



Database Implementation for Ohmai

Database coursework 2

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1. Database Implementation

We have learned in class how to complete the database with phpMyAdmin. However, I thought it would be great to have access to additional database tools. Therefore, this coursework is using database IDE (Integrated Development Environment) DataGrip to complete. For the database server, instead of using XAMPP, I downloaded MySQL to my local machine and connected the database to DataGrip.

1.1 Schema

```
create table accounts
(
    account_id bigint          not null
        primary key,
    name         varchar(1024) null,
    email        varchar(512)  null,
    password     char(8)       null,
    role         varchar(40)    null,
    favourites   bigint        null,
    followers    int           null,
    likes        bigint        null
);

create table commission_policy
(
    commission_policy_id int      not null
        primary key,
    rule                  text     null,
    amount                double  null
);

create table followers
(
    follower_id      int      not null
        primary key,
    time             date     null,
    id_account        bigint  null,
    id_account_follower bigint  null,
    constraint followers_ibfk_1
        foreign key (id_account) references accounts (account_id),
    constraint followers_ibfk_2
        foreign key (id_account_follower) references accounts (account_id)
);

create index id_account
    on followers (id_account);

create index id_account_follower
    on followers (id_account_follower);

create table images
(
    image_id bigint          not null
        primary key,
    caption  varchar(128) null,
    alt      varchar(128) null,
    url      varchar(512) null
);
```

```

);

create table location
(
    location_id bigint        not null
        primary key,
    name         varchar(128) null,
    lat          double        null,
    lon          double        null
);

create table promotion
(
    promotion_id bigint        not null
        primary key,
    start_date   date          null,
    end_date     date          null,
    voucher_code varchar(512) null
);

create table reviews
(
    review_id bigint not null
        primary key,
    rating      smallint null,
    comments    text      null,
    id_account  bigint     null,
    constraint reviews_ibfk_1
        foreign key (id_account) references accounts (account_id)
);

create table comments
(
    comment_id bigint not null
        primary key,
    comment      text      null,
    id_review    bigint     null,
    id_account   bigint     null,
    constraint comments_ibfk_1
        foreign key (id_review) references reviews (review_id),
    constraint comments_ibfk_2
        foreign key (id_account) references accounts (account_id)
);

create index id_account
    on comments (id_account);

create index id_review
    on comments (id_review);

create table posts
(
    post_id          bigint        not null
        primary key,
    date             date          null,
    title            varchar(128) null,
    description       text          null,
    url              varchar(512) null,
    views            bigint         null,
    likes            bigint         null,

```

```

    id_image          bigint          null,
    id_location        bigint          null,
    id_review          bigint          null,
    id_promotion       bigint          null,
    id_commission_policy int           null,
    id_account         bigint          null,
    constraint posts_ibfk_1
        foreign key (id_image) references images (image_id),
    constraint posts_ibfk_2
        foreign key (id_location) references location (location_id),
    constraint posts_ibfk_3
        foreign key (id_review) references reviews (review_id),
    constraint posts_ibfk_4
        foreign key (id_promotion) references promotion (promotion_id),
    constraint posts_ibfk_5
        foreign key (id_review) references reviews (review_id),
    constraint posts_ibfk_6
        foreign key (id_commission_policy) references commission_policy (commission_policy_id),
    constraint posts_ibfk_7
        foreign key (id_account) references accounts (account_id)
);

create table favourites
(
    favourite_id int      not null
        primary key,
    time          date    null,
    id_post       bigint   null,
    id_account    bigint   null,
    constraint favourites_ibfk_1
        foreign key (id_post) references posts (post_id),
    constraint favourites_ibfk_2
        foreign key (id_account) references accounts (account_id)
);

create index id_account
    on favourites (id_account);

create index id_post
    on favourites (id_post);

create table likes
(
    like_id    bigint not null
        primary key,
    time       date    null,
    id_post    bigint   null,
    id_account bigint   null,
    constraint likes_ibfk_1
        foreign key (id_post) references posts (post_id),
    constraint likes_ibfk_2
        foreign key (id_account) references accounts (account_id)
);

create index id_account
    on likes (id_account);

create index id_post
    on likes (id_post);

