

# **CPSC 304 Project Cover Page**

Milestone #: 4

Date: 5th April 2024

Group Number: 75

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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.

## Car Parking Management System (CPMS)

### **Deliverables**

#### **Repository Link:**

[CPSC304-2023W-T2/project\\_f4j3s\\_f7t7m\\_k2c7t \(ubc.ca\)](https://CPSC304-2023W-T2/project_f4j3s_f7t7m_k2c7t.ubc.ca)

### **2. Project Description**

Our project involves the development of a database system tailored for multi-level car parks. This application is designed to streamline the management of parking facilities, providing a solution for overseeing operations, assessing profitability, and analyzing car distribution within a network of parking lots. The primary goal is to enhance efficiency and user experience in parking lots while addressing common challenges such as finding parking spaces in crowded areas, locating parked cars, and planning ahead for reservations.

In our implementation, we created a working application that can be used by gate staff in parking facilities to record and delete car entries. We also added a supervisor functionality that provides business and logistical insights. A few of the features include checking for the busiest gates, checking for used payment methods in gates, viewing revenue, employee management, and many more.

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## **3. Changes in ER Diagram and Schema**

Throughout the process of our implementation, we altered our Entity Relationship Diagram several times. In particular, we introduced some naming changes for some tables. We have updated them such that the new diagram in this milestone is consistent with our code. The name changes are as follows:

- Vehicle is now VehicleClass.
- Plate# is now PlateNumber.
- WorkOrder# is now WorkOrderID.
- ID (an attribute of ParkingSlot) is now ParkingSlotID.
- ID (an attribute of Payment) is now PaymentID.
- ZoneID is now ParkingZoneID.
- ZoneType is now ParkingZoneType.
- TotalSlots (an attribute in Zone) is now ZoneTotalSlots.
- ZIP (an attribute in Tower) is now Zip.
- OutletBranch is now BranchClient.
- Branch# is now BranchID.

Additionally, we also deleted several attributes. The deletions are as follows:

- HourlyRate from VehicleClass. This is because we only have three weight classifications. Instead of having an extra column for the hourly rate for each vehicle entered in our database (and note that we can have a very large number of vehicles), we just create a new reference table (i.e. an entity) called WeightRate which stores only three rates for each type of vehicle.
- FilledSlots and RemainingSlots from both Zone and Tower entities. We decided that these would not be stored, as we can easily make a query, rather than creating an increment/decrement system based on entering and exiting vehicles.
- ParkingCap from BranchClient. Similar to the previous point, we decided to make this a JOIN query instead.

Finally we added several new parts and changed some constraints, listed below.

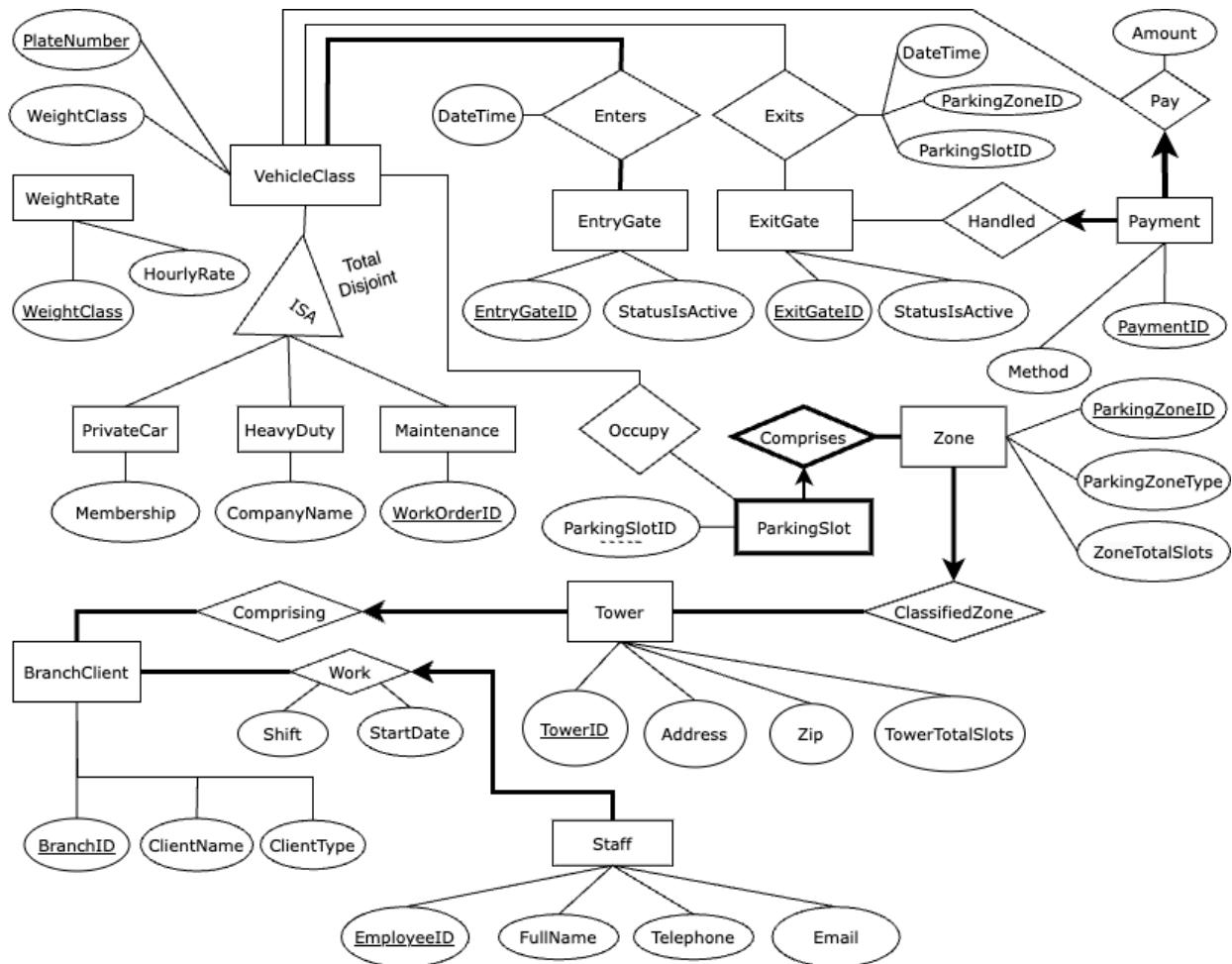
- Added a TowerID primary key to Tower, and removed Zip and Address from primary key status. This just made more sense, and it made the code more robust and feasible to implement.
- Added TowerTotalSlots to the Tower entity. This also made things easier to implement for us. This particularly helps when querying for the count of parking slots in each branch.
- Added an Amount attribute to the Pay relationship. This is clearly insightful data for the purpose of our whole system, as we can calculate revenues.

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- Added ParkingZoneID and ParkingSlotID to Exits. This allowed us to take note of the parking history of each vehicle. Every time a vehicle leaves our facilities, we take record of the zone and slot that they parked in. This functionality was vaguely described in the previous stages of our project, but with this design we managed to create a successful and effective procedure.
- Altered the key and participation constraint for the Pay relationship. We changed it to “a many to one”, changed the VehicleClass side to non-total participation, and kept the Payment side to total participation. All vehicles in our VehicleClass table are past/current users of our system. Everytime a vehicle exits our facilities, a Pay record is added. Perhaps some vehicles just entered our parking facility and have not paid. These vehicles will be added to VehicleClass (as they are listed as past/current users), but they won’t show up in Pay yet as they have not exited our facility. Hence the non-total participation. On the other hand, payments must correspond to a singular vehicle, and every vehicle may have more than one payment (they can use our facilities multiple times). Therefore, we have the total participation on the payment side.

The updated ER Diagram is as follows.



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Based on the above changes to the Entity Relationship Diagram, we also list the corresponding equivalent changes in our schema. The following is our updated schema for our tables. Note that bold means foreign key, and underlined means primary key.

- VehicleClass(PlateNumber: VARCHAR(10), WeightClass: CHAR(1)).
- WeightRate(WeightClass: CHAR(1), HourlyRate: INT).
- EntryGate(EntryGateID: INT, StatusIsActive: INT).
- ExitGate(ExitGateID: INT, StatusIsActive: INT).
- PrivateCar(**PlateNumber**: VARCHAR(10), Membership: VARCHAR(12)).
- HeavyDuty(**PlateNumber**: VARCHAR(10), CompanyName: VARCHAR(255)).
- Maintenance(**PlateNumber**: VARCHAR(10), CompanyName: WorkOrderID(12)).
- Payment(PaymentID: VARCHAR(255), Method: VARCHAR(255), Amount: FLOAT, **PlateNumber**: VARCHAR(10), **ExitGateID**: INT).
- Enters(Date: DATETIME, **EntryGateID**: INT, **PlateNumber**: VARCHAR(10)).
- BranchClient(BranchID: VARCHAR(12), ClientName: VARCHAR(255), ClientType: CHAR(1)).
- Staff(EmployeeID: INT, Fullname: VARCHAR(255), Telephone: CHAR(10), Email: VARCHAR(255), Shift: VARCHAR(255), StartDate: DATE, **BranchID**: VARCHAR(12))  
Note that Email must be UNIQUE as it is a candidate key.
- Tower(TowerID: VARCHAR(8), Address: VARCHAR(255), Zip: CHAR(6), TowerTotalSlots: INT, **BranchID**: VARCHAR(12)).
- ParkingZone(ParkingZoneID: INT, ParkingZoneType: INT, ZoneTotalSlots: INT, **TowerID**: VARCHAR(8)).
- ParkingSlot(ParkingSlotID: VARCHAR(8), **ParkingZoneID**: INT).
- Exits(Date: DATETIME, **ExitGateID**: INT, **PlateNumber**: VARCHAR(10), **ParkingZoneID**: INT, **ParkingSlotID**: VARCHAR(8)).
- Occupy(**ParkingSlotID**: VARCHAR(8), **ParkingZoneID**: INT, **PlateNumber**: VARCHAR(10)).

