COMP-353

Main Project

Submitted to

Prof. Khaled Jababo

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By

Jake Zhu 40045189

Jean-Michel Laliberté 27765835

John Hua 27056958

Nicholas Păun 40102738

Zhaolin Liu 40015392

Concordia University

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**Assumptions**

1. Each employee has, or is part of one of each of the following: account, sales record, work choice, line of business, insurance plan, role type, city and province.

2. Both employees and clients can have an account within the system.

3. All the clients are from Canada.

4. All monetary values are in CAD with max two decimal places.

5. An employee can manage multiple contracts.

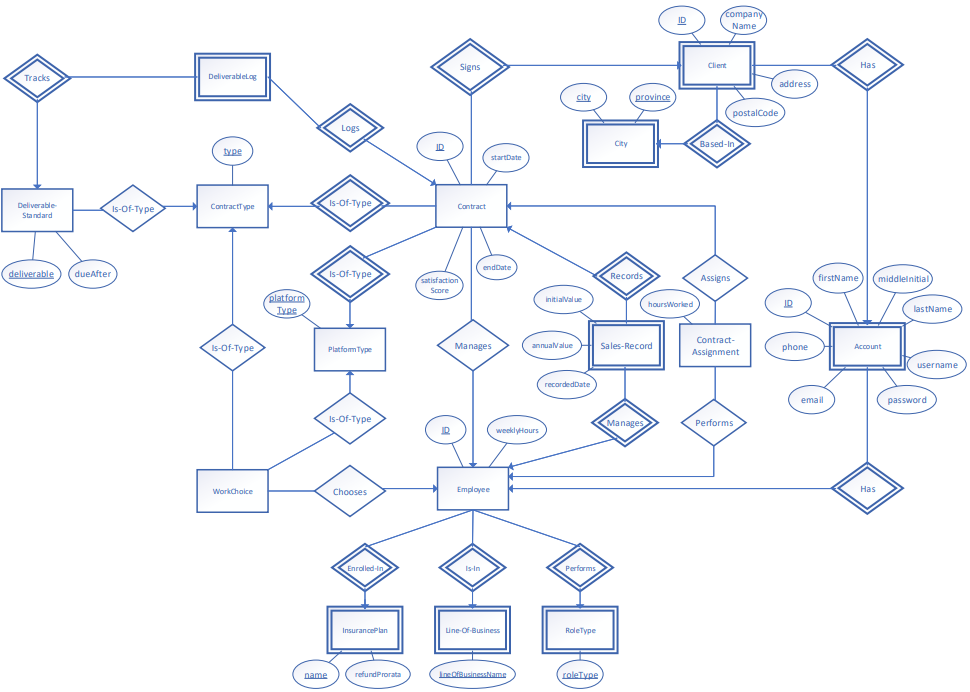
6. A client can hold multiple contracts.

7. Each contract is assigned to a single employee and client at a time.

8. Contracts are categorized into two different types: by platform, and by grade (silver, gold, etc.)

9. There may be multiple contracts of the same grade and platform.

**ER Diagram**



**DDL Codes**

-- MySQL Script generated by MySQL Workbench  
-- Tue Aug 7 17:01:12 2018  
-- Model: New Model Version: 1.0  
-- MySQL Workbench Forward Engineering  
  
SET @OLD\_UNIQUE\_CHECKS=@@UNIQUE\_CHECKS, UNIQUE\_CHECKS=0;  
SET @OLD\_FOREIGN\_KEY\_CHECKS=@@FOREIGN\_KEY\_CHECKS, FOREIGN\_KEY\_CHECKS=0;  
SET @OLD\_SQL\_MODE=@@SQL\_MODE, SQL\_MODE='TRADITIONAL,ALLOW\_INVALID\_DATES';  
  