```

```

create index id_account
    on posts (id_account);

create index id_commission_policy
    on posts (id_commission_policy);

create index id_image
    on posts (id_image);

create index id_location
    on posts (id_location);

create index id_promotion
    on posts (id_promotion);

create index id_review
    on posts (id_review);

create index id_account
    on reviews (id_account);

create table transaction
(
    transaction_id      bigint      not null
        primary key,
    order_no            varchar(128) null,
    commission           double      null,
    amount              double      null,
    id_account           bigint      null,
    id_commission_policy int         null,
    constraint transaction_ibfk_1
        foreign key (id_account) references accounts (account_id),
    constraint transaction_ibfk_2
        foreign key (id_commission_policy) references commission_policy (commission_policy_
);

create index id_account
    on transaction (id_account);

create index id_commission_policy
    on transaction (id_commission_policy);

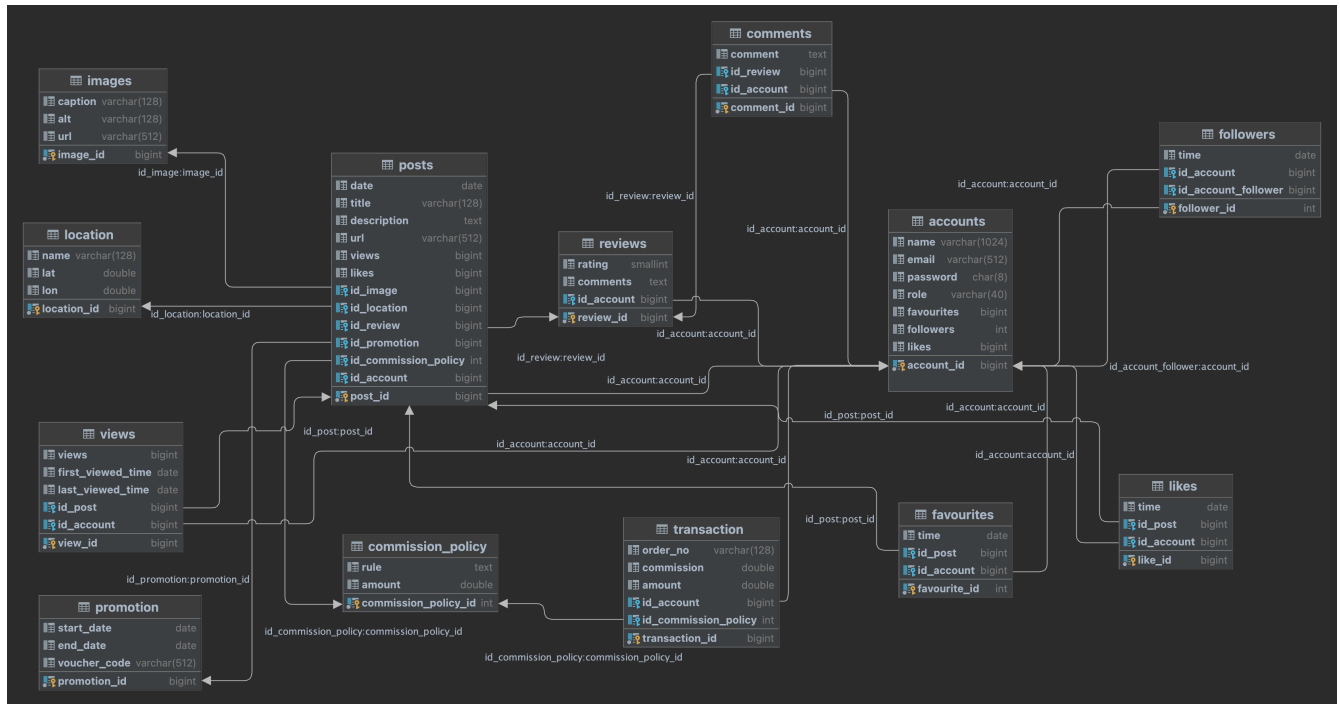
create table views
(
    view_id             bigint not null
        primary key,
    views               bigint null,
    first_viewed_time   date    null,
    last_viewed_time    date    null,
    id_post             bigint null,
    id_account          bigint null,
    constraint views_ibfk_1
        foreign key (id_post) references posts (post_id),
    constraint views_ibfk_2
        foreign key (id_account) references accounts (account_id)
);

create index id_account
    on views (id_account);

