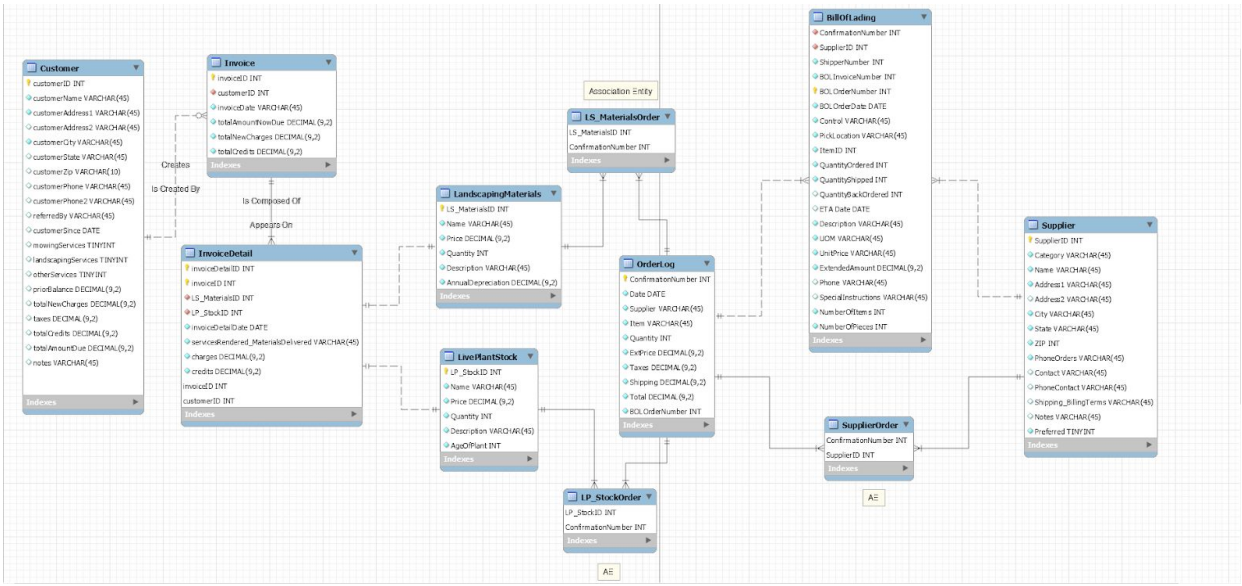
Jacob Christiansen - CSCI 3287 - Homework 4
Worked with Brian Jackman and Willie Chew

Part One: Data Model



Generated DDL

-- MySQL Script generated by MySQL Workbench
-- Sun Nov 3 18:41:12 2019
-- 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='ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION';