-- -----------------------------------------------------  
-- Schema ycc353\_1  
-- -----------------------------------------------------  
CREATE SCHEMA IF NOT EXISTS `ycc353\_1` DEFAULT CHARACTER SET utf8 ;  
USE `ycc353\_1` ;  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`LineOfBusiness`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`LineOfBusiness` (  
 `lineOfBusinessName` VARCHAR(45) NOT NULL,  
 PRIMARY KEY (`lineOfBusinessName`))  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`InsurancePlan`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`InsurancePlan` (  
 `name` VARCHAR(45) NOT NULL,  
 `refundProrata` DECIMAL(5,2) NULL,  
 PRIMARY KEY (`name`))  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`RoleType`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`RoleType` (  
 `roleType` VARCHAR(45) NOT NULL COMMENT ' Sales associate, Manager, employee, Admin ',  
 PRIMARY KEY (`roleType`))  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`Account`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`Account` (  
 `id` INT NOT NULL AUTO\_INCREMENT,  
 `username` VARCHAR(45) NULL,  
 `password` VARCHAR(255) NULL,  
 `email` VARCHAR(45) NULL,  
 `phone` VARCHAR(45) NULL,  
 `firstName` VARCHAR(45) NULL,  
 `middleInitial` CHAR(1) NULL,  
 `lastName` VARCHAR(45) NULL,  
 PRIMARY KEY (`id`),  
 UNIQUE INDEX `username\_UNIQUE` (`username` ASC))  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`City`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`City` (  
 `city` VARCHAR(45) NOT NULL,  
 `province` VARCHAR(45) NOT NULL,  
 PRIMARY KEY (`city`, `province`))  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`Employee`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`Employee` (  
 `id` INT NOT NULL AUTO\_INCREMENT,  
 `lineOfBusinessName` VARCHAR(45) NOT NULL,  
 `insurancePlanName` VARCHAR(45) NOT NULL,  
 `roleType` VARCHAR(45) NOT NULL,  
 `weeklyHours` DECIMAL(5,2) NULL,  
 `accountId` INT NOT NULL,  
 `city` VARCHAR(45) NOT NULL,  
 `province` VARCHAR(45) NOT NULL,  
 PRIMARY KEY (`id`),  
 INDEX `fk\_Employee\_Department1\_idx` (`lineOfBusinessName` ASC),  
 INDEX `fk\_Employee\_InsurancePlan1\_idx` (`insurancePlanName` ASC),  
 INDEX `fk\_Employee\_Role1\_idx` (`roleType` ASC),  
 INDEX `fk\_Employee\_Account1\_idx` (`accountId` ASC),  
 INDEX `fk\_Employee\_City1\_idx` (`city` ASC, `province` ASC),  
 CONSTRAINT `fk\_Employee\_Department1`  
 FOREIGN KEY (`lineOfBusinessName`)  
 REFERENCES `ycc353\_1`.`LineOfBusiness` (`lineOfBusinessName`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_Employee\_InsurancePlan1`  
 FOREIGN KEY (`insurancePlanName`)  
 REFERENCES `ycc353\_1`.`InsurancePlan` (`name`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_Employee\_Role1`  
 FOREIGN KEY (`roleType`)  
 REFERENCES `ycc353\_1`.`RoleType` (`roleType`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_Employee\_Account1`  
 FOREIGN KEY (`accountId`)  
 REFERENCES `ycc353\_1`.`Account` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_Employee\_City1`  
 FOREIGN KEY (`city` , `province`)  
 REFERENCES `ycc353\_1`.`City` (`city` , `province`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION)  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`ContractType`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`ContractType` (  
 `contractType` VARCHAR(45) NOT NULL,  
 PRIMARY KEY (`contractType`))  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`PlatformType`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`PlatformType` (  
 `platformType` VARCHAR(45) NOT NULL,  
 PRIMARY KEY (`platformType`))  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`Client`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`Client` (  
 `id` INT NOT NULL AUTO\_INCREMENT,  
 `companyName` VARCHAR(45) NULL,  
 `address` VARCHAR(45) NULL,  
 `postalCode` VARCHAR(45) NULL,  
 `accountId` INT NOT NULL,  
 `city` VARCHAR(45) NULL,  
 `province` VARCHAR(45) NULL,  
 PRIMARY KEY (`id`),  
 INDEX `fk\_Client\_Account1\_idx` (`accountId` ASC),  
 INDEX `fk\_Client\_City1\_idx` (`city` ASC, `province` ASC),  
 CONSTRAINT `fk\_Client\_Account1`  
 FOREIGN KEY (`accountId`)  
 REFERENCES `ycc353\_1`.`Account` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_Client\_City1`  
 FOREIGN KEY (`city` , `province`)  
