Group 30
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MMTD Gyms

Track | Compare | Optimize

1.

```
CREATE OR REPLACE FUNCTION restockProducts(qty INT, foodType VARCHAR(20),
gymAddr VARCHAR(50), gymCity VARCHAR(20), gymProvince VARCHAR(20))
RETURNS integer AS $$
        DECLARE currentQty INT;
        DECLARE currentCost INT;
        DECLARE C1 CURSOR FOR
                select inserts, ((qty - inserts) * price) AS foodCost
                from stocks s
                join foodtype f on s.foodname = f.name
                WHERE s.streetaddr = gymAddr AND s.city = gymCity AND s.province =
gymProvince
                        AND s.foodname = foodType
        ;

BEGIN
        OPEN C1;
        FETCH C1 INTO currentQty, currentCost;
        IF currentQty < qty THEN
                UPDATE stocks s SET inserts = qty
                        WHERE s.streetaddr = gymAddr AND s.city = gymCity AND s.province f=
gymProvince
                                AND s.foodname = foodType
                ;
                UPDATE gym g SET BUDGET = BUDGET - currentCost
                        WHERE g.streetaddr = gymAddr AND g.city = gymCity AND g.province =
gymProvince
                ;
                return 1;
        ELSE
                return 2;
        END IF;
        CLOSE C1;
END; $$
```

LANGUAGE PLPGSQL;

Before:

	streetaddr character varying (200)	city character varying (200)	province character varying (200)	maxnumemployees integer	budget integer	foodname character varying (200)	inserts integer
1	76 Jana Junction	Coaticook	Québec	25	873446	Banana	200
2	0849 Surrey Alley	Val-d'Or	Québec	25	645345	Fiji Water	300
3	6 Melrose Way	Roblin	Manitoba	20	754919	Energy Drink	900

After:

	streetaddr character varying (200)	city character varying (200)	province character varying (200)	maxnumemployees integer	budget integer	foodname character varying (200)	inserts integer
1	0849 Surrey Alley	Val-d'Or	Québec	25	645345	Fiji Water	300
2	6 Melrose Way	Roblin	Manitoba	20	754919	Energy Drink	900
3	76 Jana Junction	Coaticook	Québec	25	871846	Banana	1000

2.

```
dbConn [Java Application] /Library/Java/JavaVirtualMachines/jdk-9.0.1.jdk/Contents/Home/bin/java (Apr 12, 2020, 1:38:18 PM)
Welcome to MMTD Gyms Database
        Track|Compare|Optimize

1: Check what classes a specific client is enrolled in.
2. Check if a specific food is in stock.
3. Enroll a client in a class (Inserting them into our DB)
4. Aggregate all food nutritional values for a specific client purchases and how much money they have spent.
5. Update the address of a specific client. Then show all clients in the database.
6. QUIT
Please pick one of the options:

1
Please enter the email of the client.

Email of client:
biggucci@gmail.com
Email: biggucci@gmail.com is enlisted in: Crossfit
Please pick one of the options:

2
Please input what food you would like to search for:
Banana
Food Banana has 928 units in stock.
Please pick one of the options:

3
Inserting a client into a database will require a e-mail, name, and the membership type.
Please enter the client's e-mail:
tudorG@gmail.com

Please enter the client's name: (case sensitive)
Tudor Gurau

Please enter the membership type (regular or premium)
premium
```

```
Please pick one of the options:

4
Please enter the e-mail of the client for which you want this information:
biggucci@gmail.com
Email: biggucci@gmail.com
Average Calories: 587
Calories Per Dollar: 6
Avg Fat:1485
Fat per Dollar: 17
Avg Protein: 1198
Protein Per Dollar :14
Avg Carbs: 1462
Carbs Per Dollar 17
Total Spent: 85
Please pick one of the options:

5
Updating the membership status of a client.

Please enter the client's email:
Tudor Gurau
Please enter the membership type (regular or premium)
regular

Please pick one of the options:

6
Thank you for using our datbase. Consider signing up for premium membership if you have not already.
```

3.

