

# *nom-inator*

Project 1  
COMS W4111  
Introduction to Databases

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## *Proposal*

The *nom-inator* is a restaurant recommendation app that will draw on the Foursquare API, weather reports, as well as the user's location and preferences to recommend restaurants for the user to try out.

### *Databases needed*

1. Restaurant information, along with visit information and their timestamps (Foursquare)
2. Weather data, past and present

### *Use Cases*

1. Filter and sort restaurants that fit a user's requirements at a specific moment in time based on
  - (a) a restaurant's waiting time / popularity;
  - (b) the current time, the day of the week, the weather, and the user's current location; and
  - (c) the user's list of favourite restaurants.
2. Recommend the best days and times to visit a user-specified restaurant.
3. Users can maintain a list of favourite restaurants, that feed into the results for use case 1.

### *Potential Problems*

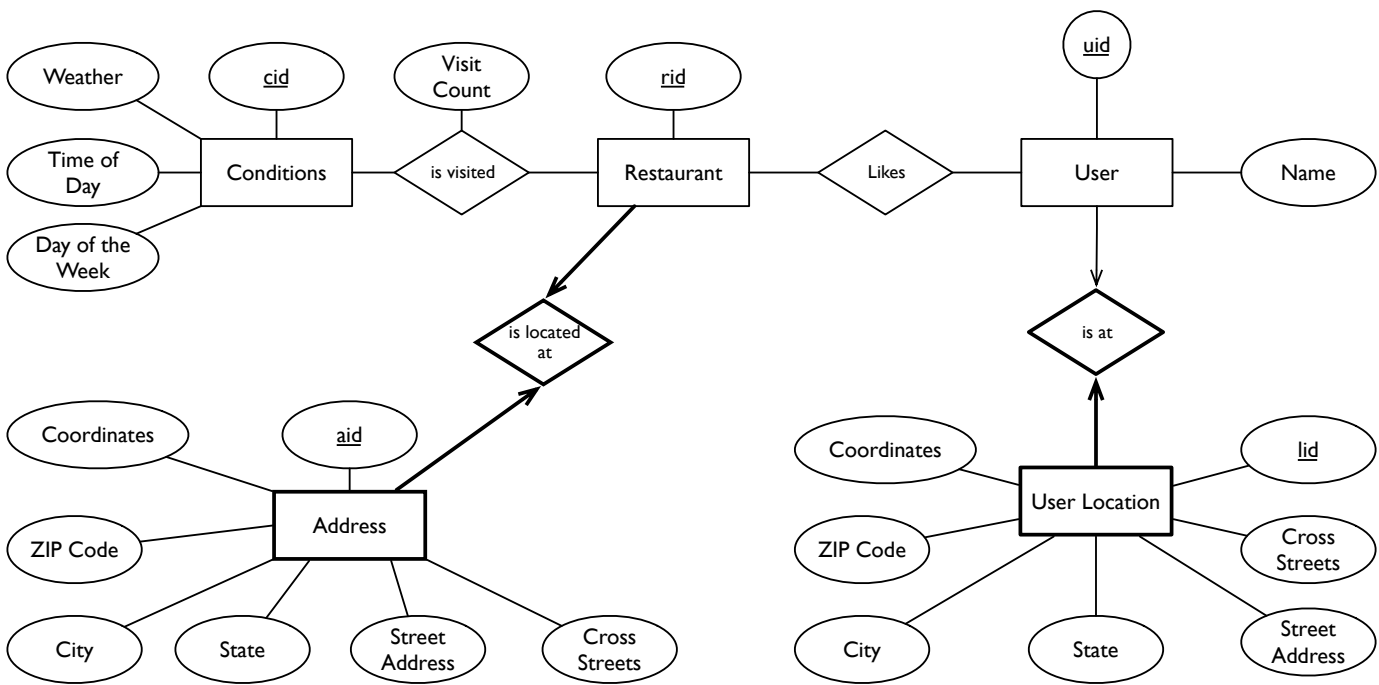
1. Need information about restaurants' opening hours to avoid erroneous recommendations.
2. How do we efficiently find restaurants near to the user?

### *Other Applications*

The same recommendation system can potentially be applied to other popular places like museums and tourist attractions.

### *Contingency Plan*

Eliminate use cases 3 and 1c (i.e. the favourites list will not be implemented), as well as use case 1b (i.e. the geolocation search will not be implemented).



## *SQL Schema*

```
CREATE TABLE User(  
    uid int,  
    name text,  
    lid int,  
    PRIMARY KEY (uid)  
    FOREIGN KEY (lid) REFERENCES User_Location  
)
```

```
CREATE TABLE Rstrnt_of_UserLike(  
    rid int,  
    uid int,  
    PRIMARY KEY(rid, uid)  
    FOREIGN KEY (rid) REFERENCES Restaurant  
        ON DELETE CASCADE  
    FOREIGN KEY (uid) REFERENCES User  
        ON DELETE CASCADE  
)
```

```
CREATE TABLE Restaurant(  
    rid int,  
    aid int NOT NULL,  
    rate int,  
    PRIMARY KEY (rid)  
    FOREIGN KEY (aid, rid) REFERENCES Address  
        ON DELETE NO ACTION  
)
```

```
CREATE TABLE Address(  
    aid int,  
    rid int,  
    coordinate text,  
    zip int,  
    city text,  
    state text,  
    st_addr text,  
    cross_st text,  
    PRIMARY KEY (aid, rid)  
    FOREIGN KEY (rid) REFERENCES Restaurant  
        ON DELETE CASCADE  
)
```

```
CREATE TABLE User_Location(  
    lid int,  
    uid int,  
    coordinate text,  
    zip int,  
    city text,  
    state text,  
    st_addr text,
```

```

    cross_st text,
    PRIMARY KEY(lid, uid)
    FOREIGN KEY (uid) REFERENCES User
        ON DELETE CASCADE
)

CREATE TABLE Condition( -- our prebuilt table, no modifications allowed
    cid int,
    day_of_week int, -- 1~7
    weather text, -- sunny, rainy, snowy, cloudy
    time int, -- 0~24
    PRIMARY KEY (cid)
)

CREATE TABLE Visit(
    rid int,
    cid int,
    count int,
    PRIMARY KEY(rid, cid)
    FOREIGN KEY (rid) REFERENCES Restaurant
        ON DELETE CASCADE
    FOREIGN KEY (cid) REFERENCES Condition
        ON DELETE CASCADE
)

```