HW 1. UML Diagram - Solution

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**Users**

UserName: string

Password: string

FirstName: string

LastName: string

Email: string

Phone: string

**CreditCards**

CardNumber: biginteger

Expiration: date

Username: string

**Reviews**

ReviewId: integer

(surrogate key)Created: timestamp

Content: string

Rating: decimal

UserName: string

RestaurantId: integer

**Recommendations**

RecommendationId: integer

(surrogate key)

UserName: string

RestaurantId: integer

**TakeOutRestaurant**

RestaurantId: integer

MaxWaitTIme: integer

**FoodCartRestaurant**

RestaurantId: integer

Licensed: boolean

**SitDownRestaurant**

RestaurantId: integer

Capacity: integer

**Companies**

CompanyName: string

About: string

1

1

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0..1

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0..1

0..1

1

1

1

0..1

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has-a/part-of

has-a/part-of

has-a

has-a

has-a

has-a

is-a

is-a

is-a

has-a

0..1

0..1

0..1

0..1

**Reservations**

ReservationId: integer

(surrogate key)

Start: timestamp

End: timestamp

Size: integer

UserName: string

RestaurantId: integer

1

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has-a/part-of

**<<enumeration>>**

**CuisineType**

AFRICAN

AMERICAN

ASIAN

EUROPEAN

HISPANIC

1

**Restaurants**

RestaurantId: integer

(surrogate key)

Name: string

Description: string

Menu: string

Hours: string

Active: boolean

Cuisine: CuisineType

Street1: string

Street2: string

City: string

State: string

Zip: integer

CompanyName: string

has-a/part-of

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Notes:

* The solution above was chosen for simplicity, which will make HW2 more straightforward. *Intentionally*, there are multiple acceptable solutions for HW1, depending on your interpretation of the narrative, assumptions, normalizations, etc.
* Examples:
  + Some of the cardinalities for “one” (“1”) or “optionally one” (“0..1”) are ambiguous.
  + The association classes contain foreign keys as attributes. This is optional in a UML.
  + Similarly, some fields that are foreign key references are omitted, but implied by the relationship.
  + This solution specifies the CuisineType enumeration as a separate table, where it is assumed to have the same life cycle as Restaurants. The alternative is for CuisineType to be an enum data type, as discussed in class.
  + Although some classes can be further normalized, let’s assume the solution above is sufficiently normalized (I.E. 3NF).
  + It is possible to get a new credit card with the same number but a different expiration date, so using CardNumber as primary key is not a robust solution. (Again, this non-robust choice is for simplicity on HW2.)