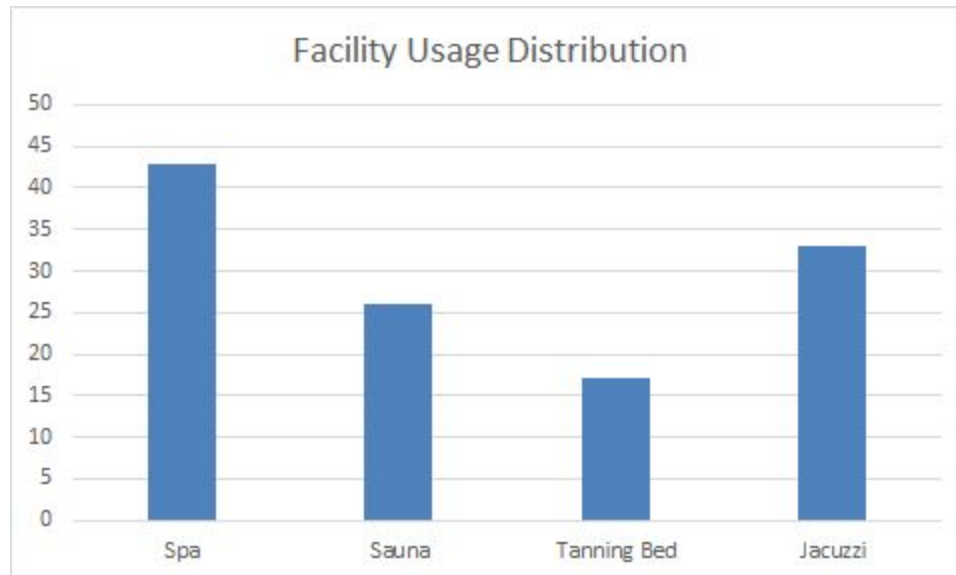CREATE Index stock ON FoodType(inStock);

This index allows us to search for food options that are low in stock quicker. Furthermore, it is also useful for performing our second user alternative (case 2).
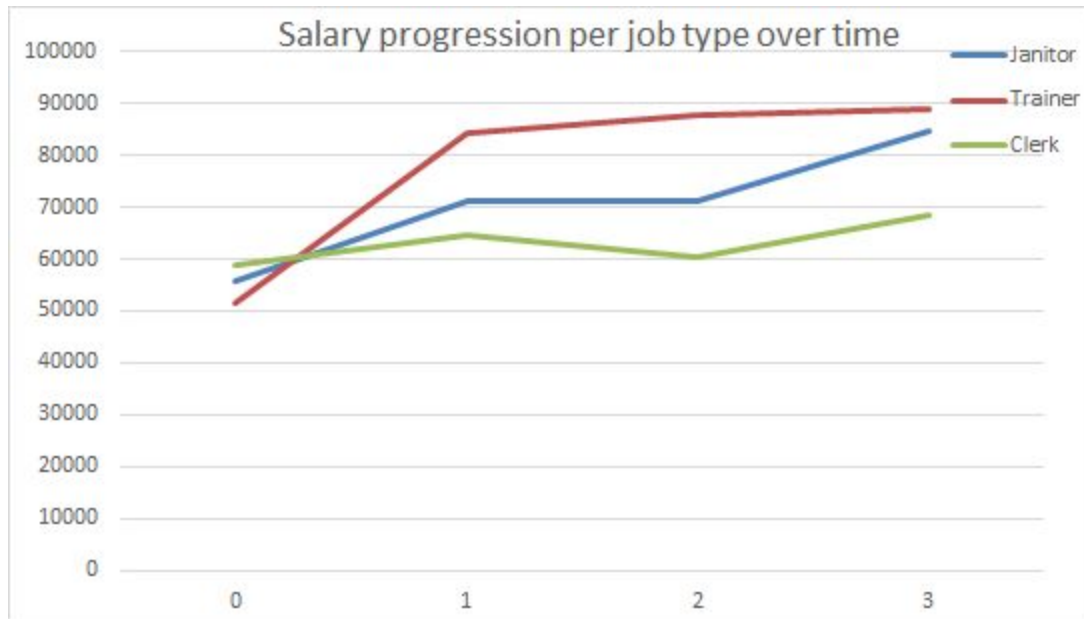
CREATE index salaryCheck ON Employee(salary);