### 3.D SQL Queries

#### 1. Delete

Found in: /backend/routes/basic.js lines 117-127

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```
//Delete Query to delete a branch and cascade
router.post('/deletebranch', (req, res) => {
    let query = 'DELETE FROM BranchClient WHERE BranchID = ?';
    db.query(query, [req.body.branchID], (err, response) => {
        if (err) {
            res.status(500).send(err.message);
            return;
        }
        res.send("Branch Deleted Successfully");
    });
});
```

## 2. Update

Found in: /backend/routes/basic.js Lines 129-148

```
129 //Update query to update the staff table
130 router.post('/updatestaff', (req, res) => {
131     let query2 = `UPDATE Staff
132     SET FullName = ?, email = ?, Telephone = ?, BranchID = ?, Shift = ?, StartDate = ?
133     WHERE EmployeeID = ?`;
134     const values = [req.body.fullName, req.body.email, req.body.telephone, req.body.branchID, req.body.shift, req.body.startDate, req.body.employeeID];
135     console.log(values);
136     try{
137         db.query(query2, values, (err, result) => {
138             if (err) {
139                 res.status(500).send(err.message);
140                 return;
141             }
142             res.send("Employee Updated Successfully");
143         })> catch (err) {
144             console.log(err);
145             res.status(500).send(err.message);
146             return;
147         }
148     });
});
```

## 3. Aggregation with GROUP BY

Found in: /backend/routes/basic.js Lines 150-166

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```
150 //Aggregation query to count how many times specific plate number has entered
151 router.post('/countentries', (req, res) => {
152     let query = `SELECT PlateNumber, COUNT(*) AS entries FROM Enters
153     GROUP BY PlateNumber;`
154     try{
155         db.query(query, (err, response) => {
156             if (err) {
157                 res.status(500).send(err.message);
158                 return;
159             }
160             res.send(response);
161         })} catch (err) {
162         console.log(err);
163         res.status(500).send(err.message);
164         return;
165     }
166 });

});
```

### 4. Nested Aggregation with GROUP BY

Found in: /backend/routes/basic.js Lines 169-190

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```
169 // Nested Aggregation query to find the busiest gate
170 router.post('/busiestgate', (req, res) => {
171     let query = `SELECT ExitGateID, COUNT(*) AS exits
172         FROM Exits
173         GROUP BY ExitGateID
174         HAVING COUNT(*) >= ALL (
175             SELECT COUNT(*)
176             FROM Exits e
177             GROUP BY e.ExitGateID);`
178     try{
179         db.query(query, (err, response) => {
180             if (err) {
181                 res.status(500).send(err.message);
182                 return;
183             }
184             res.send(response);
185         }) catch (err) {
186             console.log(err);
187             res.status(500).send(err.message);
188             return;
189         }
190     });
});
```

## 5. Insert

Found in: /backend/routes/EnterExit.js Lines 195-225

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```
195     const sql4 = 'INSERT INTO Occupy VALUES (?, ?, ?)';
196     const values4 = [parkingSlotID, zoneID, plateNumber];
197
198     try {
199       db.query(sql4, values4, (err, result, fields) => {
200         if (err) {
201           return console.log(err.message);
202         }
203         return console.log(result);
204       })} catch (err) {
205         res.status(500).send(err.message);
206         return;
207       }
208
209     let sql3 = 'INSERT INTO Enters VALUES (NOW(), ?, ?)';
210     let values3 = [entryGate, plateNumber];
211
212     try{
213       db.query(sql3, values3, (err, result, fields) => {
214         if (err) {
215           console.log(err.message);
216           console.log("r2");
217           return;
218         }
219       })
220       return console.log(result);
221     })} catch (err) {
222       res.status(500).send(err.message);
223       return;
224     }
225   }
```

### 6. Selection

Found in: /backend/routes/basic.js Lines 374-397

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```
374 //Selection query on staff table
375 router.post('/selectstaff', (req, res) => {
376   const { whereClause } = req.body;
377   if (!whereClause || typeof whereClause !== 'string') {
378     res.status(400).send('Invalid request body');
379     return;
380   }
381
382   const query = `SELECT * FROM Staff WHERE ${whereClause};`;
383
384   try {
385     db.query(query, (err, response) => {
386       if (err) {
387         res.status(500).send(err.message);
388         return;
389       }
390       res.send(response);
391     });
392   } catch (err) {
393     console.log(err);
394     res.status(500).send(err.message);
395     return;
396   }
397 }
```

## 7. Having Aggregation

Found in: /backend/routes/basic.js Lines 192-210

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```
192 //Having Aggregation query to find total amount of payments made by each method over certain amount
193 router.post('/methodamt', (req, res) => {
194   let query = `SELECT Method, SUM(Amount) AS total
195   FROM Payment p
196   GROUP BY Method
197   HAVING SUM(Amount) > ?;`
198   try{
199     db.query(query, [req.body.amount], (err, response) => {
200       if (err) {
201         res.status(500).send(err.message);
202         return;
203       }
204       res.send(response);
205     })} catch (err) {
206     console.log(err);
207     res.status(500).send(err.message);
208     return;
209   }
210 });

});
```

## 8. Join

Found in: /backend/routes/basic.js Lines 212-231

```
212 //Join Query to find the total slots for each client.
213 router.post('/branchslots', (req, res) => {
214   let query = `SELECT bc.ClientName , SUM(t.TowerTotalSlots) AS totalSlots
215   FROM BranchClient bc, Tower t
216   WHERE bc.BranchID = t.BranchID
217   GROUP BY bc.ClientName
218   ORDER BY totalSlots DESC;`
219   try{
220     db.query(query, (err, response) => {
221       if (err) {
222         res.status(500).send(err.message);
223         return;
224       }
225       res.send(response);
226     })} catch (err) {
227     console.log(err);
228     res.status(500).send(err.message);
229     return;
230   }
231 });

});
```

## 9. Division

Found in: /backend/routes/basic.js Lines 233-257

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```
233 //Divison Query to get gate which supports all payment methods.
234 router.post('/gatewithmethod', (req, res) => {
235   let query = `SELECT DISTINCT p1.ExitGateID
236     FROM Payment p1
237     WHERE NOT EXISTS (
238       SELECT DISTINCT p2.Method
239         FROM Payment p2
240       EXCEPT
241       SELECT DISTINCT p3.Method
242         from Payment p3
243         WHERE p3.ExitGateID = p1.ExitGateID
244     );` 
245   try {
246     db.query(query, (err, response) => {
247       if (err) {
248         res.status(500).send(err.message);
249         return;
250       }
251       res.send(response);
252     })} catch (err) {
253       console.log(err);
254       res.status(500).send(err.message);
255       return;
256     }
257   });
}
```

### 10. Projection

Found in: /backend/routes/basic.js Lines 348-372

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```
292 //For Projection: All Table names
293 router.post('/alltables', (req, res) => {
294     let query = `SHOW TABLES;`
295     try {
296         db.query(query, (err, response) => {
297             if (err) {
298                 res.status(500).send(err.message);
299                 return;
300             }
301             res.send(response);
302         })} catch (err) {
303         console.log(err);
304         res.status(500).send(err.message);
305         return;
306     }
307 });

});
```

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```
310  //For projection: All attributes of a given table
311  router.post('/allattributes', async (req, res) => {
312      let tablesQuery = `SHOW TABLES;`
313      let columnsQuery = `SHOW COLUMNS FROM ${req.body.table};`
314      try {
315          // Get all tables
316          const tables = await new Promise((resolve, reject) => {
317              db.query(tablesQuery, (err, response) => {
318                  if (err) {
319                      reject(err);
320                      return;
321                  }
322                  resolve(response.map(table => table.Tables_in_cpms_db));
323              });
324          });
325
326          // Check if table exists
327          if (!tables.includes(req.body.table)) {
328              res.status(400).send('Table does not exist');
329              return;
330          }
331
332          // Get columns
333          db.query(columnsQuery, (err, response) => {
334              if (err) {
335                  res.status(500).send(err.message);
336                  return;
337              }
338              const columnNames = response.map(column => column.Field);
339              res.send(columnNames);
340          })
341      } catch (err) {
342          console.log(err);
343          res.status(500).send(err.message);
344          return;
345      }
}
```

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```
348 //Projection on selected table with selected attributes
349 router.post('/selectattributes', (req, res) => {
350   const { table, attributes } = req.body;
351   if (!table || !attributes || !Array.isArray(attributes) || attributes.some(attr => typeof attr !== 'string')) {
352     res.status(400).send('Invalid request body');
353     return;
354   }
355
356   const placeholders = attributes.map(() => '?').join(', ');
357   const query = `SELECT ${placeholders} FROM ??`;
358
359   try {
360     db.query(query, [...attributes, table], (err, response) => {
361       if (err) {
362         res.status(500).send(err.message);
363         return;
364       }
365       res.send(response);
366     });
367   } catch (err) {
368     console.log(err);
369     res.status(500).send(err.message);
370     return;
371   }
372 });
```

e)

### 1) Insert

Tables before insertion:

a) Occupy:

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	ParkingSlotID	ParkingZoneID	PlateNumber
1	SLOT01	100	PLATE4321
2	SLOT02	100	PLATE5432
3	SLOT03	100	PLATE6543
4	SLOT04	100	PLATE7654
5	SLOT05	100	PLATE8765
6	SLOT06	100	PLATE9876
7	SLOT07	100	PLATE0987
8	SLOT08	101	PLATE2435
9	SLOT09	101	PLATE3645
10	SLOT10	101	PLATE7457
11	SLOT11	101	PLATE1199
12	SLOT12	101	PLATE2288
13	SLOT13	101	PLATE3377
14	SLOT14	101	PLATE4466
15	SLOT15	101	PLATE6644
16	SLOT16	101	PLATE7733
17	SLOT11	102	PLATE2828
18	SLOT12	102	PLATE0522
19	SLOT13	102	PLATE0622
20	SLOT14	102	PLATE0722
21	SLOT15	102	PLATE0822
22	SLOT16	102	PLATE0922
23	SLOT17	102	PLATE8822
24	SLOT18	102	PLATE9911
25	SLOT19	102	PLATE1919

b) VehicleClass

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	ABC PlateNumber	ABC WeightClass
1	PLATE0123	B
2	PLATE0500	C
3	PLATE0511	C
4	PLATE0522	C
5	PLATE0600	C
6	PLATE0611	C
7	PLATE0622	C
8	PLATE0700	C
9	PLATE0711	C
10	PLATE0722	C
11	PLATE0800	C
12	PLATE0811	C
13	PLATE0822	C
14	PLATE0900	C
15	PLATE0911	C
16	PLATE0922	C
17	PLATE0987	A
18	PLATE1199	B
19	PLATE1234	A
20	PLATE1556	A
21	PLATE1557	B
22	PLATE1919	B
23	PLATE2288	B
24	PLATE2345	A
25	PLATE2435	A
26	PLATE2828	B
27	PLATE3377	B
28	PLATE3456	A
29	PLATE3645	A
30	PLATE4321	A
31	PLATE4466	B
32	PLATE4567	A
33	PLATE5432	A
34	PLATE5678	A
35	PLATE6543	A
36	PLATE6644	B
37	PLATE6789	B
38	PLATE7457	A
39	PLATE7654	A

