

```
DROP DATABASE IF EXISTS CMS_FINAL;
CREATE DATABASE CMS_FINAL;
USE CMS_FINAL;

SET FOREIGN_KEY_CHECKS=0;
-- ACCOUNTS --
/** All persons must have accounts to use the web interface **/
CREATE TABLE account (
    id INTEGER PRIMARY KEY NOT NULL AUTO_INCREMENT,
    /* is_employee BOOLEAN NOT NULL,*/
    first_name TEXT NOT NULL,
    middle_initial TEXT NOT NULL DEFAULT '',
    last_name TEXT NOT NULL,
    email TEXT NOT NULL,
    phone TEXT NOT NULL
);

CREATE TABLE account_login (
    id INTEGER NOT NULL,
    username TEXT NOT NULL,
    password TEXT NOT NULL,
    CONSTRAINT login_id FOREIGN KEY (id)
        REFERENCES account (id)
);

/** Sales associate, Manager, employee, Admin **/
CREATE TABLE role (
    name VARCHAR(32) PRIMARY KEY NOT NULL
);

/** Types of insurance plans employees can have **/
CREATE TABLE insurance_plan (
    name VARCHAR(32) PRIMARY KEY NOT NULL,
    pct_reimbursed INTEGER NOT NULL
);

-- EMPLOYEES --
CREATE TABLE employee (
    id INTEGER PRIMARY KEY NOT NULL AUTO_INCREMENT,
    insurance_plan VARCHAR(32) NOT NULL,
    role VARCHAR(32) NOT NULL,
    weekly_hours INTEGER NOT NULL,
    CONSTRAINT employee_account FOREIGN KEY (id)
        REFERENCES account (id),
    CONSTRAINT employee_insurance FOREIGN KEY (insurance_plan)
```

```
REFERENCES insurance_plan (name),
CONSTRAINT employee_role FOREIGN KEY (role)
REFERENCES role (name)
);

/* Gold, Premium, Silver, ... */
CREATE TABLE contract_type (
  name VARCHAR(32) PRIMARY KEY NOT NULL
);

CREATE TABLE line_of_business (
  name VARCHAR(32) PRIMARY KEY NOT NULL
);

/* Think he means Cloud, On-Prem */
CREATE TABLE platform (
  name VARCHAR(32) PRIMARY KEY NOT NULL
);

CREATE TABLE city (
  city VARCHAR(16) NOT NULL,
  province ENUM('BC','AB','SK','MB','ON','QC',
               'NB','NS','PE','DD','NL','YT','NT','NU') NOT NULL,
  PRIMARY KEY (city, province)
);

-- CLIENTS --
/** Clients sign up for contracts, here we store their details */
CREATE TABLE client (
  id INTEGER PRIMARY KEY NOT NULL AUTO_INCREMENT,
  client_rep INTEGER NOT NULL, /** This is the account # */
  company_name TEXT NOT NULL,
  address TEXT NOT NULL,
  city VARCHAR(16) NOT NULL,
  province ENUM('BC','AB','SK','MB','ON','QC',
               'NB','NS','PE','DD','NL','YT','NT','NU') NOT NULL,
  postal_code CHAR(7) NOT NULL,
  CONSTRAINT FOREIGN KEY (client_rep)
    REFERENCES account (id),
  CONSTRAINT FOREIGN KEY (city, province)
    REFERENCES city (city, province)
);

-- CONTRACTS --
```

```
CREATE TABLE contract (  
    id INTEGER PRIMARY KEY NOT NULL AUTO_INCREMENT,  
    client INTEGER NOT NULL,  
    line_of_business VARCHAR(32) NOT NULL,  
    contract_type VARCHAR(32) NOT NULL,  
    platform VARCHAR(32) NOT NULL,  
    manager INTEGER NOT NULL,  
    start_date DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP,  
    end_date DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP,  
    satisfaction_score INTEGER NOT NULL,  
    CONSTRAINT contract_client FOREIGN KEY (client)  
        REFERENCES client (id),  
    CONSTRAINT contract_lob FOREIGN KEY (line_of_business)  
        REFERENCES line_of_business (name),  
    CONSTRAINT contract_ctype FOREIGN KEY (contract_type)  
        REFERENCES contract_type (name),  
    CONSTRAINT contract_platform FOREIGN KEY (platform)  
        REFERENCES platform (name),  
    CONSTRAINT contract_manager FOREIGN KEY (manager)  
        REFERENCES employee (id)  
);
```