This index allows us to query for employee salaries much faster, aiding our stored procedures checks as we give bonuses to our employees (example 5)

4.

Facility Usage Distribution

Facility type	Number of Clients
Spa	43
Sauna	26
Tanning Bed	17
Jacuzzi	33

Salary progression per job type over time

Job type	Hire year	Years of experience	Salary
Clerk	2020	0	58951
Clerk	2019	1	64705
Clerk	2018	2	60344
Clerk	2017	3	68341
Janitor	2020	0	55623
Janitor	2019	1	71354
Janitor	2018	2	71144
Janitor	2017	3	84857
Trainer	2020	0	51635

Trainer	2019	1	84492
Trainer	2018	2	87741
Trainer	2017	3	89017

5.

CREATE OR REPLACE FUNCTION giveBonusSalary(bonusPercent INT, employeeJob VARCHAR(20))
RETURNS integer AS $$
      DECLARE avgSal INT;
      DECLARE C1 CURSOR FOR
          SELECT AVG(salary) AS avgSalary FROM employee WHERE jobtitle = employeeJOB;
BEGIN
OPEN C1;
FETCH C1 INTO avgSal;
UPDATE employee SET salary = salary + (avgSal * bonusPercent/100) WHERE jobtitle = employeeJOB;
CLOSE C1;
return 1;
END; $$
LANGUAGE PLPGSQL;

```
                                    List of functions
 Schema  |      Name       | Result data type |                  Argument data types                 |   Type
---------+-----------------+------------------+------------------------------------------------------+--------
 cs421g30 | givebonussalary | integer          | bonuspercent integer, employeejob character varying | normal
(1 row)
```

```
[cs421=> SELECT * from employee;
 eid |         name         | salary | jobtitle |  hiredate  |    streetaddr     |   city    |  province
-----+----------------------+--------+----------+------------+-------------------+-----------+--------------
  13 | Isabel Emblen        |  73011 | Trainer  | 2017-12-06 | 0849 Surrey Alley | Val-d'Or  | Québec
  14 | Juliane Hanne        |  60942 | Trainer  | 2018-06-06 | 6 Melrose Way     | Roblin    | Manitoba
  16 | Crosby Bampkin       |  60391 | Trainer  | 2019-06-23 | 6 Melrose Way     | Roblin    | Manitoba
  17 | Lezley De Mattia     |  98629 | Trainer  | 2018-03-14 | 6 Melrose Way     | Roblin    | Manitoba
  21 | Zandra Penhale       |  48404 | Trainer  | 2019-01-27 | 6857 Basil Crossing | Virden  | Manitoba
  24 | Alfie Compton        |  40539 | Trainer  | 2020-02-05 | 6857 Basil Crossing | Virden  | Manitoba
  30 | Charlton Joye        |  56584 | Trainer  | 2017-04-22 | 5317 Cardinal Park | Weyburn  | Saskatchewan
  11 | Leisha Cant          | 110000 | Janitor  | 2020-02-08 | 0849 Surrey Alley | Val-d'Or  | Québec
  19 | Salomone Ashwood     | 110000 | Janitor  | 2017-12-09 | 6 Melrose Way     | Roblin    | Manitoba
  20 | Durante Chavrin      | 110000 | Janitor  | 2018-06-10 | 6857 Basil Crossing | Virden  | Manitoba
  25 | Stinky Antrim        | 110000 | Janitor  | 2019-11-26 | 6857 Basil Crossing | Virden  | Manitoba