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40	PLATE7733	B
41	PLATE7890	B
42	PLATE8765	A
43	PLATE8822	B
44	PLATE8901	B
45	PLATE9012	B
46	PLATE9876	A
47	PLATE9911	B

c) PrivateCar

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1	 PLATE0987	a1238b
2	 PLATE1234	p6725f
3	 PLATE1556	None
4	 PLATE2345	t9123a
5	 PLATE2435	j1923h
6	 PLATE3456	r1231b
7	 PLATE3645	n9212p
8	 PLATE4321	[NULL]
9	 PLATE4567	m1023i
10	 PLATE5432	[NULL]
11	 PLATE5678	q1029y
12	 PLATE6543	[NULL]
13	 PLATE7457	k1920r
14	 PLATE7654	[NULL]
15	 PLATE8765	[NULL]
16	 PLATE9876	x1273a

d) Enters:

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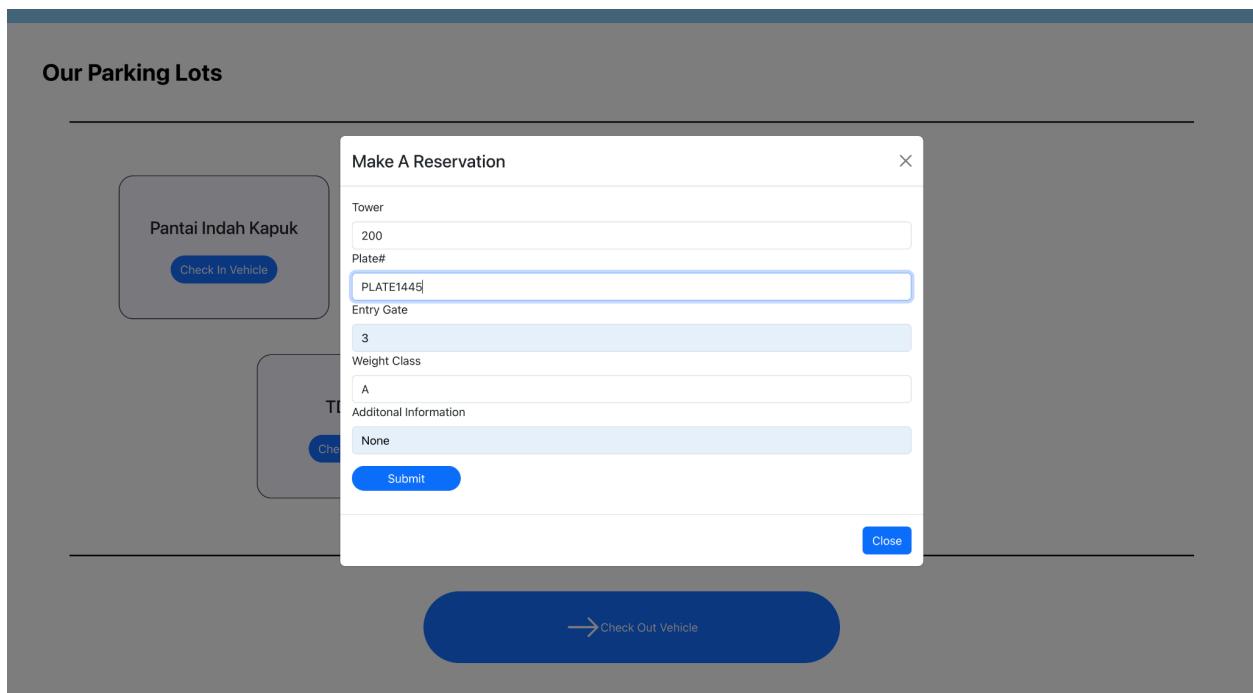
1	2023-01-01 08:00:00	1  	PLATE1234
2	2023-01-01 08:30:00	1  	PLATE0511
3	2023-01-02 08:42:00	1  	PLATE0611
4	2023-01-02 09:00:00	1  	PLATE2345
5	2023-01-05 09:02:00	1  	PLATE2435
6	2023-01-06 08:40:20	1  	PLATE0500
7	2023-01-01 08:03:47	2  	PLATE0922
8	2023-01-03 08:53:00	2  	PLATE0711
9	2023-01-03 10:00:00	2  	PLATE3456
10	2023-01-04 09:03:00	2  	PLATE3645
11	2023-01-04 09:04:00	2  	PLATE7457
12	2023-01-06 08:00:10	2  	PLATE0600
13	2023-01-01 08:02:33	3  	PLATE0822
14	2023-01-04 10:00:00	3  	PLATE4567
15	2023-01-06 08:20:30	3  	PLATE0700
16	2024-04-06 01:25:29	3  	PLATE1556
17	2024-04-06 01:26:23	3  	PLATE1557
18	2023-01-05 10:00:00	4  	PLATE5678
19	2023-01-06 08:00:40	4  	PLATE0800
20	2023-01-01 08:01:00	5  	PLATE4321
21	2023-01-04 08:49:00	5  	PLATE0811
22	2023-01-05 08:05:00	5  	PLATE8765
23	2023-01-06 08:01:51	5  	PLATE0900
24	2023-01-06 08:17:00	5  	PLATE0722
25	2023-01-01 08:02:00	6  	PLATE5432
26	2023-01-05 08:02:00	6  	PLATE0911
27	2023-01-01 08:03:00	7  	PLATE6543
28	2023-01-01 08:04:00	7  	PLATE7654
29	2023-01-05 08:03:00	7  	PLATE0522
30	2023-01-06 08:13:00	8  	PLATE0622
31	2023-01-01 07:07:00	9  	PLATE9911
32	2023-01-05 08:06:00	9  	PLATE9876
33	2023-01-01 07:08:00	10  	PLATE1919
34	2023-01-03 07:06:00	10  	PLATE8822
35	2023-01-05 09:01:00	10  	PLATE0987
36	2023-01-01 07:09:00	11  	PLATE2828
37	2023-01-02 11:01:00	11  	PLATE6789
38	2023-01-02 11:02:00	11	PLATE7890
39	2023-01-02 11:03:00	11	PLATE8901

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40	2023-01-02 11:04:00	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE9012
41	2023-01-02 11:05:00	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE0123
42	2023-01-03 07:05:00	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE7733
43	2023-01-02 07:00:00	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE1199
44	2023-01-02 07:02:00	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE3377
45	2023-01-03 07:04:00	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE6644
46	2023-01-02 07:01:00	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE2288
47	2023-01-02 07:03:00	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE4466

During Insertion:



After Insertion:

a) Occupy:

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	ParkingSlotID	ParkingZoneID	PlateNumber
1	SLOT01	27	PLATE1445
2	SLOT01	100	PLATE4321
3	SLOT02	100	PLATE5432
4	SLOT03	100	PLATE6543
5	SLOT04	100	PLATE7654
6	SLOT05	100	PLATE8765
7	SLOT06	100	PLATE9876
8	SLOT07	100	PLATE0987
9	SLOT08	101	PLATE2435
10	SLOT09	101	PLATE3645
11	SLOT10	101	PLATE7457
12	SLOT11	101	PLATE1199
13	SLOT12	101	PLATE2288
14	SLOT13	101	PLATE3377
15	SLOT14	101	PLATE4466
16	SLOT15	101	PLATE6644
17	SLOT16	101	PLATE7733
18	SLOT11	102	PLATE2828
19	SLOT12	102	PLATE0522
20	SLOT13	102	PLATE0622
21	SLOT14	102	PLATE0722
22	SLOT15	102	PLATE0822
23	SLOT16	102	PLATE0922
24	SLOT17	102	PLATE8822
25	SLOT18	102	PLATE9911
26	SLOT19	102	PLATE1919

b) VechicleClass:

# University of British Columbia, Vancouver

## Department of Computer Science

	PlateNumber	WeightClass
1	PLATE0123	B
2	PLATE0500	C
3	PLATE0511	C
4	PLATE0522	C
5	PLATE0600	C
6	PLATE0611	C
7	PLATE0622	C
8	PLATE0700	C
9	PLATE0711	C
10	PLATE0722	C
11	PLATE0800	C
12	PLATE0811	C
13	PLATE0822	C
14	PLATE0900	C
15	PLATE0911	C
16	PLATE0922	C
17	PLATE0987	A
18	PLATE1199	B
19	PLATE1234	A
20	PLATE1445	A
21	PLATE1556	A
22	PLATE1557	B
23	PLATE1919	B
24	PLATE2288	B
25	PLATE2345	A
26	PLATE2435	A
27	PLATE2828	B
28	PLATE3377	B
29	PLATE3456	A
30	PLATE3645	A
31	PLATE4321	A
32	PLATE4466	B
33	PLATE4567	A
34	PLATE5432	A
35	PLATE5678	A
36	PLATE6543	A
37	PLATE6644	B
38	PLATE6789	B
39	PLATE7457	A

**University of British Columbia, Vancouver**

Department of Computer Science

40	PLATE7654	A
41	PLATE7733	B
42	PLATE7890	B
43	PLATE8765	A
44	PLATE8822	B
45	PLATE8901	B
46	PLATE9012	B
47	PLATE9876	A
48	PLATE9911	B

c) PrivateCar:

# University of British Columbia, Vancouver

Department of Computer Science

	 PlateNumber	 Membership
1	 PLATE0987	a1238b
2	 PLATE1234	p6725f
3	 PLATE1445	None
4	 PLATE1556	None
5	 PLATE2345	t9123a
6	 PLATE2435	j1923h
7	 PLATE3456	r1231b
8	 PLATE3645	n9212p
9	 PLATE4321	[NULL]
10	 PLATE4567	m1023i
11	 PLATE5432	[NULL]
12	 PLATE5678	q1029y
13	 PLATE6543	[NULL]
14	 PLATE7457	k1920r
15	 PLATE7654	[NULL]
16	 PLATE8765	[NULL]
17	 PLATE9876	x1273a

d) Enters:

