
000000001	Lalopo- 11	Lorem Ipsum	18-Mar- 2005	25-May- 2007	000000001	Mars	-49	-120	000000001
000000002	Lalopo- 12	Lorem Ipsum	25-May- 2007	25-May- 2008	0000000002	Mars	-30	95	0000000002
000000003	Lalopo- 13	Lorem Ipsum	25-May- 2008	25-May- 2009	000000003	Venus	33	71	000000003
000000004	Lalopo- 14	Lorem Ipsum	25-May- 2009	25-May- 2010	0000000004	Pluto	44	-79	0000000002
0000000005	Lalopo- 15	Lorem Ipsum	25-May- 2011	25-May- 2012	0000000005	Mercury	46	-74	0000000005

PROJECT DATA
INSERT ROW
DELETE CERTIFICATION

UPDATE MISSION

SELECT MISSION

PERSONNEL MISSION
ASSIGNMENTS

COOL STATS

	MissionID	
Name		
Description		
StartDate		
EndDate - ShipiD		
Planet		
Latitude		
Longitude		
ControlCenterID		

INSERT

During

Space Agency

Insert

Missions -

MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenterID
000000001	Lalopo- 11	Lorem Ipsum	18-Mar- 2005	25-May- 2007	0000000001	Mars	-49	-120	0000000001
000000002	Lalopo- 12	Lorem Ipsum	25-May- 2007	25-May- 2008	0000000002	Mars	-30	95	0000000002
000000003	Lalopo- 13	Lorem Ipsum	25-May- 2008	25-May- 2009	000000003	Venus	33	71	0000000003
000000004	Lalopo- 14	Lorem Ipsum	25-May- 2009	25-May- 2010	0000000004	Pluto	44	-79	0000000002
000000005	Lalopo- 15	Lorem Ipsum	25-May- 2011	25-May- 2012	0000000005	Mercury	46	-74	0000000005

PROJECT DATA
INSERT ROW

DELETE CERTIFICATION

UPDATE MISSION

SELECT MISSION

PERSONNEL MISSION
ASSIGNMENTS

COOL STATS

Name —		
Go Somewhere		
Description		
fly somewhere and do stuff		
StartDate		
4-Apr-2024		
- EndDate -		
25-Dec-2024		
ShipID		
000000006		
- Planet		
Mars		
- Latitude		
-30		
- Longitude		
95		
- ControlCenterID -		
000000001		

INSERT

After

Space Agency

Insert

Missions ▼

MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenteri
0000000006	Go Somewhere	fly somewhere and do stuff	4-Apr- 2024	25-Dec- 2024	000000006	Mars	-30	95	000000001
000000001	Lalopo-11	Lorem Ipsum	18-Mar- 2005	25-May- 2007	000000001	Mars	-49	-120	000000001
000000002	Lalopo-12	Lorem Ipsum	25-May- 2007	25-May- 2008	0000000002	Mars	-30	95	0000000002
000000003	Lalopo-13	Lorem Ipsum	25-May- 2008	25-May- 2009	000000003	Venus	33	71	000000003
000000004	Lalopo-14	Lorem Ipsum	25-May- 2009	25-May- 2010	000000004	Pluto	44	-79	0000000002
000000005	Lalopo-15	Lorem Ipsum	25-May- 2011	25-May- 2012	0000000005	Mercury	46	-74	0000000005

PROJECT DATA
INSERT ROW

DELETE CERTIFICATION

UPDATE MISSION

SELECT MISSION

PERSONNEL MISSION

ASSIGNMENTS

COOL STATS

	MissionID	
Name		
Description		
StartDate		
EndDate		
ShipID		
Planet		
Latitude		
Longitude		

Delete Row (Certifications only)

Before

Space Agency

Delete Certification

Certifications

CertificationID	Description	
000000001	Flying a ship 101	DELETE
000000002	Bachelor of Science	DELETE
000000003	Exercising authority in space 101	DELETE
000000004	Gardening 101	DELETE
000000005	How to find yourself in space 101	DELETE