  28 | Hobey Petofi         | 110000 | Janitor  | 2018-12-07 | 5317 Cardinal Park | Weyburn  | Saskatchewan
  29 | Gabriellia Dye       | 110000 | Janitor  | 2018-07-10 | 5317 Cardinal Park | Weyburn  | Saskatchewan
   5 | Devin Conelly        | 110000 | Janitor  | 2017-05-26 | 76 Jana Junction  | Coaticook | Québec
   9 | Ann-marie Murrison   |  64705 | Clerk    | 2019-10-19 | 0849 Surrey Alley | Val-d'Or  | Québec
  12 | Jens Hedaux          |  25946 | Clerk    | 2018-02-11 | 0849 Surrey Alley | Val-d'Or  | Québec
  22 | Ashla Titcom         |  51268 | Clerk    | 2017-01-28 | 6857 Basil Crossing | Virden  | Manitoba
  26 | Pebrook Moncarr      |  33940 | Clerk    | 2018-10-28 | 5317 Cardinal Park | Weyburn  | Saskatchewan
  15 | Vaclav Hercules      |  86118 | Clerk    | 2018-10-07 | 6 Melrose Way     | Roblin    | Manitoba
  23 | Hanna Norcliffe      |  85463 | Clerk    | 2018-09-24 | 6857 Basil Crossing | Virden  | Manitoba
   6 | Micki Albasini       |  70253 | Clerk    | 2018-12-14 | 76 Jana Junction  | Coaticook | Québec
   3 | Nadia Lambirth       |  61104 | Trainer  | 2017-09-04 | 76 Jana Junction  | Coaticook | Québec
   4 | Reece Joutapavicius  |  30768 | Trainer  | 2018-10-04 | 76 Jana Junction  | Coaticook | Québec
   7 | Rebe Beldum          |  66406 | Trainer  | 2018-02-10 | 76 Jana Junction  | Coaticook | Québec
  27 | Reagen Please        |  99014 | Trainer  | 2017-05-31 | 5317 Cardinal Park | Weyburn  | Saskatchewan
  18 | Petr Ife             |  99893 | Trainer  | 2017-05-15 | 6 Melrose Way     | Roblin    | Manitoba
   1 | Nani Mantram         |  99142 | Trainer  | 2018-06-21 | 76 Jana Junction  | Coaticook | Québec
   2 | Berny Zambon         |  98401 | Trainer  | 2019-06-13 | 76 Jana Junction  | Coaticook | Québec
  10 | Liuka Snazle         |  86387 | Trainer  | 2019-01-29 | 0849 Surrey Alley | Val-d'Or  | Québec
   8 | Big Baller           | 103984 | Trainer  | 2018-01-27 | 0849 Surrey Alley | Val-d'Or  | Québec
(30 rows)

cs421=> SELECT givebonussalary(15, 'Trainer');
 givebonussalary
-----------------
               1
(1 row)

cs421=> SELECT * from employee;
 eid |         name         | salary | jobtitle |  hiredate  |    streetaddr     |   city    |  province
-----+----------------------+--------+----------+------------+-------------------+-----------+--------------
  11 | Leisha Cant          | 110000 | Janitor  | 2020-02-08 | 0849 Surrey Alley | Val-d'Or  | Québec
  19 | Salomone Ashwood     | 110000 | Janitor  | 2017-12-09 | 6 Melrose Way     | Roblin    | Manitoba
  20 | Durante Chavrin      | 110000 | Janitor  | 2018-06-10 | 6857 Basil Crossing | Virden  | Manitoba
  25 | Stinky Antrim        | 110000 | Janitor  | 2019-11-26 | 6857 Basil Crossing | Virden  | Manitoba