# University of British Columbia, Vancouver

## Department of Computer Science

	Date Time	Entry Gate ID	Plate Number
1	2023-01-01 08:00:00	1	PLATE1234
2	2023-01-01 08:30:00	1	PLATE0511
3	2023-01-02 08:42:00	1	PLATE0611
4	2023-01-02 09:00:00	1	PLATE2345
5	2023-01-05 09:02:00	1	PLATE2435
6	2023-01-06 08:40:20	1	PLATE0500
7	2023-01-01 08:03:47	2	PLATE0922
8	2023-01-03 08:53:00	2	PLATE0711
9	2023-01-03 10:00:00	2	PLATE3456
10	2023-01-04 09:03:00	2	PLATE3645
11	2023-01-04 09:04:00	2	PLATE7457
12	2023-01-06 08:00:10	2	PLATE0600
13	2023-01-01 08:02:33	3	PLATE0822
14	2023-01-04 10:00:00	3	PLATE4567
15	2023-01-06 08:20:30	3	PLATE0700
16	2024-04-06 01:25:29	3	PLATE1556
17	2024-04-06 01:26:23	3	PLATE1557
18	2024-04-06 02:18:41	3	PLATE1445
19	2023-01-05 10:00:00	4	PLATE5678
20	2023-01-06 08:00:40	4	PLATE0800
21	2023-01-01 08:01:00	5	PLATE4321
22	2023-01-04 08:49:00	5	PLATE0811
23	2023-01-05 08:05:00	5	PLATE8765
24	2023-01-06 08:01:51	5	PLATE0900
25	2023-01-06 08:17:00	5	PLATE0722
26	2023-01-01 08:02:00	6	PLATE5432
27	2023-01-05 08:02:00	6	PLATE0911
28	2023-01-01 08:03:00	7	PLATE6543
29	2023-01-01 08:04:00	7	PLATE7654
30	2023-01-05 08:03:00	7	PLATE0522
31	2023-01-06 08:13:00	8	PLATE0622
32	2023-01-01 07:07:00	9	PLATE9911
33	2023-01-05 08:06:00	9	PLATE9876
34	2023-01-01 07:08:00	10	PLATE1919
35	2023-01-03 07:06:00	10	PLATE8822
36	2023-01-05 09:01:00	10	PLATE0987
37	2023-01-01 07:09:00	11	PLATE2828
38	2023-01-02 11:01:00	11	PLATE6789
39	2023-01-02 11:02:00	11	PLATE7890

# **University of British Columbia, Vancouver**

Department of Computer Science

40	2023-01-02 11:03:00	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE8901
41	2023-01-02 11:04:00	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE9012
42	2023-01-02 11:05:00	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE0123
43	2023-01-03 07:05:00	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE7733
44	2023-01-02 07:00:00	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE1199
45	2023-01-02 07:02:00	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE3377
46	2023-01-03 07:04:00	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE6644
47	2023-01-02 07:01:00	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE2288
48	2023-01-02 07:03:00	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLATE4466

## **2) Deletion:**

Tables before Deletion:

- a) Occupy

# University of British Columbia, Vancouver

## Department of Computer Science

	ParkingSlotID	ParkingZoneID	PlateNumber
1	SLOT02	25	PLATE1557
2	SLOT01	100	PLATE4321
3	SLOT02	100	PLATE5432
4	SLOT03	100	PLATE6543
5	SLOT04	100	PLATE7654
6	SLOT05	100	PLATE8765
7	SLOT06	100	PLATE9876
8	SLOT07	100	PLATE0987
9	SLOT08	101	PLATE2435
10	SLOT09	101	PLATE3645
11	SLOT10	101	PLATE7457
12	SLOT11	101	PLATE1199
13	SLOT12	101	PLATE2288
14	SLOT13	101	PLATE3377
15	SLOT14	101	PLATE4466
16	SLOT15	101	PLATE6644
17	SLOT16	101	PLATE7733
18	SLOT11	102	PLATE2828
19	SLOT12	102	PLATE0522
20	SLOT13	102	PLATE0622
21	SLOT14	102	PLATE0722
22	SLOT15	102	PLATE0822
23	SLOT16	102	PLATE0922
24	SLOT17	102	PLATE8822
25	SLOT18	102	PLATE9911
26	SLOT19	102	PLATE1919

b) Exits:

# University of British Columbia, Vancouver

## Department of Computer Science

	DateTime	123 ExitGateID	PlateNumber	123 ParkingZoneID	ParkingSlotID
1	2023-01-01 18:00:00	1	PLATE1234	51	SLOT10
2	2023-01-01 19:30:00	2	PLATE0511	18	SLOT05
3	2023-01-02 09:42:00	2	PLATE0611	18	SLOT01
4	2023-01-02 13:01:00	2	PLATE6789	51	SLOT07
5	2023-01-02 14:02:00	5	PLATE7890	45	SLOT02
6	2023-01-02 15:03:00	1	PLATE8901	32	SLOT10
7	2023-01-02 16:04:00	4	PLATE9012	29	SLOT03
8	2023-01-02 17:05:00	4	PLATE0123	29	SLOT09
9	2023-01-02 19:00:00	2	PLATE2345	27	SLOT11
10	2023-01-03 20:00:00	3	PLATE3456	25	SLOT12
11	2023-01-03 22:53:00	5	PLATE0711	18	SLOT01
12	2023-01-04 21:00:00	4	PLATE4567	29	SLOT13
13	2023-01-04 22:49:00	5	PLATE0811	15	SLOT02
14	2023-01-05 12:02:00	5	PLATE0911	15	SLOT15
15	2023-01-05 22:00:00	5	PLATE5678	45	SLOT14
16	2023-01-06 09:01:51	5	PLATE0900	25	SLOT11
17	2023-01-06 10:00:40	3	PLATE0800	27	SLOT08
18	2023-01-06 11:40:20	4	PLATE0500	29	SLOT04
19	2023-01-06 20:00:10	3	PLATE0600	27	SLOT04
20	2023-01-06 20:20:30	3	PLATE0700	27	SLOT08
21	2024-04-06 01:27:42	2	PLATE1556	25	SLOT01
22	2024-04-06 02:01:24	1	PLATE1557	25	SLOT02

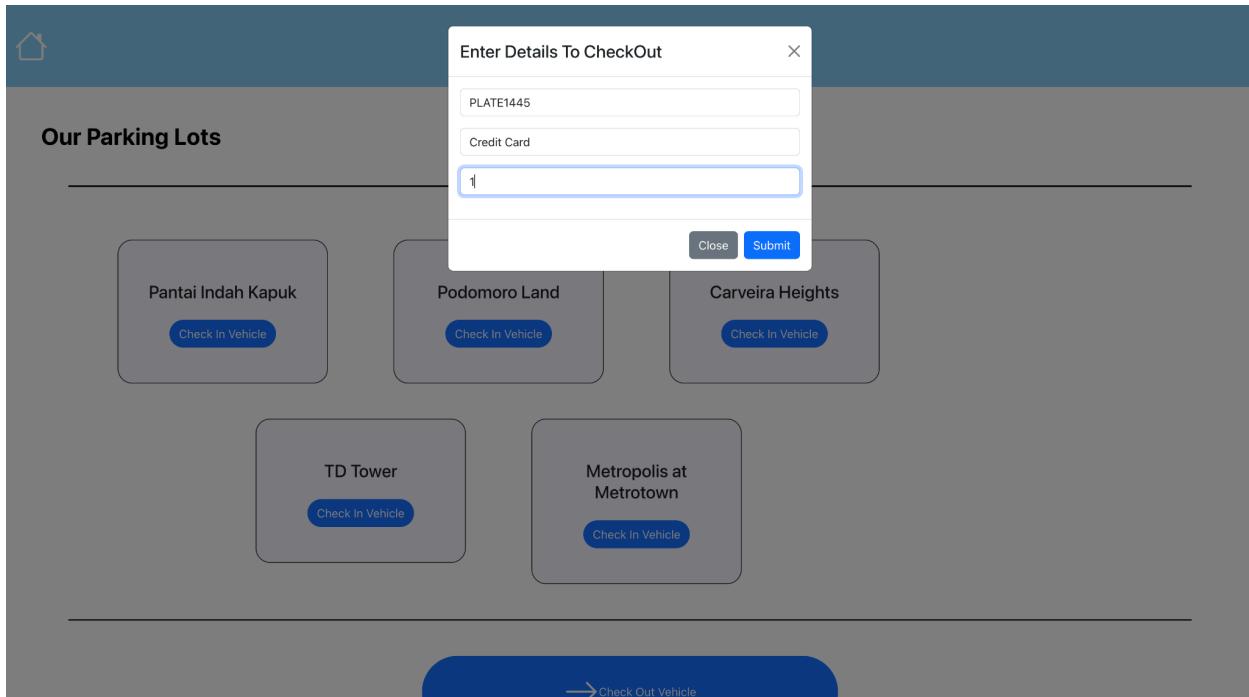
c) Payment:

	PaymentID	Method	123 Amount	PlateNumber	123 ExitGateID
1	92f8c54d-f3b9-11ee-8326-06c6302fb28f	Debit Card	5.836	PLATE1557	1
2	a7d0443a-f39b-11ee-8326-06c6302fb28f	Credit Card	50	PLATE1234	1
3	a7df0f4a-f39b-11ee-8326-06c6302fb28f	Credit Card	50	PLATE2345	2
4	a7eb56d4-f39b-11ee-8326-06c6302fb28f	Cash	50	PLATE3456	3
5	a805c79b-f39b-11ee-8326-06c6302fb28f	Cash	55	PLATE4567	4
6	a8142060-f39b-11ee-8326-06c6302fb28f	Cash	60	PLATE5678	5
7	a82c2c23-f39b-11ee-8326-06c6302fb28f	Cash	6	PLATE0500	1
8	a83a1e31-f39b-11ee-8326-06c6302fb28f	Cash	24	PLATE0600	2
9	a8552fca-f39b-11ee-8326-06c6302fb28f	Cash	24	PLATE0700	1
10	a861bad9-f39b-11ee-8326-06c6302fb28f	Credit Card	4	PLATE0800	2
11	a86e5b4a-f39b-11ee-8326-06c6302fb28f	Credit Card	2	PLATE0900	1
12	a87df71b-f39b-11ee-8326-06c6302fb28f	Debit Card	22	PLATE0511	2
13	a88a2075-f39b-11ee-8326-06c6302fb28f	Debit Card	1	PLATE0611	1
14	a8a9b156-f39b-11ee-8326-06c6302fb28f	Debit Card	28	PLATE0711	2
15	a8b6a977-f39b-11ee-8326-06c6302fb28f	Debit Card	28	PLATE0811	1
16	a8c3869e-f39b-11ee-8326-06c6302fb28f	Debit Card	8	PLATE0911	2
17	a8d65834-f39b-11ee-8326-06c6302fb28f	Debit Card	20	PLATE6789	1
18	a8f9eca2-f39b-11ee-8326-06c6302fb28f	Debit Card	30	PLATE7890	2
19	a90acdbf-f39b-11ee-8326-06c6302fb28f	Debit Card	40	PLATE8901	1
20	a91dbaf5-f39b-11ee-8326-06c6302fb28f	Cash	50	PLATE9012	2
21	a94ea645-f39b-11ee-8326-06c6302fb28f	Cash	60	PLATE0123	1
22	dd7cb794-f3b4-11ee-8326-06c6302fb28f	Cash	0.1845	PLATE1556	2

