

# An Introduction to SQL

## Introduction

SQL is a standard computer language for accessing and manipulating databases.

- SQL stands for **S**tructured **Q**uery **L**anguage
- SQL allows you to access a database
- SQL can execute queries against a database
- SQL can retrieve data from a database using the **SELECT** keyword
- SQL can insert new records in a database using the **INSERT** keyword
- SQL can delete records from a database using the **DELETE** keyword
- SQL can update records in a database using the **UPDATE** keyword

## Tables

A database often contains one or more **tables** (relational databases). Each table is identified by a name (eg sales\_company or sales\_contacts). Tables contain records (rows) with data. Tables in *relational databases* are linked together using common ids, for example, *companyid* or *contactid*.

## Data Types

There are many data types in SQL. These can be summarized as:

- Text
- Numbers
- Dates
- Bits

## SQL Queries

With SQL, we can query a database and have a result set returned.

A query like this:

**SELECT company\_name FROM sales\_company**

Gives a result set like this:

company_name
Absolutx
Addidas
All Blacks
Alpha Telecom

# An Introduction to SQL

## Simple Examples

**Q1)** List all companies, by name, in the CRM database

**A1)** *SELECT company\_name FROM sales\_company*

**Q2)** List all companies and their creation date

**A2)** *SELECT company\_name, date\_created FROM sales\_company*

**Q3)** List all columns from the sales\_company table

**A3)** *SELECT \* FROM sales\_company*

## WHERE Examples

**Q4)** List all companies in the CRM database where the meshowner is Anna.Murray

**A4)** *SELECT company\_name FROM sales\_company WHERE meshowner='Anna.Murray'*

**Q5)** List the last name of all contacts in the CRM database whose first name is John.

**A5)** *SELECT last\_name FROM sales\_contacts WHERE first\_name='John'*

**Q6)** List all companies created after 1/08/04

**A6)** *SELECT company\_name FROM sales\_company WHERE date\_created > '20040801'*

## Multiple WHERE Examples

**Q7)** List the email addresses of all contacts whose first name is Dominic and last name is Marsat

**A7)** *SELECT email FROM sales\_contacts WHERE first\_name='Dominic AND last\_name='Marsat'*

**Q8)** List all history comments created by Anna Murray after 15/09/04

**A8)** *SELECT history FROM sales\_history WHERE usermesh='Anna.Murray' AND date\_created > '20040915'*