```

```
create index id_post
on views (id_post);
```

1.2 Schema Visual Diagram



1.3 Insert Sample Data

```
INSERT INTO ohmai.images (image_id, caption, alt, url)
VALUES (1, 'Cetaphil face wash', 'Cetaphil face wash', 'www.cetaphilfacewash.com');
INSERT INTO ohmai.images (image_id, caption, alt, url)
VALUES (2, 'Diptyque fig perfume', 'Diptyque fig perfume', 'www.diptyquefigperfume.com');
INSERT INTO ohmai.images (image_id, caption, alt, url)
VALUES (3, 'Evelom cleansing gel', 'Evelom cleansing gel', 'www.evelomcleansinggel.com');
INSERT INTO ohmai.images (image_id, caption, alt, url)
VALUES (4, 'Nars powder pressed', 'Nars powder pressed', 'www.Narspowderpressed.com');
INSERT INTO ohmai.images (image_id, caption, alt, url)
VALUES (5, 'Foreo bear mini', 'Foreo bear mini', 'www.foreobearmini.com');

INSERT INTO ohmai.location (location_id, name, lat, lon)
VALUES (1, 'Putney,London', 51.45979464520346, -0.21413996177785424);
INSERT INTO ohmai.location (location_id, name, lat, lon)
VALUES (2, 'Clapham Junction,London', 51.464174698356544, -0.170092617070423);
INSERT INTO ohmai.location (location_id, name, lat, lon)
VALUES (3, 'Roehampton,London', 51.44872695351816, -0.23982947219228684);
INSERT INTO ohmai.location (location_id, name, lat, lon)
VALUES (4, 'Roehampton,London', 51.44872695351816, -0.23982947219228684);

INSERT INTO ohmai.promotion (promotion_id, start_date, end_date, voucher_code)
VALUES (1, '2023-01-15', '2024-02-15', 'NEW10');
INSERT INTO ohmai.promotion (promotion_id, start_date, end_date, voucher_code)
VALUES (2, '2023-01-10', '2023-01-31', 'NEWBIE');
INSERT INTO ohmai.promotion (promotion_id, start_date, end_date, voucher_code)
```

```

VALUES (3, '2023-01-15', '2024-02-15', 'APP20');
INSERT INTO ohmai.promotion (promotion_id, start_date, end_date, voucher_code)
VALUES (4, '2023-11-15', '2023-12-01', 'BFPARTY');
INSERT INTO ohmai.promotion (promotion_id, start_date, end_date, voucher_code)
VALUES (5, '2023-04-10', '2023-08-10', 'HOLIDAY25');

INSERT INTO ohmai.commission_policy (commission_policy_id, rule, amount)
VALUES (1, 'Join Account', 5);
INSERT INTO ohmai.commission_policy (commission_policy_id, rule, amount)
VALUES (2, 'Publish 10 posts', 5);
INSERT INTO ohmai.commission_policy (commission_policy_id, rule, amount)
VALUES (3, 'Publish 20 posts', 15);
INSERT INTO ohmai.commission_policy (commission_policy_id, rule, amount)
VALUES (4, 'Refer a friend', 20);

INSERT INTO ohmai.accounts (account_id, name, email, password, role, favourites, followers,
VALUES (1, 'Cindy', 'cindy@gmail.com', '12345', 'reviewer', 45, 3, 58);
INSERT INTO ohmai.accounts (account_id, name, email, password, role, favourites, followers,
VALUES (2, 'Mladen', 'mladen@gmail.com', '456', 'reviewer', 16, 2, 38);
INSERT INTO ohmai.accounts (account_id, name, email, password, role, favourites, followers,
VALUES (3, 'Joan', 'joan@gmail.com', '789', 'reviewer', 23, 1, 68);
INSERT INTO ohmai.accounts (account_id, name, email, password, role, favourites, followers,
VALUES (4, 'Lihsin', 'lihsin@gmail.com', '101', 'admin', 82, 1, 98);
INSERT INTO ohmai.accounts (account_id, name, email, password, role, favourites, followers,
VALUES (5, 'Ben', 'ben@gmail.com', '112', 'reviewer', 10, 2, 5);

INSERT INTO ohmai.reviews (review_id, rating, comments, id_account)
VALUES (1, 4, 'I bought the item immediately', 1);
INSERT INTO ohmai.reviews (review_id, rating, comments, id_account)
VALUES (2, 5, 'Amazing product, I use it for so long ', 2);
INSERT INTO ohmai.reviews (review_id, rating, comments, id_account)
VALUES (3, 3, 'Use it once, just average, probably not going to by again ', 2);
INSERT INTO ohmai.reviews (review_id, rating, comments, id_account)
VALUES (4, 4, 'Great product, I want to try it ', 3);
INSERT INTO ohmai.reviews (review_id, rating, comments, id_account)
VALUES (5, 4, 'Good value of product ', 4);

INSERT INTO ohmai.posts (post_id, date, title, description, url, views, likes, id_image, id
id_promotion, id_commission_policy, id_account)
VALUES (1, '2022-02-14', 'Cetaphil face wash', 'Great product, helpful for oily skin',
'https://www.ohmai.co/posts/7LI6zhYKoAUdJFohcAQj', 10, 1, 1, 1, 1, 1, 1);
INSERT INTO ohmai.posts (post_id, date, title, description, url, views, likes, id_image, id
id_promotion, id_commission_policy, id_account)
VALUES (2, '2022-02-14', 'Diptyque fig perfume', 'Very special perfume',
'https://www.ohmai.co/posts/9BPED0F3Lrt5AoW7p5u5', 12, 1, 2, 2, 2, 2, 2);
INSERT INTO ohmai.posts (post_id, date, title, description, url, views, likes, id_image, id
id_promotion, id_commission_policy, id_account)
VALUES (3, '2022-05-21', 'EVELOM cleansing gel', 'Clean well! and reduce black head',
'https://www.ohmai.co/posts/A5XfsVL71jZNe0LAzBnz', 10, 5, 3, 3, 3, 1, 1);
INSERT INTO ohmai.posts (post_id, date, title, description, url, views, likes, id_image, id
id_promotion, id_commission_policy, id_account)
VALUES (4, '2022-07-04', 'Nars powder pressed',
'Like this powder pressed but the size is too small, will by the full size next tin
'https://www.ohmai.co/posts/CwEVQEz8IIxVAnC7IIk8', 12, 2, 4, 3, 4, 2, 2);
INSERT INTO ohmai.posts (post_id, date, title, description, url, views, likes, id_image, id
id_promotion, id_commission_policy, id_account)
VALUES (5, '2022-01-10', 'Foreo bear mini', 'Easy to carry and work effectively!',
'https://www.ohmai.co/posts/F0oKqEkWeaUtT35aUosJ', 5, 2, 5, 4, 5, 1, 1);

INSERT INTO ohmai.favourites (favourite_id, time, id_post, id_account)