# University of British Columbia, Vancouver

## Department of Computer Science

During:



After:

a) Occupy:

# University of British Columbia, Vancouver

## Department of Computer Science

Grid	ParkingSlotID	ParkingZoneID	PlateNumber
1	SLOT01	100	PLATE4321
2	SLOT02	100	PLATE5432
3	SLOT03	100	PLATE6543
4	SLOT04	100	PLATE7654
5	SLOT05	100	PLATE8765
6	SLOT06	100	PLATE9876
7	SLOT07	100	PLATE0987
8	SLOT08	101	PLATE2435
9	SLOT09	101	PLATE3645
10	SLOT10	101	PLATE7457
11	SLOT11	101	PLATE1199
12	SLOT12	101	PLATE2288
13	SLOT13	101	PLATE3377
14	SLOT14	101	PLATE4466
15	SLOT15	101	PLATE6644
16	SLOT16	101	PLATE7733
17	SLOT11	102	PLATE2828
18	SLOT12	102	PLATE0522
19	SLOT13	102	PLATE0622
20	SLOT14	102	PLATE0722
21	SLOT15	102	PLATE0822
22	SLOT16	102	PLATE0922
23	SLOT17	102	PLATE8822
24	SLOT18	102	PLATE9911
25	SLOT19	102	PLATE1919

b) Exits:

# University of British Columbia, Vancouver

## Department of Computer Science

	DateTime	ExitGateID	PlateNumber	ParkingZoneID	ParkingSlotID
1	2023-01-01 18:00:00	1	PLATE1234	51	SLOT10
2	2023-01-01 19:30:00	2	PLATE0511	18	SLOT05
3	2023-01-02 09:42:00	2	PLATE0611	18	SLOT01
4	2023-01-02 13:01:00	2	PLATE6789	51	SLOT07
5	2023-01-02 14:02:00	5	PLATE7890	45	SLOT02
6	2023-01-02 15:03:00	1	PLATE8901	32	SLOT10
7	2023-01-02 16:04:00	4	PLATE9012	29	SLOT03
8	2023-01-02 17:05:00	4	PLATE0123	29	SLOT09
9	2023-01-02 19:00:00	2	PLATE2345	27	SLOT11
10	2023-01-03 20:00:00	3	PLATE3456	25	SLOT12
11	2023-01-03 22:53:00	5	PLATE0711	18	SLOT01
12	2023-01-04 21:00:00	4	PLATE4567	29	SLOT13
13	2023-01-04 22:49:00	5	PLATE0811	15	SLOT02
14	2023-01-05 12:02:00	5	PLATE0911	15	SLOT15
15	2023-01-05 22:00:00	5	PLATE5678	45	SLOT14
16	2023-01-06 09:01:51	5	PLATE0900	25	SLOT11
17	2023-01-06 10:00:40	3	PLATE0800	27	SLOT08
18	2023-01-06 11:40:20	4	PLATE0500	29	SLOT04
19	2023-01-06 20:00:10	3	PLATE0600	27	SLOT04
20	2023-01-06 20:20:30	3	PLATE0700	27	SLOT08
21	2024-04-06 01:27:42	2	PLATE1556	25	SLOT01
22	2024-04-06 02:01:24	1	PLATE1557	25	SLOT02
23	2024-04-06 02:55:00	1	PLATE1445	27	SLOT01

### c) Payment:

	PaymentID	Method	Amount	PlateNumber	ExitGateID
1	0fb1d6e1-f3c1-11ee-8326-06c6302fb28f	Credit Card	3.0265	PLATE1445	1
2	92f8c54d-f3b9-11ee-8326-06c6302fb28f	Debit Card	5.836	PLATE1557	1
3	a7d0443a-f39b-11ee-8326-06c6302fb28f	Credit Card	50	PLATE1234	1
4	a7df0f4a-f39b-11ee-8326-06c6302fb28f	Credit Card	50	PLATE2345	2
5	a7eb56d4-f39b-11ee-8326-06c6302fb28f	Cash	50	PLATE3456	3
6	a805c79b-f39b-11ee-8326-06c6302fb28f	Cash	55	PLATE4567	4
7	a8142060-f39b-11ee-8326-06c6302fb28f	Cash	60	PLATE5678	5
8	a82c2c23-f39b-11ee-8326-06c6302fb28f	Cash	6	PLATE0500	1
9	a83a1e31-f39b-11ee-8326-06c6302fb28f	Cash	24	PLATE0600	2
10	a8552fca-f39b-11ee-8326-06c6302fb28f	Cash	24	PLATE0700	1
11	a861bad9-f39b-11ee-8326-06c6302fb28f	Credit Card	4	PLATE0800	2
12	a86e5b4a-f39b-11ee-8326-06c6302fb28f	Credit Card	2	PLATE0900	1
13	a87df71b-f39b-11ee-8326-06c6302fb28f	Debit Card	22	PLATE0511	2
14	a88a2075-f39b-11ee-8326-06c6302fb28f	Debit Card	1	PLATE0611	1
15	a8a9b156-f39b-11ee-8326-06c6302fb28f	Debit Card	28	PLATE0711	2
16	a8b6a977-f39b-11ee-8326-06c6302fb28f	Debit Card	28	PLATE0811	1
17	a8c3869e-f39b-11ee-8326-06c6302fb28f	Debit Card	8	PLATE0911	2
18	a8d65834-f39b-11ee-8326-06c6302fb28f	Debit Card	20	PLATE6789	1
19	a8f9eca2-f39b-11ee-8326-06c6302fb28f	Debit Card	30	PLATE7890	2
20	a90acdbf-f39b-11ee-8326-06c6302fb28f	Debit Card	40	PLATE8901	1
21	a91dbaf5-f39b-11ee-8326-06c6302fb28f	Cash	50	PLATE9012	2
22	a94ea645-f39b-11ee-8326-06c6302fb28f	Cash	60	PLATE0123	1
23	dd7cb794-f3b4-11ee-8326-06c6302fb28f	Cash	0.1845	PLATE1556	2

# University of British Columbia, Vancouver

## Department of Computer Science

### 3) Update:

Tables before update:

Staff:

Grid	EmployeeID	FullName	Telephone	Email	Shift	StartDate	BranchID
1	1	John Doe	1234567890	jdoe@example.com	Morning	2023-01-01	BR001
2	2	John Dowell	1111111111	jdow@example.com	Morning	2023-01-02	BR001
3	3	John Dupont	2222222222	jdop@example.com	Evening	2022-01-01	BR001
4	4	John Do	3333333333	jdo@example.com	Evening	2021-03-01	BR001
5	5	John Do Not	4444444444	jdon@example.com	Night	2023-01-01	BR001
6	6	Jane Smith	5555555555	jsmith@example.com	Morning	2023-02-01	BR002
7	7	Jane Williams	6666666666	jwill@example.com	Morning	2023-02-02	BR002
8	8	Jane Anderson	7777777777	jander@example.com	Evening	2023-04-01	BR002
9	9	Jane Valeria	8888888888	jvaler@example.com	Night	2023-02-01	BR002
10	10	Mike Brown	9999999999	mbrown@example.com	Morning	2022-03-01	BR003
11	11	Mike Grey	2345678901	mgrey@example.com	Morning	2020-03-01	BR003
12	12	Mike White	3456789012	mwhite@example.com	Evening	2023-02-01	BR003
13	13	Mike Yellow	4567890123	myellow@example.com	Evening	2023-04-01	BR003
14	14	Mike Anderson	5678901234	mander@example.com	Evening	2023-03-01	BR003
15	15	Mike Williams	6789012345	mwill@example.com	Night	2023-01-01	BR003
16	16	Mike James	7890123456	mj@example.com	Night	2023-03-02	BR003
17	17	Sara White	8901234567	swhite@example.com	Morning	2023-04-02	BR004
18	18	Sara Brown	9012345678	sbrown@example.com	Evening	2023-04-01	BR004
19	19	Alex Green	1111122222	agreen@example.com	Morning	2023-05-01	BR005
20	20	Alex Blue	2222233333	ablue@example.com	Evening	2023-04-01	BR005

During update:

The screenshot shows a web-based application for managing employees. On the left, there's a sidebar with a navigation icon and a main area titled "Manage Employees". Below this, there are three entries for employees: John Doe, John Dowell, and John Dupont. Each entry includes basic information like ID, phone number, and email, along with a "Update details" button.

A modal dialog is open over the "John Doe" entry. The dialog has a title "Update Employee Details" and contains fields for "Full Name" (set to "John Doe"), "Email" (set to "jdoe@gmail.com"), "Telephone" (set to "1234567890"), "Branch ID" (set to "BR002"), "Shift" (set to "5-8"), and "Start Date" (set to "07/04/2024"). At the bottom of the dialog is a blue "Submit" button.

After Update:

# University of British Columbia, Vancouver

## Department of Computer Science

Staff:

	EmployeeID	FullName	Telephone	Email	Shift	StartDate	BranchID
1	1	John Doe	1234567890	jdoe@gmail.com	5-8	2024-04-07	BR002
2	2	John Dowell	1111111111	jdow@example.com	Morning	2023-01-02	BR001
3	3	John Dupont	2222222222	jdop@example.com	Evening	2022-01-01	BR001
4	4	John Do	3333333333	jdo@example.com	Evening	2021-03-01	BR001
5	5	John Do Not	4444444444	jdon@example.com	Night	2023-01-01	BR001
6	6	Jane Smith	5555555555	jsmith@example.com	Morning	2023-02-01	BR002
7	7	Jane Williams	6666666666	jwill@example.com	Morning	2023-02-02	BR002
8	8	Jane Anderson	7777777777	jander@example.com	Evening	2023-04-01	BR002
9	9	Jane Valeria	8888888888	jvaler@example.com	Night	2023-02-01	BR002
10	10	Mike Brown	9999999999	mbrown@example.com	Morning	2022-03-01	BR003
11	11	Mike Grey	2345678901	mgrey@example.com	Morning	2020-03-01	BR003
12	12	Mike White	3456789012	mwhite@example.com	Evening	2023-02-01	BR003
13	13	Mike Yellow	4567890123	myellow@example.com	Evening	2023-04-01	BR003
14	14	Mike Anderson	5678901234	mander@example.com	Evening	2023-03-01	BR003
15	15	Mike Williams	6789012345	mwill@example.com	Night	2023-01-01	BR003
16	16	Mike James	7890123456	mj@example.com	Night	2023-03-02	BR003
17	17	Sara White	8901234567	swhite@example.com	Morning	2023-04-02	BR004
18	18	Sara Brown	9012345678	sbrown@example.com	Evening	2023-04-01	BR004
19	19	Alex Green	1111122222	agreen@example.com	Morning	2023-05-01	BR005
20	20	Alex Blue	2222233333	ablu@example.com	Evening	2023-04-01	BR005