PROJECT DATA
INSERT ROW

DELETE CERTIFICATION
UPDATE MISSION
SELECT MISSION
PERSONNEL MISSION
ASSIGNMENTS
COOL STATS

Obtained

CertificationID	CrewMemberiD
000000003	000000001
000000003	000000003
000000004	000000001
000000004	000000002
000000005	000000001
000000005	000000002

Requires

CertificationID	ShipID	Position		
000000001	000000001	Bridge		
000000002	000000001	Research		

During

Space Agency

Delete Certification

Certifications

CertificationID	Description	
000000001	Flying a ship 101	DELETE
000000002	Bachelor of Science	DELETE
000000003	Exercising authority in space 101	DELETE
000000004	Gardening 101	DELETE
000000005	How to find yourself in space 101	DELETE

PROJECT DATA

INSERT ROW

DELETE CERTIFICATION

UPDATE MISSION

SELECT MISSION

PERSONNEL MISSION
ASSIGNMENTS

COOL STATS

Obtained

CertificationID	CrewMemberID
000000003	000000001
000000003	000000003
000000004	000000001
000000004	000000002
000000005	000000001
000000005	000000002

Requires

CertificationID	ShipID	Position
000000001	000000001	Bridge
000000002	000000001	Research

After

Space Agency

Delete Certification

Certifications

CertificationID	Description	
000000002	Bachelor of Science	DELETE
000000003	Exercising authority in space 101	DELETE
000000004	Gardening 101	DELETE
000000005	How to find yourself in space 101	DELETE

PROJECT DATA
INSERT ROW

DELETE CERTIFICATION

UPDATE MISSION

SELECT MISSION

PERSONNEL MISSION

ASSIGNMENTS
COOL STATS

Obtained

	anica
CertificationID	CrewMemberID
000000003	000000001
000000003	000000003
000000004	000000001
000000004	000000002
000000005	000000001
000000005	000000002

Requires

CertificationID	ShipID	Position
000000002	000000001	Research
000000003	000000001	Security
000000004	000000001	Botanical
000000005	000000001	Flight Control

Update Row (Missions only)

Before

Space Agency



Update Mission											
MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenterID		
000000006	Go Somewhere	fly somewhere and do stuff	4-Apr-2024	25-Dec-2024	0000000006	Mars	-30	95	000000001	EDIT	
000000001	Lalopo-11	Lorem Ipsum	18-Mar-2005	25-May-2007	000000001	Mars	-49	-120	000000001	EDIT	
000000002	Lalopo-12	Lorem Ipsum	25-May-2007	25-May-2008	0000000002	Mars	-30	95	000000002	EDIT	
000000003	Lalopo-13	Lorem Ipsum	25-May-2008	25-May-2009	0000000003	Venus	33	71	000000003	EDIT	
000000004	Lalopo-14	Lorem Ipsum	25-May-2009	25-May-2010	000000004	Pluto	44	-79	000000002	EDIT	
000000005	Lalopo-15	Lorem Ipsum	25-May-2011	25-May-2012	000000005	Mercury	46	-74	000000005	EDIT	

During

Space Agency



	Update Mission											
MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenterID			
0000000006	Go Elsewhere	fly elsewhere and do othe	4-Apr-2066	25-Dec-2077	0000000008	Pluto	44	-79	0000000003	SAVE CANCEL		
000000001	Lalopo-11	Lorem Ipsum	18-Mar-2005	25-May-2007	0000000001	Mars	-49	-120	000000001	EDIT		
0000000002	Lalopo-12	Lorem Ipsum	25-May-2007	25-May-2008	0000000002	Mars	-30	95	0000000002	EDIT		
000000003	Lalopo-13	Lorem Ipsum	25-May-2008	25-May-2009	0000000003	Venus	33	71	0000000003	EDIT		
0000000004	Lalopo-14	Lorem Ipsum	25-May-2009	25-May-2010	0000000004	Pluto	44	-79	0000000002	EDIT		
0000000005	Lalopo-15	Lorem Ipsum	25-May-2011	25-May-2012	0000000005	Mercury	46	-74	0000000005	EDIT		