```

```

VALUES (1, '2022-02-01', 1, 1);
INSERT INTO ohmai.favourites (favourite_id, time, id_post, id_account)
VALUES (2, '2022-02-21', 2, 1);
INSERT INTO ohmai.favourites (favourite_id, time, id_post, id_account)
VALUES (3, '2022-03-01', 3, 2);
INSERT INTO ohmai.favourites (favourite_id, time, id_post, id_account)
VALUES (4, '2022-05-05', 4, 3);
INSERT INTO ohmai.favourites (favourite_id, time, id_post, id_account)
VALUES (5, '2022-08-14', 1, 4);

INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (1, '2022-01-01', 1, 1);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (2, '2022-01-01', 2, 1);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (3, '2022-01-01', 3, 2);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (6, '2022-05-11', 3, 1);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (9, '2022-05-11', 3, 3);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (10, '2022-06-02', 3, 4);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (11, '2022-10-01', 3, 5);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (4, '2022-01-01', 4, 3);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (7, '2022-06-02', 4, 1);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (8, '2022-10-01', 5, 1);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (12, '2023-01-02', 5, 2);
INSERT INTO ohmai.likes (like_id, time, id_post, id_account)
VALUES (5, '2022-01-01', 5, 4);

INSERT INTO ohmai.transaction (transaction_id, order_no, commission, amount, id_account, id_post)
VALUES (1, 101, 5, 120, 1, 1);
INSERT INTO ohmai.transaction (transaction_id, order_no, commission, amount, id_account, id_post)
VALUES (2, 102, 5, 230, 2, 2);
INSERT INTO ohmai.transaction (transaction_id, order_no, commission, amount, id_account, id_post)
VALUES (3, 103, 15, 99, 3, 3);
INSERT INTO ohmai.transaction (transaction_id, order_no, commission, amount, id_account, id_post)
VALUES (4, 104, 20, 43, 4, 4);
INSERT INTO ohmai.transaction (transaction_id, order_no, commission, amount, id_account, id_post)
VALUES (5, 105, 5, 58, 3, 1);

INSERT INTO ohmai.views (view_id, views, first_viewed_time, last_viewed_time, id_post, id_account)
VALUES (1, 40, '2022-01-03', '2022-01-04', 1, 2);
INSERT INTO ohmai.views (view_id, views, first_viewed_time, last_viewed_time, id_post, id_account)
VALUES (2, 12, '2022-02-13', '2022-02-14', 2, 3);
INSERT INTO ohmai.views (view_id, views, first_viewed_time, last_viewed_time, id_post, id_account)
VALUES (3, 36, '2022-02-14', '2022-02-15', 2, 4);
INSERT INTO ohmai.views (view_id, views, first_viewed_time, last_viewed_time, id_post, id_account)
VALUES (4, 23, '2022-07-30', '2022-07-31', 3, 5);
INSERT INTO ohmai.views (view_id, views, first_viewed_time, last_viewed_time, id_post, id_account)
VALUES (5, 13, '2022-10-22', '2022-10-23', 4, 1);
INSERT INTO ohmai.views (view_id, views, first_viewed_time, last_viewed_time, id_post, id_account)
VALUES (6, 15, '2022-11-09', '2022-11-10', 5, 2);

INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)

