

**Assumptions:**

1. A REVIEW must be written by a USER. A USER may write 0 or more REVIEWS.
2. A RESTAURANT must contain at least 1 MENU, and likewise a MENU must be associated with a RESTAURANT.
3. REVIEWS must have a RESTAURANT, while RESTAURANTS may have 0 or more REVIEWS.
4. Multiple or no USERS may desire one or more RESTAURANTS.
5. A MENU and REVIEWS must depend on RESTAURANT to be uniquely identifiable.
6. REVIEWS additionally depends on USER for unique identification.
7. A USER can have one or no Favorite\_Restaurant.
8. Every USER can use only one Email\_Address per account.
9. Every STATE must contain at least 1 or more CITIES, and likewise every CITY must be in a STATE.
10. Every USER must live in a CITY, and every CITY must contain at least 1 USER.

**CONTACT**

uEmail_Address	PhoneNumber	<u>UserID</u>
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USER		
<u>UserID</u>	<u>cName</u>	uName

CITY		
<u>cName</u>	<u>sName</u>	cCounty

RESTAURANT						
<u>rID</u>	<u>cName</u>	rContact	rName	rHappy_Hour	rOperation_Period	rAddress

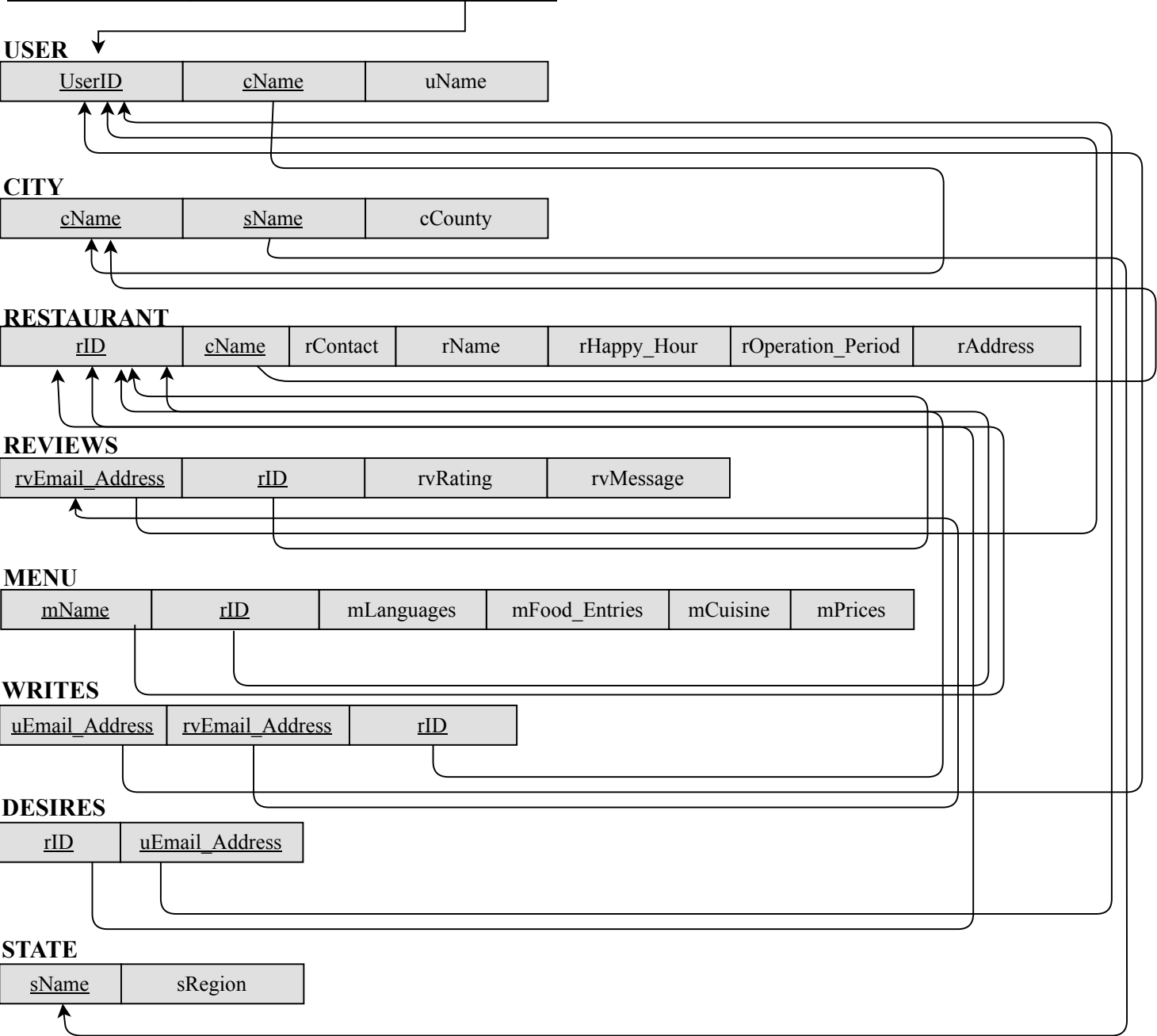
REVIEWS			
<u>rvEmail_Address</u>	<u>rID</u>	rvRating	rvMessage

