# COMP2714 Tutorial 3.1: SQL Introduction Worksheet

# Introduction

**Purpose:** The purpose of this tutorial is to introduce you to the basics of SQL Data Definition Language (DDL) and Data Manipulation Language (DML). You will see how even basic SQL queries can be used to complete common tasks for a database administrator.

**Learning Outcomes:** By the end of this tutorial you will be able to:

* Implement relational schemas using SQL
* Evaluate and justify design choices for schema implementation
* Write SQL queries to add, modify and delete data in a database
* Understand the basic syntax of SQL

# Section A: Data Definition Language (DDL)

The following is a relational schema for a blogging database. Based on this schema, write SQL DDL queries to complete the tasks in this section.

**Note:** Where attribute data types are not directly given, use common sense to choose appropriately.

Blog [blogSite, owner, dateCreated]

Article [blogSite, articleTitle, articleType, lengthInWords]

Foreign Keys:

Article.blogSite references Blog.blogSite

**A.1** Write an SQL query to create the BLOG table.

Write here

CREATE TABLE Blog (

blogSite VARCHAR(255) PRIMARY KEY,

owner VARCHAR(255) NOT NULL,

dateCreated DATE

);

ABN: 63 942 912 684

CRICOS PROVIDER NUMBER 00025B

Write here

CREATE TABLE Article (

blogSite VARCHAR(255),

articleTitle VARCHAR(255) NOT NULL,

articleType VARCHAR(50),

lengthInWords INT,

CONSTRAINT fk\_blogSite FOREIGN KEY (blogSite)

REFERENCES Blog(blogSite)

);



**A.2** Write an SQL query to create the ARTICLE table, including its foreign key.

* 1. Write an SQL query to add a new column to the ARTICLE table called “AuthorName”. **Note**: For the purposes of anonymity, not every article will have a recorded author.

Write here

ALTER TABLE Article

ADD COLUMN authorName VARCHAR(255);

* 1. Write an SQL query to add a new constraint to the BLOG table called “UniqueOwner” which requires that each blog site have a unique “Owner”.

Write here

ALTER TABLE Blog

ADD CONSTRAINT UniqueOwner UNIQUE (owner);

# Section B: Data Manipulation Language (DML)

Using the following revised schema for the blogging database, write SQL DML queries to complete the tasks in this section.

Blog [blogSite, owner, dateCreated]

Article [blogSite, articleTitle, articleType, lengthInWords, authorName]

Foreign Keys:

Article.blogSite references Blog.blogSite

* 1. Create a new entry in the BLOG table for “Jemma Jones”, the owner of the site “www.fundatabaseblogs.net”, who created the site on 13/02/2020

Write here

INSERT INTO Blog (blogSite, owner, dateCreated)

VALUES ('www.fundatabaseblogs.net', 'Jemma Jones', '2020-02-13');

* 1. Create a new entry in the ARTICLE table for Jemma’s blog. The title of the article was “Top 10 Reasons to take INFS1200!”, the article category was “University”, the article length was 2048 words and the author was “Hassan Khosravi”.

Write here

INSERT INTO Article (blogSite, articleTitle, articleType, lengthInWords, authorName)

VALUES ('www.fundatabaseblogs.net', 'Top 10 Reasons to take INFS1200!', 'University', 2048, 'Hassan Khosravi');

* 1. The blog site “freewriting.info” has decided to gift each author from their site

Write here

INSERT INTO Blog (blogSite, owner, dateCreated)

SELECT CONCAT(authorName, '.freewriting.info'), authorName, CURDATE()

FROM Article

WHERE blogSite = 'freewriting.info';

with their own blog. The author will be the owner and the address of the site will

follow the format “AuthorName.freewriting.info”. Create these new entries in the

BLOG table. Hint: Use the SQL CONCAT function to join two words

Write here

UPDATE Article

SET lengthInWords = lengthInWords + 100

WHERE authorName = 'Jack Garcia';



**B.4** Increase the word length by 100 for each article written by “Jack Garcia”.

* 1. After much negotiation, the blog sites “www.infs1200forever.blog” and “www.infs1200always.blog” have merged to a new website called

“www.infs1200.blog”. Assuming an entry for this new website exists in the BLOG table, update all the articles for these two old sites to the new BlogSite.

Write here

UPDATE Article

SET blogSite = 'www.infs1200.blog'

WHERE blogSite IN ('www.infs1200forever.blog', 'www.infs1200always.blog');

* 1. Remove all articles which have a word count over 10,000

Write here

DELETE FROM Article

WHERE lengthInWords > 10000;

* 1. ASIO has requested that all articles be removed which contain the following spy code words and code phrases in the title:

• Foxtrot

• Calculus

• Cookie Monster

• Disco

Write here

DELETE FROM Article

WHERE articleTitle LIKE '%Foxtrot%'

OR articleTitle LIKE '%Calculus%'

OR articleTitle LIKE '%Cookie Monster%'

OR articleTitle LIKE '%Disco%';

* 1. List all blog sites that Owner sqlUser created between 1/1/2017 to 1/2/2017.

Write here

SELECT \*

FROM Blog

WHERE owner = 'sqlUser'

AND dateCreated BETWEEN '2017-01-01' AND '2017-02-01';

* 1. Find all blog sites with an owner starting with A.

Write here

SELECT \*

FROM Blog

WHERE owner LIKE 'A%';

* 1. List all the articles and their associated blog site in descending order of word length.

Write here

SELECT articleTitle, blogSite, lengthInWords

FROM Article

ORDER BY lengthInWords DESC;