```



```
VALUES (1, '2022-01-31', 1, 2);
INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)
VALUES (2, '2022-04-10', 1, 3);
INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)
VALUES (3, '2022-05-10', 2, 3);
INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)
VALUES (4, '2022-08-11', 3, 4);
INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)
VALUES (5, '2022-12-08', 4, 1);
INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)
VALUES (6, '2022-04-10', 1, 4);
INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)
VALUES (7, '2022-04-10', 2, 1);
INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)
VALUES (8, '2022-05-10', 5, 1);
INSERT INTO ohmai.followers (follower_id, time, id_account, id_account_follower)
VALUES (9, '2022-6-11', 5, 2);

INSERT INTO ohmai.comments (comment_id, comment, id_review, id_account)
VALUES (1, 'I bought it as well', 1, 2);
INSERT INTO ohmai.comments (comment_id, comment, id_review, id_account)
VALUES (2, 'same here', 1, 3);
INSERT INTO ohmai.comments (comment_id, comment, id_review, id_account)
VALUES (3, 'I also recommend it', 2, 4);
INSERT INTO ohmai.comments (comment_id, comment, id_review, id_account)
VALUES (4, 'Really! maybe I should try other brand', 3, 5);
INSERT INTO ohmai.comments (comment_id, comment, id_review, id_account)
VALUES (5, 'I tried, good item', 4, 1);
```