After





Update Mission											
MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenterID		
000000006	Go Elsewhere	fly elsewhere and do other things	4-Apr-2066	25-Dec-2077	0000000008	Pluto	44	-79	000000003	EDIT	
0000000001	Lalopo-11	Lorem Ipsum	18-Mar-2005	25-May-2007	0000000001	Mars	-49	-120	0000000001	EDIT	
0000000002	Lalopo-12	Lorem Ipsum	25-May-2007	25-May-2008	0000000002	Mars	-30	95	0000000002	EDIT	
000000003	Lalopo-13	Lorem Ipsum	25-May-2008	25-May-2009	0000000003	Venus	33	71	0000000003	EDIT	
0000000004	Lalopo-14	Lorem Ipsum	25-May-2009	25-May-2010	0000000004	Pluto	44	-79	0000000002	EDIT	
0000000005	Lalopo-15	Lorem Ipsum	25-May-2011	25-May-2012	0000000005	Mercury	46	-74	0000000005	EDIT	

Selection (Mission)

Before

Space Agency

Select Mission

ADD SELECTOR

SELECT

MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenterID
0000000006	Go Elsewhere	fly elsewhere and do other things	4-Apr- 2066	25-Dec- 2077	000000008	Pluto	44	-79	000000003
000000001	Lalopo-11	Lorem Ipsum	18-Mar- 2005	25-May- 2007	0000000001	Mars	-49	-120	000000001
0000000002	Lalopo-12	Lorem Ipsum	25-May- 2007	25-May- 2008	0000000002	Mars	-30	95	0000000002
000000003	Lalopo-13	Lorem Ipsum	25-May- 2008	25-May- 2009	000000003	Venus	33	71	0000000003
000000004	Lalopo-14	Lorem Ipsum	25-May- 2009	25-May- 2010	000000004	Pluto	44	-79	0000000002
0000000005	Lalopo-15	Lorem Ipsum	25-May- 2011	25-May- 2012	0000000005	Mercury	46	-74	0000000005

PROJECT DATA
INSERT ROW

DELETE CERTIFICATION
UPDATE MISSION
SELECT MISSION
PERSONNEL MISSION
ASSIGNMENTS
COOL STATS

During

Space Agency

Select Mission



SELECT

PROJECT DATA

INSERT ROW

DELETE CERTIFICATION

UPDATE MISSION

SELECT MISSION

PERSONNEL MISSION
ASSIGNMENTS

COOL STATS

MissionID	Name	Description	StartDate	EndDate	ShipID	Planet	Latitude	Longitude	ControlCenterID
0000000006	Go Elsewhere	fly elsewhere and do other things	4-Apr- 2066	25-Dec- 2077	000000008	Pluto	44	-79	000000003
000000001	Lalopo-11	Lorem Ipsum	18-Mar- 2005	25-May- 2007	0000000001	Mars	-49	-120	000000001
000000002	Lalopo-12	Lorem Ipsum	25-May- 2007	25-May- 2008	0000000002	Mars	-30	95	0000000002
000000003	Lalopo-13	Lorem Ipsum	25-May- 2008	25-May- 2009	000000003	Venus	33	71	000000003
000000004	Lalopo-14	Lorem Ipsum	25-May- 2009	25-May- 2010	0000000004	Pluto	44	-79	0000000002
0000000005	Lalopo-15	Lorem Ipsum	25-May- 2011	25-May- 2012	0000000005	Mercury	46	-74	0000000005

After

Space Agency

Select Mission MissionID = = 0000000003 DELETE OR = OR = Planet = = Mars AND = EndDate = < = 1-Jan-2008 DELETE ADD SELECTOR