 REFERENCES `ycc353\_1`.`City` (`city` , `province`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION)  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`Contract`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`Contract` (  
 `id` INT NOT NULL AUTO\_INCREMENT,  
 `contractType` VARCHAR(45) NOT NULL,  
 `managerId` INT NOT NULL,  
 `serviceStartDate` DATE NULL,  
 `serviceEndDate` DATE NULL,  
 `platformType` VARCHAR(45) NOT NULL,  
 `satisfactionScore` INT NULL,  
 `clientId` INT NOT NULL,  
 PRIMARY KEY (`id`),  
 INDEX `fk\_Contract\_ContractType\_idx` (`contractType` ASC),  
 INDEX `fk\_Contract\_Employee1\_idx` (`managerId` ASC),  
 INDEX `fk\_Contract\_ServiceType1\_idx` (`platformType` ASC),  
 INDEX `fk\_Contract\_Client1\_idx` (`clientId` ASC),  
 CONSTRAINT `fk\_Contract\_ContractType`  
 FOREIGN KEY (`contractType`)  
 REFERENCES `ycc353\_1`.`ContractType` (`contractType`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_Contract\_Employee1`  
 FOREIGN KEY (`managerId`)  
 REFERENCES `ycc353\_1`.`Employee` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_Contract\_ServiceType1`  
 FOREIGN KEY (`platformType`)  
 REFERENCES `ycc353\_1`.`PlatformType` (`platformType`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_Contract\_Client1`  
 FOREIGN KEY (`clientId`)  
 REFERENCES `ycc353\_1`.`Client` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION)  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`WorkChoice`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`WorkChoice` (  
 `employeeId` INT NOT NULL,  
 `contractType` VARCHAR(45) NOT NULL,  
 `platformType` VARCHAR(45) NOT NULL,  
 INDEX `fk\_WorkChoice\_Employee1\_idx` (`employeeId` ASC),  
 INDEX `fk\_WorkChoice\_ContractType1\_idx` (`contractType` ASC),  
 INDEX `fk\_WorkChoice\_ServiceType1\_idx` (`platformType` ASC),  
 PRIMARY KEY (`employeeId`, `platformType`, `contractType`),  
 CONSTRAINT `fk\_WorkChoice\_Employee1`  
 FOREIGN KEY (`employeeId`)  
 REFERENCES `ycc353\_1`.`Employee` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_WorkChoice\_ContractType1`  
 FOREIGN KEY (`contractType`)  
 REFERENCES `ycc353\_1`.`ContractType` (`contractType`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_WorkChoice\_ServiceType1`  
 FOREIGN KEY (`platformType`)  
 REFERENCES `ycc353\_1`.`PlatformType` (`platformType`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION)  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`SaleRecord`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`SaleRecord` (  
 `contractId` INT NOT NULL,  
 `employeeId` INT NOT NULL,  
 `initialValue` DECIMAL(10,2) NULL,  
 `annualValue` DECIMAL(10,2) NULL,  
 `recordedDate` DATE NULL,  
 INDEX `fk\_SaleRecord\_Contract1\_idx` (`contractId` ASC),  
 INDEX `fk\_SaleRecord\_Employee1\_idx` (`employeeId` ASC),  
 PRIMARY KEY (`contractId`),  
 CONSTRAINT `fk\_SaleRecord\_Contract1`  
 FOREIGN KEY (`contractId`)  
 REFERENCES `ycc353\_1`.`Contract` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_SaleRecord\_Employee1`  
 FOREIGN KEY (`employeeId`)  
 REFERENCES `ycc353\_1`.`Employee` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION)  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`DeliverableStandard`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`DeliverableStandard` (  
 `contractType` VARCHAR(45) NOT NULL,  
 `deliverable` VARCHAR(45) NOT NULL,  
 `dueAfter` INT NULL,  
 INDEX `fk\_DeliverableStandard\_ContractType1\_idx` (`contractType` ASC),  
 PRIMARY KEY (`contractType`, `deliverable`),  
 CONSTRAINT `fk\_DeliverableStandard\_ContractType1`  
 FOREIGN KEY (`contractType`)  
 REFERENCES `ycc353\_1`.`ContractType` (`contractType`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION)  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`ContractAssignment`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`ContractAssignment` (  
 `contractId` INT NOT NULL,  
 `employeeId` INT NOT NULL,  
 `hoursWorked` DECIMAL(10,2) NULL,  
 PRIMARY KEY (`contractId`, `employeeId`),  
 INDEX `fk\_ContractAssignment\_Employee1\_idx` (`employeeId` ASC),  
 CONSTRAINT `fk\_ContractAssignment\_Contract1`  
 FOREIGN KEY (`contractId`)  
 REFERENCES `ycc353\_1`.`Contract` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_ContractAssignment\_Employee1`  
 FOREIGN KEY (`employeeId`)  
 REFERENCES `ycc353\_1`.`Employee` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION)  
ENGINE = InnoDB;  
  