MENU					
<u>mName</u>	<u>rID</u>	mLanguages	mFood_Entries	mCuisine	mPrices

WRITES		
<u>uEmail_Address</u>	<u>rvEmail_Address</u>	<u>rID</u>

DESIRES	
<u>rID</u>	<u>uEmail_Address</u>

STATE	
<u>sName</u>	sRegion



### Domain Constraints:

1. uEmail\_Address, rvEmail\_Address are alphanumeric strings up to 20 characters ending with @ domain
2. rAddress is a alphanumeric string up to 100 characters with the format consisting of: street address, state, and zip code.
3. uName, rName, sName, sRegion, cName, cCounty, mCuisine, mFood\_Entries are alphabetic strings up to 50 characters long.
4. rID is a series of 4-digit single integers from 0-9.
5. rContact is a series of single digit integers from 0-9 in a US Phone formatting.
6. rHappy\_Hours, rOperation\_Period consists of four single integers ranging from 0000-2359.
7. rvRatings are single integers from 1-5 formatted in R/5 (where R = defined integer)
8. rMessage is a alphanumeric string up to 150 characters.
9. mLanguages is a string that must be an officially recognized language.
10. mPrices is a double following US Pricing conventions (\$dollars.cents).

### Referential Constraints:

1. Every USER must be from a CITY.
2. Every RESTAURANT must BE in a CITY.
3. Every CITY must be in a STATE.
4. Every REVIEW must have a USER (who writes it) and RESTAURANT (who is being reviewed).
5. Every USER can have RESTAURANTS that they desire to visit, but have not visited yet.
6. Every RESTAURANT must have at least one MENU.
7. Every MENU can only be associated with one RESTAURANT.

### Key Constraints:

1. All primary keys must be unique from one another.

### Assumptions:

1. Address attributes only include street address and ZIP code. The CITY and STATE come from those entities.
2. Both uEmail\_Address and rvEmail\_Address are assumed to be valid.
3. rHappy\_Hours and rOperations\_Period follow the same time format: the first integer is when they open and the second is when they close.
4. rOperation\_Period can be listed sequentially to show when the next opening times occur.

PK refers to Primary Key, FK refers to Foreign Key

USER	
PK	<u>uEmail_Address</u>
FK	cName
CITY	
PK	<u>cName</u>
FK	sName
STATE	
PK	<u>sName</u>
FK	-
RESTAURANT	
PK	<u>rID</u>
FK	cName

REVIEWS	
PK	<u>rvEmail_Address + rID</u>
FK	rvEmail_Address
FK	rID
MENU	
PK	<u>mName + rID</u>
FK	rID
DESIRES	
PK	<u>rID + uEmail_Address</u>
FK	rID
FK	uEmail_Address

WRITES	
PK	<u>uEmail_Address + rID + rvEmail_Address</u>
FK	uEmail_Address
FK	rEmail_Address
FK	rID