SELECT

PROJECT DATA

INSERT ROW

DELETE CERTIFICATION

UPDATE MISSION

SELECT MISSION

MissionID

000000006

000000001

000000003

Go

Elsewhere

Lalopo-13

Description

elsewhere

things

Lorem

lpsum Lorem

Ipsum

and do other

StartDate

4-Apr-

2066

18-Mar-

25-May-

2008

25-May-

2009

000000003

2005

PERSONNEL MISSION
ASSIGNMENTS

COOL STATS

EndDate Latitude Longitude ControlCenterID 25-Dec-0000000008 Pluto 44 -79 000000003 2077 25-May-0000000001 -120 0000000001 2007

Venus

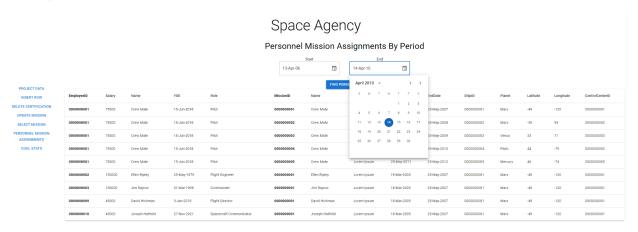
71

000000003

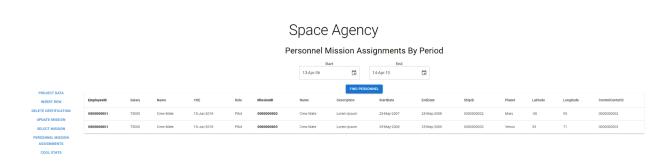
Join (Mission and AssignedTo)

Before

During



After

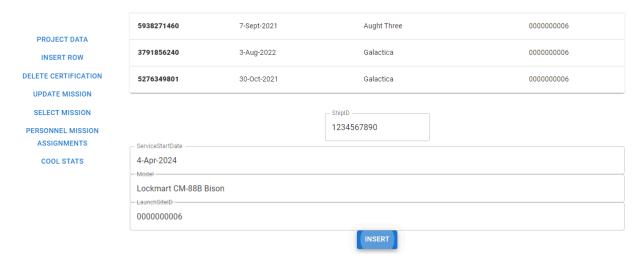


Aggregation with Group By (Ship count by class)

Before

Space Agency Ship Counts by Class PROJECT DATA ShipCount INSERT ROW DELETE CERTIFICATION M-Class 2 UPDATE MISSION L-Class 11 SELECT MISSION S-Class 10 PERSONNEL MISSION ASSIGNMENTS

During (query runs on page load, any successful updates to the database are broadcast and triggers the query again, here we insert a ship)



After

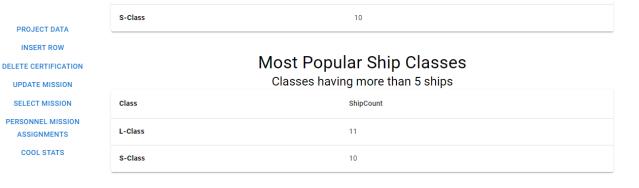
ASSIGNMENTS COOL STATS

Space Agency

		Ship Counts by Class
PROJECT DATA INSERT ROW	Class	ShipCount
DELETE CERTIFICATION	M-Class	3
UPDATE MISSION SELECT MISSION	L-Class	11
PERSONNEL MISSION ASSIGNMENTS	S-Class	10

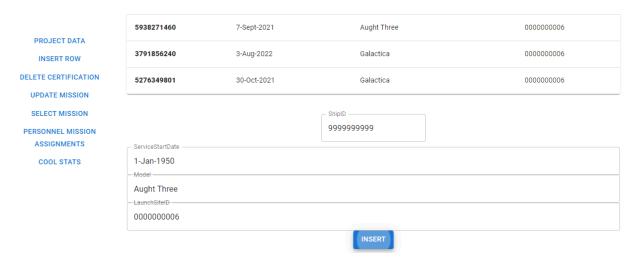
Aggregation with HAVING (Ship count by class having more than 5)