  
-- -----------------------------------------------------  
-- Table `ycc353\_1`.`DeliverableLog`  
-- -----------------------------------------------------  
CREATE TABLE IF NOT EXISTS `ycc353\_1`.`DeliverableLog` (  
 `contractId` INT NOT NULL,  
 `contractType` VARCHAR(45) NOT NULL,  
 `deliverable` VARCHAR(45) NOT NULL,  
 INDEX `fk\_DeliverableLog\_Contract1\_idx` (`contractId` ASC),  
 INDEX `fk\_DeliverableLog\_DeliverableStandard1\_idx` (`contractType` ASC, `deliverable` ASC),  
 CONSTRAINT `fk\_DeliverableLog\_Contract1`  
 FOREIGN KEY (`contractId`)  
 REFERENCES `ycc353\_1`.`Contract` (`id`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION,  
 CONSTRAINT `fk\_DeliverableLog\_DeliverableStandard1`  
 FOREIGN KEY (`contractType` , `deliverable`)  
 REFERENCES `ycc353\_1`.`DeliverableStandard` (`contractType` , `deliverable`)  
 ON DELETE NO ACTION  
 ON UPDATE NO ACTION)  
ENGINE = InnoDB;  
  
  
SET SQL\_MODE=@OLD\_SQL\_MODE;  
SET FOREIGN\_KEY\_CHECKS=@OLD\_FOREIGN\_KEY\_CHECKS;  
SET UNIQUE\_CHECKS=@OLD\_UNIQUE\_CHECKS;

-- -----------------------------------------------------  
-- Data Insertions  
-- -----------------------------------------------------

INSERT INTO `ContractType` VALUES   
 ('Premium'),   
 ('Gold'),   
 ('Diamond'),   
 ('Silver');  
  
INSERT INTO `InsurancePlan` VALUES   
 ('Premium', 90),   
 ('Normal', 80),   
 ('Silver', 70);  
  
INSERT INTO `RoleType` VALUES   
 ('Associate'),  
 ('Manager'),  
 ('Employee'),  
 ('Admin');  
  
INSERT INTO `City` VALUES   
 ('Montreal', 'QC'),  
 ('Ottawa', 'ON'),  
 ('Toronto', 'ON'),  
 ('Winnipeg', 'MB'),  
 ('St-Hubert', 'QC'),  
 ('Calgary', 'AB'),  
 ('Edmonton', 'AB'),  
 ('Vancouver', 'BC'),  
 ('Bonaventure', 'QC'),  
 ('Becancour', 'QC'),  
 ('New Market', 'ON'),  
 ('Mississiauga', 'ON');  
  
INSERT INTO `LineOfBusiness` VALUES   
 ('Cloud Services'),   
 ('Development'),   
 ('Research'),   
 ('Business Development'),   
 ('Facilities Management');  
  
  
INSERT INTO `PlatformType` VALUES ('Cloud');  
INSERT INTO `PlatformType` VALUES ('On-Premises');  
  
  
  