  28 | Hobey Petofi         | 110000 | Janitor  | 2018-12-07 | 5317 Cardinal Park | Weyburn  | Saskatchewan
  29 | Gabriellia Dye       | 110000 | Janitor  | 2018-07-10 | 5317 Cardinal Park | Weyburn  | Saskatchewan
   5 | Devin Conelly        | 110000 | Janitor  | 2017-05-26 | 76 Jana Junction  | Coaticook | Québec
   9 | Ann-marie Murrison   |  64705 | Clerk    | 2019-10-19 | 0849 Surrey Alley | Val-d'Or  | Québec
  12 | Jens Hedaux          |  25946 | Clerk    | 2018-02-11 | 0849 Surrey Alley | Val-d'Or  | Québec
  22 | Ashla Titcom         |  51268 | Clerk    | 2017-01-28 | 6857 Basil Crossing | Virden  | Manitoba
  26 | Pebrook Moncarr      |  33940 | Clerk    | 2018-10-28 | 5317 Cardinal Park | Weyburn  | Saskatchewan
  15 | Vaclav Hercules      |  86118 | Clerk    | 2018-10-07 | 6 Melrose Way     | Roblin    | Manitoba
  23 | Hanna Norcliffe      |  85463 | Clerk    | 2018-09-24 | 6857 Basil Crossing | Virden  | Manitoba
   6 | Micki Albasini       |  70253 | Clerk    | 2018-12-14 | 76 Jana Junction  | Coaticook | Québec
  13 | Isabel Emblen        |  84107 | Trainer  | 2017-12-06 | 0849 Surrey Alley | Val-d'Or  | Québec
  14 | Juliane Hanne        |  72038 | Trainer  | 2018-06-06 | 6 Melrose Way     | Roblin    | Manitoba
  16 | Crosby Bampkin       |  71487 | Trainer  | 2019-06-23 | 6 Melrose Way     | Roblin    | Manitoba
  17 | Lezley De Mattia     | 109725 | Trainer  | 2018-03-14 | 6 Melrose Way     | Roblin    | Manitoba
  21 | Zandra Penhale       |  59500 | Trainer  | 2019-01-27 | 6857 Basil Crossing | Virden  | Manitoba
  24 | Alfie Compton        |  51635 | Trainer  | 2020-02-05 | 6857 Basil Crossing | Virden  | Manitoba
  30 | Charlton Joye        |  67680 | Trainer  | 2017-04-22 | 5317 Cardinal Park | Weyburn  | Saskatchewan
   3 | Nadia Lambirth       |  72200 | Trainer  | 2017-09-04 | 76 Jana Junction  | Coaticook | Québec
   4 | Reece Joutapavicius  |  41864 | Trainer  | 2018-10-04 | 76 Jana Junction  | Coaticook | Québec
   7 | Rebe Beldum          |  77502 | Trainer  | 2018-02-10 | 76 Jana Junction  | Coaticook | Québec
  27 | Reagen Please        | 110110 | Trainer  | 2017-05-31 | 5317 Cardinal Park | Weyburn  | Saskatchewan
  18 | Petr Ife             | 110989 | Trainer  | 2017-05-15 | 6 Melrose Way     | Roblin    | Manitoba
   1 | Nani Mantram         | 110238 | Trainer  | 2018-06-21 | 76 Jana Junction  | Coaticook | Québec
   2 | Berny Zambon         | 109497 | Trainer  | 2019-06-13 | 76 Jana Junction  | Coaticook | Québec
  10 | Liuka Snazle         |  97483 | Trainer  | 2019-01-29 | 0849 Surrey Alley | Val-d'Or  | Québec
   8 | Big Baller           | 115080 | Trainer  | 2018-01-27 | 0849 Surrey Alley | Val-d'Or  | Québec
(30 rows)
```

(Note the updated trainers salary.)