-- ---
-- Schema mydb
-- ---

-- ---
-- Schema mydb
-- ---

```
CREATE SCHEMA IF NOT EXISTS `mydb` DEFAULT CHARACTER SET utf8 ;
USE `mydb` ;

-- -----------------------------------------------------
-- Table `mydb`.`Customer`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`Customer` ;

CREATE TABLE IF NOT EXISTS `mydb`.`Customer` (
  `customerID` INT NOT NULL AUTO_INCREMENT,
  `customerName` VARCHAR(45) NOT NULL,
  `customerAddress1` VARCHAR(45) NOT NULL,
  `customerAddress2` VARCHAR(45) NULL,
  `customerCity` VARCHAR(45) NOT NULL,
  `customerState` VARCHAR(45) NULL,
  `customerZip` VARCHAR(10) NULL,
  `customerPhone` VARCHAR(45) NULL,
  `customerPhone2` VARCHAR(45) NULL,
  `referredBy` VARCHAR(45) NULL,
  `customerSince` DATE NULL,
  `mowingServices` TINYINT NULL,
  `landscapingServices` TINYINT NULL,
  `otherServices` TINYINT NULL,
  `priorBalance` DECIMAL(9,2) NULL,
  `totalNewCharges` DECIMAL(9,2) NULL,
  `taxes` DECIMAL(9,2) NULL,
  `totalCredits` DECIMAL(9,2) NULL,
  `totalAmountDue` DECIMAL(9,2) NULL,
  `notes` VARCHAR(45) NULL,
  PRIMARY KEY (`customerID`))
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `mydb`.`Invoice`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`Invoice` ;

CREATE TABLE IF NOT EXISTS `mydb`.`Invoice` (
  `invoiceID` INT NOT NULL AUTO_INCREMENT,
  `customerID` INT NOT NULL,
  `invoiceDate` VARCHAR(45) NOT NULL,
  `totalAmountNowDue` DECIMAL(9,2) NOT NULL,
```

```
  `totalNewCharges` DECIMAL(9,2) NOT NULL,
  `totalCredits` DECIMAL(9,2) NOT NULL,
  PRIMARY KEY (`invoiceID`),
  CONSTRAINT `fk_Invoice_Customer`
    FOREIGN KEY (`customerID`)
    REFERENCES `mydb`.`Customer` (`customerID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

CREATE INDEX `fk_Invoice_Customer_idx` ON `mydb`.`Invoice` (`customerID` ASC) VISIBLE;


-- -----------------------------------------------------
-- Table `mydb`.`LandscapingMaterials`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`LandscapingMaterials` ;

CREATE TABLE IF NOT EXISTS `mydb`.`LandscapingMaterials` (
  `LS_MaterialsID` INT NOT NULL,
  `Name` VARCHAR(45) NOT NULL,
  `Price` DECIMAL(9,2) NOT NULL,
  `Quantity` INT NOT NULL,
  `Description` VARCHAR(45) NOT NULL,
  `AnnualDepreciation` DECIMAL(9,2) NOT NULL,
  PRIMARY KEY (`LS_MaterialsID`))
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `mydb`.`LivePlantStock`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`LivePlantStock` ;

CREATE TABLE IF NOT EXISTS `mydb`.`LivePlantStock` (
  `LP_StockID` INT NOT NULL,
  `Name` VARCHAR(45) NOT NULL,
  `Price` DECIMAL(9,2) NOT NULL,
  `Quantity` INT NOT NULL,
  `Description` VARCHAR(45) NOT NULL,
  `AgeOfPlant` INT NOT NULL,
  PRIMARY KEY (`LP_StockID`))
ENGINE = InnoDB;
```

```
-- -----------------------------------------------------
-- Table `mydb`.`InvoiceDetail`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`InvoiceDetail` ;

CREATE TABLE IF NOT EXISTS `mydb`.`InvoiceDetail` (
  `invoiceDetailID` INT NOT NULL AUTO_INCREMENT,
  `invoiceID` INT NOT NULL,
  `LS_MaterialsID` INT NOT NULL,
  `LP_StockID` INT NOT NULL,
  `invoiceDetailDate` DATE NOT NULL,
  `servicesRendered_MaterialsDelivered` VARCHAR(45) NOT NULL,
  `charges` DECIMAL(9,2) NOT NULL,
  `credits` DECIMAL(9,2) NOT NULL,
  `invoiceID` INT NOT NULL,
  `customerID` INT NOT NULL,
  PRIMARY KEY (`invoiceDetailID`, `invoiceID`, `invoiceID`, `customerID`),
  CONSTRAINT `fk_InvoiceDetail_Invoice1`
    FOREIGN KEY (`invoiceID` , `customerID`)