INSERT INTO `Account` VALUES  
 (1, 'jamacdonald', 'PaSsWoRd',  
 'something@something.com', '111 111 1111', 'Jim','A', 'Macdonald'),  
 (2, 'sjharpeur', 'JeSuisLePremiereMinistre',   
 'con@con.com', '222 222 2222', 'Sam', 'J', 'Harpeur'),  
 (3, 'saclaus', 'ItsChristmas',  
 'christmas@northpole.com', '333 333 3333', 'Sophie', 'A', 'Claus'),  
 (4, 'djtrump', 'CnnFakeNews',  
 'fake@news.com', '444 444 4444', 'Dave', 'J', 'Trump'),  
 (5, 'abjacob', 'IAmCalculus',  
 'dublin@preclearance.com', '555 555 5555', 'Adam', 'B', 'Jacobian'),  
 (6, 'bbgratton', 'WhoDis',   
 'bob@bob.com', '666 666 6666', 'Bob', 'B', 'Gratton'),  
 (7, 'obcremazie', 'SurLaLigneOrange',  
 'metro@mtl.com', '777 777 7777', 'Octave', 'B', 'Cremazie'),  
 (8, 'jcchretien', 'AProofIsAProof',  
 'miserable@jail.com', '888 888 8888', 'Jean', 'C', 'Chretien'),  
 (9, 'mtputin', 'NotRussia',   
 'russia@us.com', '999 999 9999', 'Mark', 'T', 'Putin'),  
 (10, 'danot', 'MehToday',   
 'work3@study.com', '666 666 6666', 'Done', 'A', 'Not'),  
 (11, 'sbmacdonald', 'PMWannaBe',   
 'something@something2.com', '111 111 1111', 'Sean','B', 'MacDonald'),  
 (12, 'sdtrudeau', 'LibEqualsPCs',  
 'con@progressive.com', '222 222 2222', 'Smith', 'D', 'Trudeau'),  
 (13, 'sapoutine', 'PoutineIsJustFries',   
 'poutine@quebec.com', '333 333 3333', 'Sen', 'A', 'Poutine'),  
 (14, 'dpdavis', 'CircuitsRule',   
 'ece@everything.com', '444 444 4444', 'Don', 'P', 'Davis'),  
 (15, 'abskywalker', 'DarthVader',   
 'starwars@galaxy.com', '555 555 5555', 'Anakin', 'B', 'Skywalker'),  
 (16, 'sbtremblay', 'SomeoneHere',  
 'tby@bob.com', '666 666 6666', 'Sophie', 'B', 'Tremblay'),  
 (17, 'jblayton', 'BestPMNeverHad',  
 'jblayton@mtl.com', '777 777 7777', 'Jack', 'B', 'Layton'),  
 (18, 'jdcharest', 'BothPCandLiberal',  
 'miserable@jail.com', '888 888 8888', 'Jean', 'D', 'Charest'),  
 (19, 'ptjennings', 'TorontoAmericanJournalist',  
 'ptjennings@abc.com', '999 999 9999', 'Peter', 'T', 'Jennings'),  
 (20, 'danot', 'workingHard',   
 'work@study.com', '666 666 6666', 'Done', 'A', 'Not');  
 -- (21, 'Jim','A', 'Macdonald', 'something@something.com', '111 111 1111'),  
 -- (22, 'Sam', 'J', 'Harpeur', 'con@con.com', '222 222 2222'),  
 -- (23, 'Sophie', 'A', 'Claus', 'christmas@northpole.com', '333 333 3333'),  
 -- (24, 'Dave', 'J', 'Trump', 'fake@news.com', '444 444 4444'),  
 -- (25, 'Adam', 'B', 'John', 'dublin@preclearance.com', '555 555 5555'),  
 -- (26, 'Bob', 'B', 'Gratton', 'bob@bob.com', '666 666 6666'),  
 -- (27, 'Octave', 'B', 'Cremazie', 'metro@mtl.com', '777 777 7777'),  
 -- (28, 'Jean', 'V', 'Jean', 'miserable@jail.com', '888 888 8888'),  
 -- (29, 'Mark', 'T', 'Putin', 'russia@us.com', '999 999 9999'),  
 -- (30, 'Done', 'A', 'Not', 'work@study.com', '666 666 6666'),  
 -- (31, 'Sean','B', 'MacDonald', 'something@something2.com', '111 111 1111'),  
 -- (32, 'Smith', 'D', 'Trudeau', 'con@progressive.com', '222 222 2222'),  
 -- (33, 'Sen', 'A', 'Poutine', 'poutine@quebec.com', '333 333 3333'),  
 -- (34, 'Don', 'J', 'Trump', 'fakenews@everything.com', '444 444 4444'),  
 -- (35, 'Abe', 'B', 'Lincoln', 'dublin@preclearance.com', '555 555 5555'),  
 -- (36, 'Sophie', 'B', 'Tremblay', 'tby@bob.com', '666 666 6666'),  
 -- (37, 'Octave', 'B', 'Cremazie', 'metro@mtl.com', '777 777 7777'),  
 -- (38, 'Jean', 'V', 'Jean', 'miserable@jail.com', '888 888 8888'),  
 -- (39, 'Meriem', 'T', 'Peter', 'russia@us.com', '999 999 9999'),  
 -- (40, 'Done', 'A', 'Not', 'work@study.com', '666 666 6666');  
  