### 4) Delete Cascade

Tables before deletion

#### 1) Staff:

	EmployeeID	FullName	Telephone	Email	Shift	StartDate	BranchID
1	1	John Doe	1234567890	jdoe@gmail.com	5-8	2024-04-07	BR002
2	2	John Dowell	1111111111	jdow@example.com	Morning	2023-01-02	BR001
3	3	John Dupont	2222222222	jdop@example.com	Evening	2022-01-01	BR001
4	4	John Do	3333333333	jdo@example.com	Evening	2021-03-01	BR001
5	5	John Do Not	4444444444	jdon@example.com	Night	2023-01-01	BR001
6	6	Jane Smith	5555555555	jsmith@example.com	Morning	2023-02-01	BR002
7	7	Jane Williams	6666666666	jwill@example.com	Morning	2023-02-02	BR002
8	8	Jane Anderson	7777777777	jander@example.com	Evening	2023-04-01	BR002
9	9	Jane Valeria	8888888888	jvaler@example.com	Night	2023-02-01	BR002
10	10	Mike Brown	9999999999	mbrown@example.com	Morning	2022-03-01	BR003
11	11	Mike Grey	2345678901	mgrey@example.com	Morning	2020-03-01	BR003
12	12	Mike White	3456789012	mwhite@example.com	Evening	2023-02-01	BR003
13	13	Mike Yellow	4567890123	myellow@example.com	Evening	2023-04-01	BR003
14	14	Mike Anderson	5678901234	mander@example.com	Evening	2023-03-01	BR003
15	15	Mike Williams	6789012345	mwill@example.com	Night	2023-01-01	BR003
16	16	Mike James	7890123456	mj@example.com	Night	2023-03-02	BR003
17	17	Sara White	8901234567	swhite@example.com	Morning	2023-04-02	BR004
18	18	Sara Brown	9012345678	sbrown@example.com	Evening	2023-04-01	BR004
19	19	Alex Green	1111122222	agreen@example.com	Morning	2023-05-01	BR005
20	20	Alex Blue	2222233333	ablu@example.com	Evening	2023-04-01	BR005

#### 2) BranchClient:

# University of British Columbia, Vancouver

## Department of Computer Science

	ABC BranchID	ABC ClientName	ABC ClientType
1	BR001	Pantai Indah Kapuk	C FullName: varchar(255)
2	BR002	Podomoro Land	
3	BR003	Carveira Heights	B
4	BR004	TD Tower	A
5	BR005	Metropolis at Metrotown	A

3) Tower:

	ABC TowerID	ABC Address	ABC Zip	123 TowerTotalSlots	ABC BranchID
1	100	123 Main St	A1B2C3	61	↗ BR001
2	101	124 Main St	A1B2C3	100	↗ BR001
3	102	125 Main St	A1B2C3	60	↗ BR001
4	200	456 Oak Rd	D4E5F6	66	↗ BR002
5	201	457 Oak Rd	D4E5F6	130	↗ BR002
6	202	458 Oak Rd	D4E5F6	65	↗ BR002
7	300	456 Oak Rd	G7H8I9	38	↗ BR003
8	301	459 Oak Rd	G7H8I9	90	↗ BR003
9	302	460 Oak Rd	G7H8I9	70	↗ BR003
10	400	101 River Ln	J1K2L3	55	↗ BR004
11	401	103 River Ln	J1K2L3	170	↗ BR004
12	402	105 River Ln	J1K2L3	25	↗ BR004
13	500	202 Lake St	M4N5O6	48	↗ BR005
14	501	204 Lake St	M4N5O6	65	↗ BR005
15	502	205 Lake St	M4N5O6	100	↗ BR005

4) ParkingZone:

# University of British Columbia, Vancouver

## Department of Computer Science

	<a href="#">123</a> ParkingZoneID	<a href="#">123</a> ParkingZoneType	<a href="#">123</a> ZoneTotalSlots	<a href="#">ABC</a> TowerID
1	15	1	30	<a href="#">100</a>
2	18	1	32	<a href="#">400</a>
3	25	2	21	<a href="#">500</a>
4	27	1	25	<a href="#">200</a>
5	29	1	23	<a href="#">400</a>
6	32	2	21	<a href="#">300</a>
7	43	3	17	<a href="#">300</a>
8	45	3	27	<a href="#">500</a>
9	51	4	41	<a href="#">200</a>
10	58	4	31	<a href="#">100</a>
11	70	3	30	<a href="#">102</a>
12	71	4	30	<a href="#">102</a>
13	72	2	25	<a href="#">202</a>
14	73	4	40	<a href="#">202</a>
15	74	2	20	<a href="#">302</a>
16	75	3	20	<a href="#">302</a>
17	76	2	30	<a href="#">302</a>
18	77	2	25	<a href="#">402</a>
19	78	2	20	<a href="#">502</a>
20	79	2	25	<a href="#">502</a>
21	80	3	55	<a href="#">502</a>
22	100	3	30	<a href="#">101</a>
23	101	4	40	<a href="#">101</a>
24	102	2	30	<a href="#">101</a>
25	103	4	45	<a href="#">201</a>
26	104	1	85	<a href="#">201</a>
27	105	3	45	<a href="#">301</a>
28	106	3	45	<a href="#">301</a>
29	107	4	55	<a href="#">401</a>
30	108	1	55	<a href="#">401</a>
31	109	2	60	<a href="#">401</a>
32	110	3	65	<a href="#">501</a>

5) ParkingSlot:

# University of British Columbia, Vancouver

## Department of Computer Science

	ParkingSlotID	ParkingZoneID
1	SLOT01	15 ↗
2	SLOT02	15 ↗
3	SLOT03	15 ↗
4	SLOT04	15 ↗
5	SLOT05	15 ↗
6	SLOT06	15 ↗
7	SLOT07	15 ↗
8	SLOT08	15 ↗
9	SLOT09	15 ↗
10	SLOT10	15 ↗
11	SLOT11	15 ↗
12	SLOT12	15 ↗
13	SLOT13	15 ↗
14	SLOT14	15 ↗
15	SLOT15	15 ↗
16	SLOT16	15 ↗
17	SLOT17	15 ↗
18	SLOT18	15 ↗
19	SLOT19	15 ↗
20	SLOT20	15 ↗
21	SLOT21	15 ↗
22	SLOT22	15 ↗
23	SLOT23	15 ↗
24	SLOT24	15 ↗
25	SLOT25	15 ↗
26	SLOT26	15 ↗
27	SLOT27	15 ↗
28	SLOT28	15 ↗
29	SLOT29	15 ↗
30	SLOT30	15 ↗
31	SLOT01	18 ↗
32	SLOT02	18 ↗
33	SLOT03	18 ↗
34	SLOT04	18 ↗
35	SLOT05	18 ↗
36	SLOT06	18 ↗
37	SLOT07	18 ↗
38	SLOT08	18 ↗
39	SLOT09	18 ↗
40	SLOT10	18 ↗
41	SLOT11	18 ↗
42	SLOT12	18 ↗
43	SLOT13	18 ↗

# University of British Columbia, Vancouver

## Department of Computer Science

	ParkingSlotID	ParkingZoneID
44	SLOT14	18 ↗
45	SLOT15	18 ↗
46	SLOT16	18 ↗
47	SLOT17	18 ↗
48	SLOT18	18 ↗
49	SLOT19	18 ↗
50	SLOT20	18 ↗
51	SLOT21	18 ↗
52	SLOT22	18 ↗
53	SLOT23	18 ↗
54	SLOT24	18 ↗
55	SLOT25	18 ↗
56	SLOT26	18 ↗
57	SLOT27	18 ↗
58	SLOT28	18 ↗
59	SLOT29	18 ↗
60	SLOT30	18 ↗
61	SLOT31	18 ↗
62	SLOT32	18 ↗
63	SLOT01	25 ↗
64	SLOT02	25 ↗
65	SLOT03	25 ↗
66	SLOT04	25 ↗
67	SLOT05	25 ↗
68	SLOT06	25 ↗
69	SLOT07	25 ↗
70	SLOT08	25 ↗
71	SLOT09	25 ↗
72	SLOT10	25 ↗
73	SLOT11	25 ↗
74	SLOT12	25 ↗
75	SLOT13	25 ↗
76	SLOT14	25 ↗
77	SLOT15	25 ↗
78	SLOT16	25 ↗
79	SLOT17	25 ↗
80	SLOT18	25 ↗
81	SLOT19	25 ↗
82	SLOT20	25 ↗
83	SLOT21	25 ↗
84	SLOT01	27 ↗
85	SLOT02	27 ↗
86	SLOT03	27 ↗

# University of British Columbia, Vancouver

## Department of Computer Science

	ParkingSlotID	ParkingZoneID
87	SLOT04	27 
88	SLOT05	27 
89	SLOT06	27 
90	SLOT07	27 
91	SLOT08	27 
92	SLOT09	27 
93	SLOT10	27 
94	SLOT11	27 
95	SLOT12	27 
96	SLOT13	27 
97	SLOT14	27 
98	SLOT15	27 
99	SLOT16	27 
100	SLOT17	27 
101	SLOT18	27 
102	SLOT19	27 
103	SLOT20	27 
104	SLOT21	27 
105	SLOT22	27 
106	SLOT23	27 
107	SLOT24	27 
108	SLOT25	27 
109	SLOT01	29 
110	SLOT02	29 
111	SLOT03	29 
112	SLOT04	29 
113	SLOT05	29 
114	SLOT06	29 
115	SLOT07	29 
116	SLOT08	29 
117	SLOT09	29 
118	SLOT10	29 
119	SLOT11	29 
120	SLOT12	29 
121	SLOT13	29 
122	SLOT14	29 
123	SLOT15	29 
124	SLOT16	29 
125	SLOT17	29 
126	SLOT18	29 
127	SLOT19	29 
128	SLOT20	29 
129	SLOT21	29 

# University of British Columbia, Vancouver

## Department of Computer Science

We have 1143 parking slots and taking screenshots of this would make the document extremely long, so we have added a few from the start and the last one so you can see the reduction in parking slots available.