Before

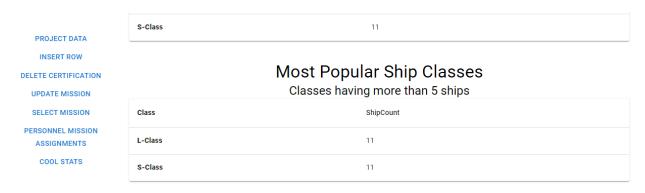


During (query runs on page load, any successful updates to the database are broadcast and triggers the query again, here we insert a ship)

Space Agency



After

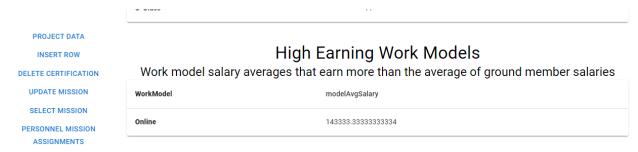


Nested Aggregation with GROUP BY

Before

COOL STATS

Space Agency



Personnel Working On All Missions

During (query runs on page load, any successful updates to the database are broadcast and triggers the query again, here we insert a personnel and then insert him as a ground member with a massive category winning salary)

Space Agency 788888888 2-0ct-2418 200000 Arcturus Mengsk PROJECT DATA 888888888 85000 Tassadar 23-Jun-2323 INSERT ROW DELETE CERTIFICATION 65000 12-Dec-2312 Fenix UPDATE MISSION SELECT MISSION 1234567890 PERSONNEL MISSION ASSIGNMENTS 99999999999 COOL STATS Jeff Bezos 4-4-2024 Space Agency 788888888 In-Person 000000001 PROJECT DATA 888888888 Online 0000000002 INSERT ROW DELETE CERTIFICATION 988888888 In-Person 0000000002 **UPDATE MISSION** SELECT MISSION EmployeeID 1234567890 PERSONNEL MISSION ASSIGNMENTS WorkModel COOL STATS FacilityID 0000000002 Clearance 99

After

Space Agency

PROJECT DATA		
INSERT ROW		High Earning Work Models
DELETE CERTIFICATION	Work model sa	lary averages that earn more than the average of ground member salaries
UPDATE MISSION	WorkModel	modelAvgSalary
SELECT MISSION		
PERSONNEL MISSION	In-Person	111111194999.88889
ASSIGNMENTS		

Personnel Working On All Missions

Division

COOL STATS

Before

SELECT MISSION

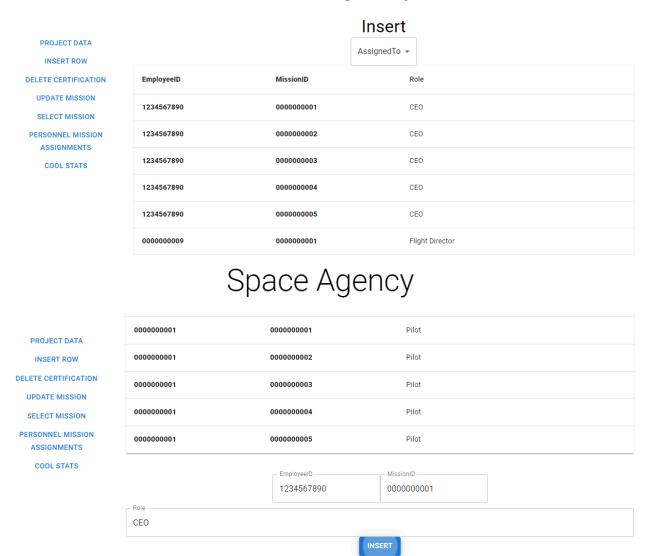
PERSONNEL MISSION

ASSIGNMENTS

COOL STATS

In-Person	111111194999.88889	
	Personnel Working On All Missions	
EmployeeID		
000000001		

During (query runs on page load, any successful updates to the database are broadcast and triggers the query again, here we insert a personnel and assign him to every mission)



After

UPDATE MISSION
SELECT MISSION
PERSONNEL MISSION
ASSIGNMENTS
COOL STATS

In-Person	111111194999.88889	
	Personnel Working On All Missions	
EmployeeID		
000000001		
1234567890		