*/** Indicates what employees want to work on (why does this company let them choose) **

```
CREATE TABLE work_choice (  
    employee INTEGER NOT NULL,  
    contract_type VARCHAR(32) NOT NULL,  
    platform VARCHAR(32) NOT NULL,  
    PRIMARY KEY (employee, contract_type, platform),  
    CONSTRAINT choice_employee FOREIGN KEY (employee)  
        REFERENCES employee (id),  
    CONSTRAINT choice_contract FOREIGN KEY (contract_type)  
        REFERENCES contract_type (name),  
    CONSTRAINT choice_platform FOREIGN KEY (platform)  
        REFERENCES platform (name)  
);
```

```
CREATE TABLE sale_record (  
    contract INTEGER PRIMARY KEY NOT NULL AUTO_INCREMENT,  
    sales_associate INTEGER NOT NULL,  
    initial_value DECIMAL(8,2) NOT NULL,  
    annual_value DECIMAL(8,2) NOT NULL,  
    CONSTRAINT sale_contract FOREIGN KEY (contract)  
        REFERENCES contract (id),  
    CONSTRAINT sale_associate FOREIGN KEY (sales_associate)  
        REFERENCES employee (id)
```

```
);

CREATE TABLE deliverable_standard (
    contract_type VARCHAR(32) NOT NULL,
    deliverable VARCHAR(32) NOT NULL,
    due_after INTEGER NOT NULL,
    PRIMARY KEY (contract_type, deliverable),
    CONSTRAINT deliverable_contract_type FOREIGN KEY (contract_type)
        REFERENCES contract_type (name)
);

/** Used by employees to track hours */
CREATE TABLE contract_assignment (
    contract INTEGER NOT NULL,
    employee INTEGER NOT NULL,
    hours_worked INTEGER NOT NULL DEFAULT 0,
    PRIMARY KEY (contract, employee),
    FOREIGN KEY (contract) REFERENCES contract (id),
    FOREIGN KEY (employee) REFERENCES employee (id)
);

/** Used to determine if deliverables are on time */
CREATE TABLE deliverable_log (
    contract INTEGER NOT NULL,
    deliverable VARCHAR(32) NOT NULL,
    completed_date DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP,
    PRIMARY KEY (contract, deliverable) -- ,
    -- CONSTRAINT FOREIGN KEY (deliverable)
    -- REFERENCES deliverable_standard (deliverable)
);

SET FOREIGN_KEY_CHECKS=1;
```

Account

Primary Key: (ID)

Candidate Keys: (ID), (email), (first, middle, last)

Dependencies: (ID) → (first, middle, last) → email, phone

Account Login

Primary Key: (ID)

Candidate Keys: (ID), (username)

Dependencies: (ID) → (username) → password

Role

Primary Key: (name)

Candidate Keys: (name)

Dependencies: (name)

Employee

Primary Key: (ID)

Candidate Keys: (ID)

Dependencies: ID → Insurance Plan, Role, Weekly Hours

Contract Type

Primary Key: (name)

Candidate Keys: (name)

Dependencies: (name)

Line of Business

Primary Key: (name)

Candidate Keys: (name)

Dependencies: (name)

Platform

Primary Key: (name)

Candidate Keys: (name)

Dependencies: (name)

City

Primary Key: (city, province)

Candidate Keys: (city, province)

Dependencies: (city, province)

Client

Primary Key: (ID)

Candidate Keys: (ID), (Client Representative, Company Name)

Dependencies: (ID) → (Client Representative, Company Name) → address → City, Province, Postal Code

Contract

Primary Key: (ID)

Candidate Keys: (ID), (Client, Contract Type)

Dependencies: (ID) → (Client, Contract Type) → ID, Client, Contract Type, Line of Business, Platform, Manager, Start Date, End Date, Satisfaction Score

Work Choice

Primary Key: (Employee, Contract Type, Platform)

Candidate Keys: (Employee, Contract Type, Platform)

Dependencies: (Employee, Contract Type, Platform)

Sale Record

Primary Key: (Contract)

Candidate Keys: (Contract)

Dependencies: (Contract) → Sales Associate, Initial Value, Annual Value

Deliverable Standard

Primary Key: (Contract Type, Deliverable)

Candidate Keys: (Contract Type, Deliverable)

Dependencies: (Contract, Deliverable) → Due After

Contract Assignment

Primary Key: (Contract, Employee)

Candidate Keys: (Contract, Employee)

Dependencies: (Contract, Employee) → Hours Worked

Deliverable Log

Primary Key: (Contract Type, Deliverable)

Candidate Keys: (Contract Type, Deliverable)

Dependencies: (Contract, Deliverable) → Completed Date