	ParkingSlotID	ParkingZoneID
1102	SLOT24	110 ↗
1103	SLOT25	110 ↗
1104	SLOT26	110 ↗
1105	SLOT27	110 ↗
1106	SLOT28	110 ↗
1107	SLOT29	110 ↗
1108	SLOT30	110 ↗
1109	SLOT31	110 ↗
1110	SLOT32	110 ↗
1111	SLOT33	110 ↗
1112	SLOT34	110 ↗
1113	SLOT35	110 ↗
1114	SLOT36	110 ↗
1115	SLOT37	110 ↗
1116	SLOT38	110 ↗
1117	SLOT39	110 ↗
1118	SLOT40	110 ↗
1119	SLOT41	110 ↗
1120	SLOT42	110 ↗
1121	SLOT43	110 ↗
1122	SLOT44	110 ↗
1123	SLOT45	110 ↗
1124	SLOT46	110 ↗
1125	SLOT47	110 ↗
1126	SLOT48	110 ↗
1127	SLOT49	110 ↗
1128	SLOT50	110 ↗
1129	SLOT51	110 ↗
1130	SLOT52	110 ↗
1131	SLOT53	110 ↗
1132	SLOT54	110 ↗
1133	SLOT55	110 ↗
1134	SLOT56	110 ↗
1135	SLOT57	110 ↗
1136	SLOT58	110 ↗
1137	SLOT59	110 ↗
1138	SLOT60	110 ↗
1139	SLOT61	110 ↗
1140	SLOT62	110 ↗
1141	SLOT63	110 ↗
1142	SLOT64	110 ↗
1143	SLOT65	110 ↗

# University of British Columbia, Vancouver

## Department of Computer Science

6) Occupy:

	ParkingSlotID	ParkingZoneID	PlateNumber
1	SLOT01	100	PLATE4321
2	SLOT02	100	PLATE5432
3	SLOT03	100	PLATE6543
4	SLOT04	100	PLATE7654
5	SLOT05	100	PLATE8765
6	SLOT06	100	PLATE9876
7	SLOT07	100	PLATE0987
8	SLOT08	101	PLATE2435
9	SLOT09	101	PLATE3645
10	SLOT10	101	PLATE7457
11	SLOT11	101	PLATE1199
12	SLOT12	101	PLATE2288
13	SLOT13	101	PLATE3377
14	SLOT14	101	PLATE4466
15	SLOT15	101	PLATE6644
16	SLOT16	101	PLATE7733
17	SLOT11	102	PLATE2828
18	SLOT12	102	PLATE0522
19	SLOT13	102	PLATE0622
20	SLOT14	102	PLATE0722
21	SLOT15	102	PLATE0822
22	SLOT16	102	PLATE0922
23	SLOT17	102	PLATE8822
24	SLOT18	102	PLATE9911
25	SLOT19	102	PLATE1919

**University of British Columbia, Vancouver**

Department of Computer Science

7) Enters:

# University of British Columbia, Vancouver

Department of Computer Science

	DateTime	EntryGateID	PlateNumber
1	2023-01-01 08:00:00	1	PLATE1234
2	2023-01-01 08:30:00	1	PLATE0511
3	2023-01-02 08:42:00	1	PLATE0611
4	2023-01-02 09:00:00	1	PLATE2345
5	2023-01-05 09:02:00	1	PLATE2435
6	2023-01-06 08:40:20	1	PLATE0500
7	2023-01-01 08:03:47	2	PLATE0922
8	2023-01-03 08:53:00	2	PLATE0711
9	2023-01-03 10:00:00	2	PLATE3456
10	2023-01-04 09:03:00	2	PLATE3645
11	2023-01-04 09:04:00	2	PLATE7457
12	2023-01-06 08:00:10	2	PLATE0600
13	2023-01-01 08:02:33	3	PLATE0822
14	2023-01-04 10:00:00	3	PLATE4567
15	2023-01-06 08:20:30	3	PLATE0700
16	2024-04-06 01:25:29	3	PLATE1556
17	2024-04-06 01:26:23	3	PLATE1557
18	2024-04-06 02:18:41	3	PLATE1445
19	2023-01-05 10:00:00	4	PLATE5678
20	2023-01-06 08:00:40	4	PLATE0800
21	2023-01-01 08:01:00	5	PLATE4321
22	2023-01-04 08:49:00	5	PLATE0811
23	2023-01-05 08:05:00	5	PLATE8765
24	2023-01-06 08:01:51	5	PLATE0900
25	2023-01-06 08:17:00	5	PLATE0722
26	2023-01-01 08:02:00	6	PLATE5432
27	2023-01-05 08:02:00	6	PLATE0911
28	2023-01-01 08:03:00	7	PLATE6543
29	2023-01-01 08:04:00	7	PLATE7654
30	2023-01-05 08:03:00	7	PLATE0522
31	2023-01-06 08:13:00	8	PLATE0622

# **University of British Columbia, Vancouver**

## **Department of Computer Science**

31	2023-01-06 08:13:00	8			PLATE0622
32	2023-01-01 07:07:00	9			PLATE9911
33	2023-01-05 08:06:00	9			PLATE9876
34	2023-01-01 07:08:00	10			PLATE1919
35	2023-01-03 07:06:00	10			PLATE8822
36	2023-01-05 09:01:00	10			PLATE0987
37	2023-01-01 07:09:00	11			PLATE2828
38	2023-01-02 11:01:00	11			PLATE6789
39	2023-01-02 11:02:00	11			PLATE7890
40	2023-01-02 11:03:00	11			PLATE8901
41	2023-01-02 11:04:00	11			PLATE9012
42	2023-01-02 11:05:00	11			PLATE0123
43	2023-01-03 07:05:00	11			PLATE7733
44	2023-01-02 07:00:00	13			PLATE1199
45	2023-01-02 07:02:00	13			PLATE3377
46	2023-01-03 07:04:00	13			PLATE6644
47	2023-01-02 07:01:00	15			PLATE2288
48	2023-01-02 07:03:00	15			PLATE4466

8) EntryGate:

# University of British Columbia, Vancouver

Department of Computer Science

	123 EntryGateID	123 StatusIsActive
1	1	1
2	2	1
3	3	1
4	4	1
5	5	1
6	6	1
7	7	1
8	8	0
9	9	1
10	10	1
11	11	1
12	12	0
13	13	1
14	14	0
15	15	1

9) Payment:

# University of British Columbia, Vancouver

## Department of Computer Science

	PaymentID	Method	Amount	PlateNumber	ExitGateID
1	0fb1d6e1-f3c1-11ee-8326-06c6302fb28f	Credit Card	3.0265	PLATE1445	1 ↗
2	92f8c54d-f3b9-11ee-8326-06c6302fb28f	Debit Card	5.836	PLATE1557	1 ↗
3	a7d0443a-f39b-11ee-8326-06c6302fb28f	Credit Card	50	PLATE1234	1 ↗
4	a7df0f4a-f39b-11ee-8326-06c6302fb28f	Credit Card	50	PLATE2345	2 ↗
5	a7eb56d4-f39b-11ee-8326-06c6302fb28f	Cash	50	PLATE3456	3 ↗
6	a805c79b-f39b-11ee-8326-06c6302fb28f	Cash	55	PLATE4567	4 ↗
7	a8142060-f39b-11ee-8326-06c6302fb28f	Cash	60	PLATE5678	5 ↗
8	a82c2c23-f39b-11ee-8326-06c6302fb28f	Cash	6	PLATE0500	1 ↗
9	a83a1e31-f39b-11ee-8326-06c6302fb28f	Cash	24	PLATE0600	2 ↗
10	a8552fca-f39b-11ee-8326-06c6302fb28f	Cash	24	PLATE0700	1 ↗
11	a861bad9-f39b-11ee-8326-06c6302fb28f	Credit Card	4	PLATE0800	2 ↗
12	a86e5b4a-f39b-11ee-8326-06c6302fb28f	Credit Card	2	PLATE0900	1 ↗
13	a87df71b-f39b-11ee-8326-06c6302fb28f	Debit Card	22	PLATE0511	2 ↗
14	a88a2075-f39b-11ee-8326-06c6302fb28f	Debit Card	1	PLATE0611	1 ↗
15	a8a9b156-f39b-11ee-8326-06c6302fb28f	Debit Card	28	PLATE0711	2 ↗
16	a8b6a977-f39b-11ee-8326-06c6302fb28f	Debit Card	28	PLATE0811	1 ↗
17	a8c3869e-f39b-11ee-8326-06c6302fb28f	Debit Card	8	PLATE0911	2 ↗
18	a8d65834-f39b-11ee-8326-06c6302fb28f	Debit Card	20	PLATE6789	1 ↗
19	a8f9eca2-f39b-11ee-8326-06c6302fb28f	Debit Card	30	PLATE7890	2 ↗
20	a90acdbf-f39b-11ee-8326-06c6302fb28f	Debit Card	40	PLATE8901	1 ↗
21	a91dbaf5-f39b-11ee-8326-06c6302fb28f	Cash	50	PLATE9012	2 ↗
22	a94ea645-f39b-11ee-8326-06c6302fb28f	Cash	60	PLATE0123	1 ↗
23	dd7cb794-f3b4-11ee-8326-06c6302fb28f	Cash	0.1845	PLATE1556	2 ↗

10) ExitGate:

# University of British Columbia, Vancouver

Department of Computer Science

	ExitGateID	StatusIsActive
1	1	1
2	2	1
3	3	1
4	4	1
5	5	1
6	6	1
7	7	0
8	8	1
9	9	1
10	10	1
11	11	1
12	12	0
13	13	0
14	14	0
15	15	1

11) Exits:

# University of British Columbia, Vancouver

## Department of Computer Science

	⌚ DateTime	123 ExitGateID	ABC PlateNumber	123 ParkingZoneID	ABC ParkingSlotID
1	2023-01-01 18:00:00	1 ↕	PLATE1234	51 ↕	SLOT10
2	2023-01-01 19:30:00	2 ↕	PLATE0511	18 ↕	SLOT05
3	2023-01-02 09:42:00	2 ↕	PLATE0611	18 ↕	SLOT01
4	2023-01-02 13:01:00	2 ↕	PLATE6789	51 ↕	SLOT07
5	2023-01-02 14:02:00	5 ↕	PLATE7890	45 ↕	SLOT02
6	2023-01-02 15:03:00	1 ↕	PLATE8901	32 ↕	SLOT10
7	2023-01-02 16:04:00	4 ↕	PLATE9012	29 ↕	SLOT03
8	2023-01-02 17:05:00	4 ↕	PLATE0123	29 ↕	SLOT09
9	2023-01-02 19:00:00	2 ↕	PLATE2345	27 ↕	SLOT11
10	2023-01-03 20:00:00	3 ↕	PLATE3456	25 ↕	SLOT12
11	2023-01-03 22:53:00	5 ↕	PLATE0711	18 ↕	SLOT01
12	2023-01-04 21:00:00	4 ↕	PLATE4567	29 ↕	SLOT13
13	2023-01-04 22:49:00	5 ↕	PLATE0811	15 ↕	SLOT02
14	2023-01-05 12:02:00	5 ↕	PLATE0911	15 ↕	SLOT15
15	2023-01-05 22:00:00	5 ↕	PLATE5678	45 ↕	SLOT14
16	2023-01-06 09:01:51	5 ↕	PLATE0900	25 ↕	SLOT11
17	2023-01-06 10:00:40	3 ↕	PLATE0800	27 ↕	SLOT08
18	2023-01-06 11:40:20	4 ↕	PLATE0500	29 ↕	SLOT04
19	2023-01-06 20:00:10	3 ↕	PLATE0600	27 ↕	SLOT04
20	2023-01-06 20:20:30	3 ↕	PLATE0700	27 ↕	SLOT08
21	2024-04-06 01:27:42	2 ↕	PLATE1556	25 ↕	SLOT01
22	2024-04-06 02:01:24	1 ↕	PLATE1557	25 ↕	SLOT02
23	2024-04-06 02:55:00	1 ↕	PLATE1445	27 ↕	SLOT01

