

# Database Concepts

## Exercise 12

1. Create the necessary DDL statements for the following scenarios:
  - (a) Create a table GLASSs with the attributes Gname(VARCHAR2(15)) and Gid(NUMBER). Gid is the primary key.
  - (b) Create a table Ingredient with the attributes Iname(VARCHAR2(15)), Iid(NUMBER) and Alcohol\_content(NUMBER). Iid is the primary key. The default alcohol content value is 0.
  - (c) Create a table Cocktail with the attributes Cname(VARCHAR2(20)), Cid(NUMBER), Alcoholic(CHAR(1)) and Gid(NUMBER). Cid is the primary key and Gid is a foreign key referencing table GLASSs(Gid). Additionally, Cname is not allowed to be "Absinth".
2. Insert following data into the database:
  - (a) Insert following values into table GLASSs:

<u>Gid</u>	Gname
1	Floete
2	Schwenker
3	Kelch

- (b) Insert following values into table Ingredient:

<u>Iid</u>	Iname	Alcohol_content
1	Tequilla	34
2	Curacao Triple	36
3	Limettensaft	0

3. Use the available SQL-Script *create.sql* to set up a database. Answer following queries:
  - (a) Which cocktails exist in the database?
  - (b) Which bars have the postal code 39108?
  - (c) List all postal codes (without duplicates).
  - (d) Which ingredients have an alcohol content greater than 30?
  
4. Again, use the schema from task 3. Use the presented possibilities of SQL as presented in the lecture where appropriate.
  - (a) In a drinking game, all persons should play against each other. List the pairs of players (Name, Name).
  - (b) List the names of glasses and cocktails in single column list/ table.
  - (c) For which cocktails no recipe is available?
  - (d) In which bars no "Knieweich" is served?
  - (e) Insert into table Cocktail the new cocktail "Lila Kuh". The cocktail has alcohol and is served in a "Schwenker". Its id is 18.
  - (f) The cocktail "Lila Kuh" is named wrong. The correct name is "Blaue Kuh". Fix the mistake.
  - (g) The alcohol content of all ingredients of cocktail "Knieweich" is twice as high as currently given in the database. Fix the mistake.
  - (h) Delete the glass "Bierkrug".
  - (i) Which bars serve cocktails with id 8 or 11?
  - (j) Which cocktail has alcohol and is served in a "Cocktailglas"?
  - (k) Which glasses are never used?
  - (l) About which cocktails people talk? (Use table cocktail\_person!)
  - (m) Which ingredients have an alcohol content between 0 and 50?
  - (n) Which persons' names start with "S"?
  - (o) Is there a bar that does not serve any cocktail?
  - (p) What is the average alcohol content of all ingredients? (Do not use the AVG function!)
  - (q) What is the average alcohol content of all ingredients? (Use the AVG function!)
  - (r) How many ingredients are stored in the database?
  
5. To solve these tasks use the already introduced schema.
  - (a) List the amount only of alcoholic ingredients in every cocktail.

- (b) List all cocktails that have more than 2 ingredients. Additionally, list the number of ingredients per cocktail.
- (c) The alcohol content of a cocktail is the ratio between the sum of alcohol content of all ingredients (alcohol content of ingredient \* amount of ingredient) and the sum of amounts of all ingredients. Compute the alcohol content of each cocktail. Thereby, use suitable names for the columns of the result relation.
- (d) List all alcoholic and non-alcoholic cocktails that have more than 4 ingredients. Additionally, list the number of ingredients per cocktail.
- (e) Create view "Cocktail\_View" that provides the cid and the alcoholic content of every cocktail.
- (f) Find for bar the minimum and maximum alcohol content of the served cocktails. Use the previously created view.
- (g) Create a view that provides as much information about cocktails as possible (including derived information as well as data from other tables).

**Good Luck!**