INSERT INTO `Employee` VALUES  
 (101, 'Cloud Services', 'Premium', 'Associate', 10, 1, 'Montreal', 'QC'),  
 (102, 'Research', 'Silver', 'Manager', 30, 2, 'Montreal', 'QC'),  
 (103, 'Business Development', 'Premium', 'Admin', 60, 3, 'Toronto', 'ON'),  
 (104, 'Development', 'Normal', 'Admin', 20, 4, 'Edmonton', 'AB'),  
 (105, 'Research', 'Silver', 'Employee', 45, 5, 'Vancouver', 'BC'),  
 (106, 'Cloud Services', 'Normal', 'Associate', 36, 6, 'Winnipeg', 'MB'),  
 (107, 'Research', 'Silver', 'Manager', 45, 7, 'Montreal', 'QC'),  
 (108, 'Business Development', 'Premium', 'Employee', 40, 8, 'Toronto', 'ON'),  
 (109, 'Development', 'Normal', 'Admin', 45, 9, 'Edmonton', 'AB'),  
 (110, 'Research', 'Silver','Employee', 30, 5, 'Vancouver', 'BC');  
 -- (11, 'Premium', 'Manager', 20, 'MB'),  
 -- (12, 'Silver', 'Associate', 40, 'QC'),  
 -- (13, 'Normal', 'Manager', 15, 'ON'),  
 -- (14, 'Normal', 'Employee', 10, 'AB'),  
 -- (15, 'Normal', 'Admin', 18, 'BC'),  
 -- (16, 'Premium', 'Manager', 15, 'SK'),  
 -- (17, 'Normal', 'Manager', 7, 'BC'),  
 -- (18, 'Silver', 'Admin', 3, 'AB'),  
 -- (19, 'Premium', 'Employee', 7, 'BC'),  
 -- (20, 'Normal', 'Employee', 8, 'SK');  
  
INSERT INTO `Client` VALUES  
 (51, 'Coca-Cola', '123 Fake St', 'E4W 2I6', 11, 'Ottawa', 'ON'),  
 (52, 'Pepsi', '1600 Maisonneuve', 'H2X 2H2', 12, 'Montreal', 'QC'),  
 (53, 'St-Hubert', '456 St-Catherine', 'E4W 2I6', 13, 'St-Hubert', 'QC'),  
 (54, 'Nike', '1600 Maisonneuve', 'H2X 2H2', 14, 'Edmonton', 'AB'),  
 (55, 'YVR', '3211 Grant McConachie Way', 'E4W 2I6', 15, 'Vancouver', 'BC'),  
 (56, 'Adidas', '3400 McTavish', 'H2X 2H2', 16, 'Toronto', 'ON'),  
 (57, 'Trump Inc', '1600 Pennsylvania', 'A4W 2I6', 17, 'Winnipeg', 'MB'),  
 (58, 'CO2', '2456 Oxygen', 'H2X 2H2', 18, 'Montreal', 'QC'),  
 (59, 'US Preclearance', '2000 Airport Rd NE', 'T2E 6W5', 19, 'Calgary', 'AB'),  
 (60, 'WeThePeople', '234 rue Berri', 'H2X 2H2', 20, 'Montreal', 'QC');  
 -- (60, 31, 'C++ Inc', '123 Fake St', 'Ottawa', 'ON', 'E4W 2I6');  
 -- (61, 32, 'RailVision', '4224 POWDERHORN CRES.', 'Mississiauga', 'ON', 'L5L 3B9'),  
 -- (62, 33, 'Go Transit', '1600 Maisonneuve', 'Montreal', 'QC', 'H2X 2H2'),  
 -- (63, 34, 'AMT', '3628 Avenue de Port-Royal', 'Bonaventure', 'QC', 'G0C 1E0'),  
 -- (64, 35, 'RTM', '4143 Cote Joyeuse', 'Becancour', 'QC', 'H0H 0H0'),  
 -- (65, 36, 'exo', '3101 Davis Drive', 'New Market', 'ON', 'L3Y 4W2'),  
 -- (66, 37, 'STM', '12789 Adelaide St', 'Toronto', 'ON', 'M5H 1P6'),  
 -- (67, 38, 'STL', '1600 Maisonneuve', 'Montreal', 'QC', 'H2X 2H2'),  
 -- (68, 39, 'RTL', '2100 Maisonneuve O', 'Montreal', 'QC', 'H3H 1K6'),  
 -- (69, 40, 'Air Transat', '300 Leo Pariseau', 'Montreal', 'QC', 'H2X 4C1');   
  