12) VehicleClass:

# University of British Columbia, Vancouver

## Department of Computer Science

	PlateNumber	WeightClass
1	PLATE0123	B
2	PLATE0500	C
3	PLATE0511	C
4	PLATE0522	C
5	PLATE0600	C
6	PLATE0611	C
7	PLATE0622	C
8	PLATE0700	C
9	PLATE0711	C
10	PLATE0722	C
11	PLATE0800	C
12	PLATE0811	C
13	PLATE0822	C
14	PLATE0900	C
15	PLATE0911	C
16	PLATE0922	C
17	PLATE0987	A
18	PLATE1199	B
19	PLATE1234	A
20	PLATE1445	A
21	PLATE1556	A
22	PLATE1557	B
23	PLATE1919	B
24	PLATE2288	B
25	PLATE2345	A
26	PLATE2435	A
27	PLATE2828	B
28	PLATE3377	B
29	PLATE3456	A
30	PLATE3645	A
31	PLATE4321	A

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32	PLATE4466	B
33	PLATE4567	A
34	PLATE5432	A
35	PLATE5678	A
36	PLATE6543	A
37	PLATE6644	B
38	PLATE6789	B
39	PLATE7457	A
40	PLATE7654	A
41	PLATE7733	B
42	PLATE7890	B
43	PLATE8765	A
44	PLATE8822	B
45	PLATE8901	B
46	PLATE9012	B
47	PLATE9876	A
48	PLATE9911	B

13) HeavyDuty:

# University of British Columbia, Vancouver

Department of Computer Science

	PlateNumber	CompanyName
1	PLATE0123	Vladivostok Blue
2	PLATE1199	[NULL]
3	PLATE1557	None
4	PLATE1919	Atlantic Snow
5	PLATE2288	[NULL]
6	PLATE2828	Vladivostok Blue
7	PLATE3377	Selandia Baru
8	PLATE4466	[NULL]
9	PLATE6644	Bajak Laut
10	PLATE6789	Maersk Cargo
11	PLATE7733	Yang Ming
12	PLATE7890	Yang Ming
13	PLATE8822	Maersk Cargo
14	PLATE8901	Atlantic Snow
15	PLATE9012	Pacific Beast
16	PLATE9911	Ming Yang

14) Maintenance:

# University of British Columbia, Vancouver

Department of Computer Science

	ABC PlateNumber	ABC WorkOrderID
1	PLATE0500	WO1234
2	PLATE0511	WO4321
3	PLATE0522	WO9786
4	PLATE0600	WO2345
5	PLATE0611	WO5432
6	PLATE0622	WO0978
7	PLATE0700	WO3456
8	PLATE0711	WO6543
9	PLATE0722	WO0123
10	PLATE0800	WO4567
11	PLATE0811	WO7654
12	PLATE0822	WO1324
13	PLATE0900	WO5678
14	PLATE0911	WO8756
15	PLATE0922	WO2435

15) PrivateCar:

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	ABC PlateNumber	ABC Membership
1	PLATE0987	a1238b
2	PLATE1234	p6725f
3	PLATE1445	None
4	PLATE1556	None
5	PLATE2345	t9123a
6	PLATE2435	j1923h
7	PLATE3456	r1231b
8	PLATE3645	n9212p
9	PLATE4321	[NULL]
10	PLATE4567	m1023i
11	PLATE5432	[NULL]
12	PLATE5678	q1029y
13	PLATE6543	[NULL]
14	PLATE7457	k1920r
15	PLATE7654	[NULL]
16	PLATE8765	[NULL]
17	PLATE9876	x1273a

During:

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After:

1) Staff:

	123 EmployeeID	ABC FullName	ABC Telephone	ABC Email	ABC Shift	⌚ StartDate	ABC BranchID
1	1	John Doe	1234567890	jdoe@gmail.com	5-8	2024-04-07	BR002
2	6	Jane Smith	5555555555	jsmith@example.com	Morning	2023-02-01	BR002
3	7	Jane Williams	6666666666	jwill@example.com	Morning	2023-02-02	BR002
4	8	Jane Anderson	7777777777	jander@example.com	Evening	2023-04-01	BR002
5	9	Jane Valeria	8888888888	jvalera@example.com	Night	2023-02-01	BR002
6	10	Mike Brown	9999999999	mbrown@example.com	Morning	2022-03-01	BR003
7	11	Mike Grey	2345678901	mgrey@example.com	Morning	2020-03-01	BR003
8	12	Mike White	3456789012	mwhite@example.com	Evening	2023-02-01	BR003
9	13	Mike Yellow	4567890123	myellow@example.com	Evening	2023-04-01	BR003
10	14	Mike Anderson	5678901234	mander@example.com	Evening	2023-03-01	BR003
11	15	Mike Williams	6789012345	mwill@example.com	Night	2023-01-01	BR003
12	16	Mike James	7890123456	mj@example.com	Night	2023-03-02	BR003
13	17	Sara White	8901234567	swhite@example.com	Morning	2023-04-02	BR004
14	18	Sara Brown	9012345678	sbrown@example.com	Evening	2023-04-01	BR004
15	19	Alex Green	1111222222	agreen@example.com	Morning	2023-05-01	BR005
16	20	Alex Blue	2222233333	ablu@example.com	Evening	2023-04-01	BR005

2) BranchClient:

	ABC BranchID	ABC ClientName	ABC ClientType
1	BR002	Podomoro Land	C
2	BR003	Carveira Heights	B
3	BR004	TD Tower	A
4	BR005	Metropolis at Metrotown	A

3) Tower:

	ABC TowerID	ABC Address	ABC Zip	123 TowerTotalSlots	ABC BranchID
1	200	456 Oak Rd	D4E5F6	66	BR002
2	201	457 Oak Rd	D4E5F6	130	BR002
3	202	458 Oak Rd	D4E5F6	65	BR002
4	300	456 Oak Rd	G7H8I9	38	BR003
5	301	459 Oak Rd	G7H8I9	90	BR003
6	302	460 Oak Rd	G7H8I9	70	BR003
7	400	101 River Ln	J1K2L3	55	BR004
8	401	103 River Ln	J1K2L3	170	BR004
9	402	105 River Ln	J1K2L3	25	BR004
10	500	202 Lake St	M4N5O6	48	BR005
11	501	204 Lake St	M4N5O6	65	BR005
12	502	205 Lake St	M4N5O6	100	BR005

4) ParkingZone:

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	123 ParkingZoneID	123 ParkingZoneType	123 ZoneTotalSlots	ABC TowerID
1	18		1	32 ↗ 400
2	25		2	21 ↗ 500
3	27		1	25 ↗ 200
4	29		1	23 ↗ 400
5	32		2	21 ↗ 300
6	43		3	17 ↗ 300
7	45		3	27 ↗ 500
8	51		4	41 ↗ 200
9	72		2	25 ↗ 202
10	73		4	40 ↗ 202
11	74		2	20 ↗ 302
12	75		3	20 ↗ 302
13	76		2	30 ↗ 302
14	77		2	25 ↗ 402
15	78		2	20 ↗ 502
16	79		2	25 ↗ 502
17	80		3	55 ↗ 502
18	103		4	45 ↗ 201
19	104		1	85 ↗ 201
20	105		3	45 ↗ 301
21	106		3	45 ↗ 301
22	107		4	55 ↗ 401
23	108		1	55 ↗ 401
24	109		2	60 ↗ 401
25	110		3	65 ↗ 501

5) ParkingSlot:

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	ParkingSlotID	ParkingZoneID
1	SLOT01	18 
2	SLOT02	18 
3	SLOT03	18 
4	SLOT04	18 
5	SLOT05	18 
6	SLOT06	18 
7	SLOT07	18 
8	SLOT08	18 
9	SLOT09	18 
10	SLOT10	18 
11	SLOT11	18 
12	SLOT12	18 
13	SLOT13	18 
14	SLOT14	18 
15	SLOT15	18 
16	SLOT16	18 
17	SLOT17	18 
18	SLOT18	18 
19	SLOT19	18 
20	SLOT20	18 
21	SLOT21	18 
22	SLOT22	18 
23	SLOT23	18 
24	SLOT24	18 
25	SLOT25	18 
26	SLOT26	18 
27	SLOT27	18 
28	SLOT28	18 
29	SLOT29	18 
30	SLOT30	18
31	SLOT31	18

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	ParkingSlotID	ParkingZoneID
893	SLOT36	110 
894	SLOT37	110 
895	SLOT38	110 
896	SLOT39	110 
897	SLOT40	110 
898	SLOT41	110 
899	SLOT42	110 
900	SLOT43	110 
901	SLOT44	110 
902	SLOT45	110 
903	SLOT46	110 
904	SLOT47	110 
905	SLOT48	110 
906	SLOT49	110 
907	SLOT50	110 
908	SLOT51	110 
909	SLOT52	110 
910	SLOT53	110 
911	SLOT54	110 
912	SLOT55	110 
913	SLOT56	110 
914	SLOT57	110 
915	SLOT58	110 
916	SLOT59	110 
917	SLOT60	110 
918	SLOT61	110 
919	SLOT62	110 
920	SLOT63	110 
921	SLOT64	110 
922	SLOT65	110 

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**For the above table again there are a lot of rows, we just showed the last few to indicate changes**

- 6) Occupy:

	ParkingSlotID	ParkingZoneID	PlateNumber
1	SLOT01	25	PLATE1113

README.txt:

We hosted our database on an AWS Cloud Server. We populated table instances via terminal connection. A utility file called `sql_login.sh` located in the Database folder was used to allow easier login. The database server was then connected with our Node.js backend.