    REFERENCES `mydb`.`Invoice` (`invoiceID` , `customerID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_InvoiceDetail_Landscaping Materials1`
    FOREIGN KEY (`LS_MaterialsID`)
    REFERENCES `mydb`.`LandscapingMaterials` (`LS_MaterialsID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_InvoiceDetail_Live Plant Stock1`
    FOREIGN KEY (`LP_StockID`)
    REFERENCES `mydb`.`LivePlantStock` (`LP_StockID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

CREATE INDEX `fk_InvoiceDetail_Invoice1_idx` ON `mydb`.`InvoiceDetail` (`invoiceID` ASC,
`customerID` ASC) VISIBLE;

CREATE INDEX `fk_InvoiceDetail_Landscaping Materials1_idx` ON `mydb`.`InvoiceDetail`
(`LS_MaterialsID` ASC) VISIBLE;
```

```
CREATE INDEX `fk_InvoiceDetail_Live Plant Stock1_idx` ON `mydb`.`InvoiceDetail`
(`LP_StockID` ASC) VISIBLE;


-- -----------------------------------------------------
-- Table `mydb`.`OrderLog`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`OrderLog` ;

CREATE TABLE IF NOT EXISTS `mydb`.`OrderLog` (
  `ConfirmationNumber` INT NOT NULL,
  `Date` DATE NOT NULL,
  `Supplier` VARCHAR(45) NOT NULL,
  `Item` VARCHAR(45) NOT NULL,
  `Quantity` INT NOT NULL,
  `ExtPrice` DECIMAL(9,2) NOT NULL,
  `Taxes` DECIMAL(9,2) NOT NULL,
  `Shipping` DECIMAL(9,2) NOT NULL,
  `Total` DECIMAL(9,2) NOT NULL,
  `BOLOrderNumber` INT NOT NULL,
  PRIMARY KEY (`ConfirmationNumber`))
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `mydb`.`LP_StockOrder`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`LP_StockOrder` ;

CREATE TABLE IF NOT EXISTS `mydb`.`LP_StockOrder` (
  `LP_StockID` INT NOT NULL,
  `ConfirmationNumber` INT NOT NULL,
  PRIMARY KEY (`LP_StockID`, `ConfirmationNumber`),
  CONSTRAINT `fk_LP_StockOrders_LivePlantStock1`
    FOREIGN KEY (`LP_StockID`)
    REFERENCES `mydb`.`LivePlantStock` (`LP_StockID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_LP_StockOrders_OrderLog1`
    FOREIGN KEY (`ConfirmationNumber`)
    REFERENCES `mydb`.`OrderLog` (`ConfirmationNumber`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
```

```
ENGINE = InnoDB;

CREATE INDEX `fk_LP_StockOrders_LivePlantStock1_idx` ON `mydb`.`LP_StockOrder`
(`LP_StockID` ASC) VISIBLE;

CREATE INDEX `fk_LP_StockOrders_OrderLog1_idx` ON `mydb`.`LP_StockOrder`
(`ConfirmationNumber` ASC) VISIBLE;


-- -----------------------------------------------------
-- Table `mydb`.`LS_MaterialsOrder`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`LS_MaterialsOrder` ;

CREATE TABLE IF NOT EXISTS `mydb`.`LS_MaterialsOrder` (
  `LS_MaterialsID` INT NOT NULL,
  `ConfirmationNumber` INT NOT NULL,
  PRIMARY KEY (`LS_MaterialsID`, `ConfirmationNumber`),
  CONSTRAINT `fk_LS_MaterialsOrder_LandscapingMaterials1`
    FOREIGN KEY (`LS_MaterialsID`)
    REFERENCES `mydb`.`LandscapingMaterials` (`LS_MaterialsID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_LS_MaterialsOrder_OrderLog1`
    FOREIGN KEY (`ConfirmationNumber`)
    REFERENCES `mydb`.`OrderLog` (`ConfirmationNumber`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

CREATE INDEX `fk_LS_MaterialsOrder_OrderLog1_idx` ON `mydb`.`LS_MaterialsOrder`
(`ConfirmationNumber` ASC) VISIBLE;


-- -----------------------------------------------------
-- Table `mydb`.`Supplier`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`Supplier` ;

CREATE TABLE IF NOT EXISTS `mydb`.`Supplier` (
  `SupplierID` INT NOT NULL AUTO_INCREMENT,
  `Category` VARCHAR(45) NOT NULL,
  `Name` VARCHAR(45) NOT NULL,
```

```
  `Address1` VARCHAR(45) NOT NULL,
  `Address2` VARCHAR(45) NULL,
  `City` VARCHAR(45) NOT NULL,
  `State` VARCHAR(45) NOT NULL,