  
INSERT INTO `Contract` VALUES  
 (91, 'Premium', 102, '2018-07-31', '2019-01-01', 'Cloud', 7, 51),  
 (92, 'Gold', 102, '2017-06-28', '2017-02-14', 'On-Premises', 3, 52),  
 (93, 'Silver', 102, '2017-07-31', '2018-01-01', 'On-Premises', 9, 52),  
 (94, 'Diamond', 107, '2018-07-26', '2019-01-01', 'Cloud', 8, 58),  
 (95, 'Gold', 102, '2018-07-23', '2019-01-01', 'On-Premises', 9, 53),  
 (96, 'Silver', 107, '2018-07-31', '2019-01-01', 'Cloud', 8, 56),  
 (97, 'Gold', 102, '2017-06-28', '2017-02-14', 'On-Premises', 6, 57),  
 (98, 'Diamond', 107, '2017-07-31', '2018-01-01', 'Cloud', 9, 60),  
 (99, 'Diamond', 102, '2018-07-25', '2019-01-01', 'On-Premises', 8, 55),   
 (100, 'Silver', 107, '2018-07-28', '2019-01-01', 'Cloud', 8, 52);  
 -- (11, 60, 'Cloud Services', 'Gold', 'Cloud', 11, '2018-07-31', '2019-01-01', 2),  
 -- (12, 61, 'Research', 'Premium', 'Cloud', 12, '2017-06-28', '2017-02-14', 5),  
 -- (13, 62, 'Business Development', 'Premium', 'On-Premises', 13, '2017-07-31', '2018-01-01', 7),  
 -- (14, 63, 'Facilities Management', 'Premium', 'Cloud', 14, '2018-07-26', '2019-01-01', 8),  
 -- (15, 64, 'Cloud Services', 'Silver', 'On-Premises', 15, '2018-07-23', '2019-01-01', 8),  
 -- (16, 65, 'Business Development', 'Premium', 'On-Premises', 16, '2018-07-31', '2019-01-01', 2),  
 -- (17, 66, 'Cloud Services', 'Premium', 'On-Premises', 17, '2017-06-28', '2017-02-14', 5),  
 -- (18, 67, 'Facilities Management', 'Premium', 'Cloud', 18, '2017-07-31', '2018-01-01', 7),  
 -- (19, 68, 'Research', 'Premium', 'On-Premises', 19, '2018-07-25', '2019-01-01', 8),   
 -- (20, 69, 'Development', 'Premium', 'On-Premises', 20, '2018-07-28', '2019-01-01', 8);  
  
  
INSERT INTO `WorkChoice` VALUES  
 (101, 'Silver', 'Cloud'),  
 (101, 'Diamond', 'On-Premises'),  
 (102, 'Gold', 'Cloud'),  
 (104, 'Diamond', 'Cloud'),  
 (105, 'Gold', 'On-Premises'),  
 (106, 'Premium', 'Cloud'),  
 (106, 'Premium', 'On-Premises'),  
 (107, 'Gold', 'Cloud'),  
 (108, 'Diamond', 'On-Premises'),  
 (109, 'Gold', 'Cloud');  
  
INSERT INTO `SaleRecord` VALUES  
(94, 106, '500.20', '12345.45', '2018-08-06'),  
(95, 101, '50.00', '20324.56', '2018-05-14'),  
(96, 104, '100.00', '1000000.00', '2018-08-05'),  
(93, 101, '21.00', '40290.71', '2016-09-13'),  
(98, 104, '72.00', '4204.20', '2017-11-21'),  
(92, 101, '100.00', '2695.20', '2016-01-12'),  
(97, 101, '21.00', '9023843.23', '2001-09-11'),  
(96, 104, '1232.00', '99999999.99', '2000-11-03'),  
(99, 101, '78.00', '862131.00', '2017-10-30'),  
(100, 106, '12.00', '344327.30', '1999-12-31');  
  