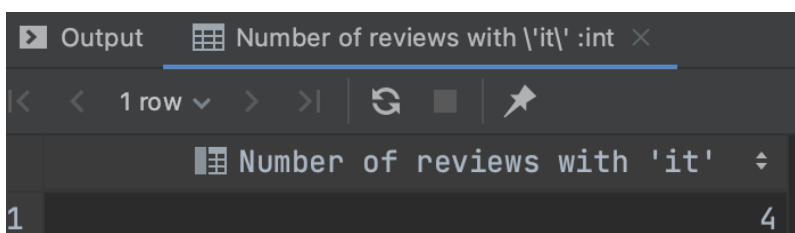
3. Lab Assessment Questions

3.1 Return the number of reviews which review comments contains string 'it'

SQL satatement:

```
SELECT COUNT(comments) AS 'Number of reviews with \'it\' '
FROM reviews
WHERE comments LIKE '%it%';
```

Output:



The screenshot shows a database interface with a query window titled "Output" and a subtitle "Number of reviews with 'it' :int". The query window contains the SQL query. Below the query window, the results are displayed in a table with one row and one column. The table has a header "Number of reviews with 'it'" and a value of 4.

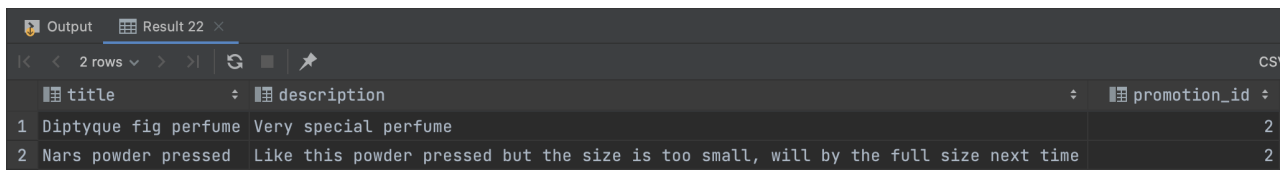
Number of reviews with 'it'
4

3.2 Return the post title and description for the post which contains the promotion which end_date is on year 2023.

SQL satatement:

```
SELECT title, description, promotion_id
FROM posts
      JOIN promotion ON promotion_id
WHERE posts.id_promotion = promotion.promotion_id
      AND promotion.end_date < '2024-01-01';
```

Output:



The screenshot shows a database query output window with the title 'Output' and 'Result 22'. It displays 2 rows of data. The columns are 'title', 'description', and 'promotion_id'. The first row shows 'Diptyque fig perfume' with description 'Very special perfume' and promotion_id '2'. The second row shows 'Nars powder pressed' with description 'Like this powder pressed but the size is too small, will by the full size next time' and promotion_id '2'.

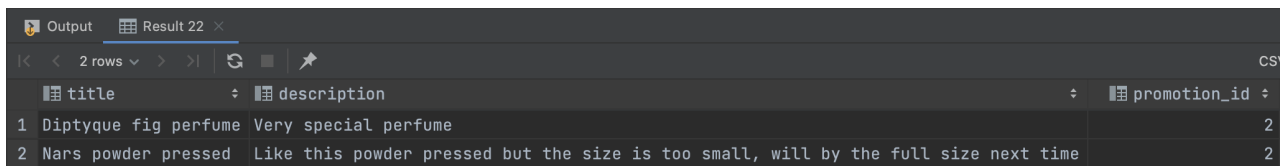
	title	description	promotion_id
1	Diptyque fig perfume	Very special perfume	2
2	Nars powder pressed	Like this powder pressed but the size is too small, will by the full size next time	2

3.3 Return the review comments and post_id which are written by account name cindy.

SQL satatement:

```
SELECT reviews.comments, posts.post_id
FROM posts
      JOIN accounts
      ON accounts.account_id = posts.id_account
      JOIN reviews
      ON reviews.review_id = posts.id_review
WHERE accounts.name = 'Cindy';
```

Output:



The screenshot shows a database query output window with the title 'Output' and 'Result 22'. It displays 2 rows of data. The columns are 'title', 'description', and 'promotion_id'. The first row shows 'Diptyque fig perfume' with description 'Very special perfume' and promotion_id '2'. The second row shows 'Nars powder pressed' with description 'Like this powder pressed but the size is too small, will by the full size next time' and promotion_id '2'.

	title	description	promotion_id
1	Diptyque fig perfume	Very special perfume	2
2	Nars powder pressed	Like this powder pressed but the size is too small, will by the full size next time	2