

# NBB\_SQL

January 7, 2019

## 1 Relational Databases and SQL

```
In [1]: %matplotlib inline
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
from scipy import stats
import seaborn as sns
import warnings
import random
from datetime import datetime
random.seed(datetime.now())
warnings.filterwarnings('ignore')

import sqlite3

# Make plots larger
plt.rcParams['figure.figsize'] = (10, 6)
```

### 1.1 Topics

Entity Relationship Model (ERM) Entity Sets Relationship Sets Design Issues Mapping Constraints  
Keys E-R Diagram Extended E-R Features Design of an E-R Database Schema  
Reduction of an E-R Schema to Tables  
SQLite

#### 1.1.1 Conceptual Design

Conceptual design: (ER Model is used at this stage.) o What are the entities and relationships in the enterprise? o What information about these entities and relationships should we store in the database? o What are the integrity constraints or business rules that hold? o A database 'schema' in the ER Model can be represented pictorially (ER diagrams). o An ER diagram can be mapped into a relational schema.

#### 1.1.2 Entity-Relationship Model (ERM)

Entity Sets  
Relationship Sets