INSERT INTO `ContractAssignment` VALUES  
 (91, 106, '21.67'),  
 (92, 109, '51.25'),  
 (94, 108, '45.00'),  
 (95, 101, '23.00'),  
 (95, 104, '27.80'),  
 (95, 106, '14.25'),  
 (96, 106, '42.75'),  
 (96, 108, '13.00'),  
 (96, 110, '25.00'),  
 (97, 101, '36.50');

-- -----------------------------------------------------  
-- Requirements  
-- -----------------------------------------------------

-- 1 --  
INSERT INTO `Account` ($id, $username, $password,  
 $email, $phone,  
 $first\_name, $middle\_initial, $last\_name  
 );  
INSERT INTO `Client` ($id, $company\_name, $address,  
 $postal\_code, $account\_ID, $city, $province);

-- 2 --  
SELECT \* FROM `City`;

-- 3 --  
SELECT `firstName`, `middleInitial`, `lastName`   
FROM `Account` JOIN `Employee` JOIN `Contract`  
ON `Contract`.`managerID` = `Account`.`id`  
AND contract.id = $id;

-- 4 --  
UPDATE `WorkChoice`  
SET `contractType` = $contract\_type  
AND `platformType` = $platform  
WHERE `employeeId` = $id;

-- 5 NEED TO DO REPORT --

-- 6 --  
SELECT \* FROM `Contract`  
WHERE `Contract`.`clientId` = $id;

-- 7 --  
SELECT `hoursWorked`,`employeeId`  
FROM `ContractAssignment`  
WHERE `contractId` = $contractId

-- 8 --  
DELETE FROM `ContractAssignment`  
WHERE `employeeId` = $employeeId;

-- 9 --  
UPDATE `Contract`  
SET `Contract`.`satisfactionScore` = score  
WHERE `id` = $id;

-- 10 --  
CREATE VIEW Manager\_Score AS  
SELECT `satisfactionScore`  
FROM `Contract`  
WHERE `managerId` = $id;  
  
SELECT \* FROM Manager\_Score;

-- 11 --  
UPDATE `Contract`  
SET `clientId` = $client  
AND `contractType` = $contract\_type  
AND `platformType` = $platform  
AND `managerId` = $manager  
AND `serviceStartDate` = $start\_date  
AND `serviceEtartDate` = $end\_date  
AND `satisfactionScore` = $satisfaction\_score   
WHERE `id` = $id;

-- 12 --  
DELETE FROM `Contract`  
WHERE `id` = $id;

**3NF Proof**

**Account**

Primary Key: (ID)

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

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

**Role**

Primary Key: (name)

Candidate Keys: (name)

Dependencies: (name)

**Employee**

Primary Key: (ID)

Candidate Keys: (ID)

Dependencies: ID → Insurance Plan, Line of Business, Role, Weekly Hours, Account ID, City, Province

**Contract Type**

Primary Key: (contractType)

Candidate Keys: (contractType)

Dependencies: (contractType)

**Line of Business**

Primary Key: (lineOfBusinessName)

Candidate Keys: (lineOfBusinessName)

Dependencies: (lineOfBusinessName)

**Platform**

Primary Key: (platformType)

Candidate Keys: (platformType)

Dependencies: (platformType)

**City**

Primary Key: (city, province)

Candidate Keys: (city, province)

Dependencies: (city, province)

**Client**

Primary Key: (ID)

Candidate Keys: (ID), (Account ID, Company Name)

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

**Contract**

Primary Key: (ID)

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

Dependencies: (ID) → (Client, Contract Type) → platformType, Manager ID, Start Date, End Date, Satisfaction Score

**Work Choice**

Primary Key: (employeeId, Contract Type, Platform)

Candidate Keys: (employeeId, Contract Type, Platform)

Dependencies: (employeeId, Contract Type, Platform)

**Sale Record**

Primary Key: (Contract)

Candidate Keys: (Contract)

Dependencies: (Contract) → employeeId, Initial Value, Annual Value, recordedDate

**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

**User Interface**

**Sample Session**

**Contributions**

|  |  |
| --- | --- |
| **Member** | **Task** |
| Jake Zhu | DDL codes, 3NF proof |
| Jean-Michel Laliberté | Backend, Frontend |
| John Hua | ER diagram, project report |
| Nicholas Paun | Backend, schema |
| Zhaolin Liu | Backend, project report |