  `ZIP` INT NOT NULL,
  `PhoneOrders` VARCHAR(45) NOT NULL,
  `Contact` VARCHAR(45) NULL,
  `PhoneContact` VARCHAR(45) NULL,
  `Shipping_BillingTerms` VARCHAR(45) NULL,
  `Notes` VARCHAR(45) NULL,
  `Preferred` TINYINT NOT NULL,
  PRIMARY KEY (`SupplierID`))
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `mydb`.`SupplierOrder`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `mydb`.`SupplierOrder` ;

CREATE TABLE IF NOT EXISTS `mydb`.`SupplierOrder` (
  `ConfirmationNumber` INT NOT NULL,
  `SupplierID` INT NOT NULL,
  PRIMARY KEY (`ConfirmationNumber`, `SupplierID`),
  CONSTRAINT `fk_SupplierOrder_OrderLog1`
    FOREIGN KEY (`ConfirmationNumber`)
    REFERENCES `mydb`.`OrderLog` (`ConfirmationNumber`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_SupplierOrder_Supplier1`
    FOREIGN KEY (`SupplierID`)
    REFERENCES `mydb`.`Supplier` (`SupplierID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

CREATE INDEX `fk_SupplierOrder_Supplier1_idx` ON `mydb`.`SupplierOrder` (`SupplierID`
ASC) VISIBLE;


-- -----------------------------------------------------
-- Table `mydb`.`BillOfLading`
-- -----------------------------------------------------
```

```
DROP TABLE IF EXISTS `mydb`.`BillOfLading` ;

CREATE TABLE IF NOT EXISTS `mydb`.`BillOfLading` (
  `ConfirmationNumber` INT NOT NULL,
  `SupplierID` INT NOT NULL,
  `ShipperNumber` INT NOT NULL,
  `BOLInvoiceNumber` INT NOT NULL,
  `BOLOrderNumber` INT NOT NULL,
  `BOLOrderDate` DATE NOT NULL,
  `Control` VARCHAR(45) NOT NULL,
  `PickLocation` VARCHAR(45) NOT NULL,
  `ItemID` INT NOT NULL,
  `QuantityOrdered` INT NOT NULL,
  `QuantityShipped` INT NOT NULL,
  `QuantityBackOrdered` INT NULL,
  `ETA Date` DATE NULL,
  `Description` VARCHAR(45) NOT NULL,
  `UOM` VARCHAR(45) NOT NULL,
  `UnitPrice` VARCHAR(45) NOT NULL,
  `ExtendedAmount` DECIMAL(9,2) NOT NULL,
  `Phone` VARCHAR(45) NULL,
  `SpecialInstructions` VARCHAR(45) NULL,
  `NumberOfItems` INT NOT NULL,
  `NumberOfPieces` INT NOT NULL,
  PRIMARY KEY (`BOLOrderNumber`),
  CONSTRAINT `fk_BillOfLading_Supplier1`
    FOREIGN KEY (`SupplierID`)
    REFERENCES `mydb`.`Supplier` (`SupplierID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_BillOfLading_OrderLog1`
    FOREIGN KEY (`ConfirmationNumber`)
    REFERENCES `mydb`.`OrderLog` (`ConfirmationNumber`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

CREATE INDEX `fk_BillOfLading_Supplier1_idx` ON `mydb`.`BillOfLading` (`SupplierID` ASC)
VISIBLE;

CREATE INDEX `fk_BillOfLading_OrderLog1_idx` ON `mydb`.`BillOfLading`
(`ConfirmationNumber` ASC) VISIBLE;
```

```
SET SQL_MODE=@OLD_SQL_MODE;
SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS;
SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS;
```

Assumptions

- Created Surrogate key for Customer, which was customerID, because there was no good existing primary key options. This uses auto-increment.
- Created Surrogate key for Invoice, which was invoiceID, because there was no good existing primary key options. This uses auto-increment.
- Created Surrogate key for InvoiceDetail, which was invoiceDetailID, because there was no good existing primary key options. This represents which line the invoice detail is on, on the invoice (line 1, line 2, line 3, etc). This uses auto-increment.
- Created Surrogate key for Supplier, which was SupplierID, because there was no good existing primary key options. This uses auto-increment.
- Used ConfNum (“ConfirmationNumber”) from OrderLog form as key in table (of the same name).
- Used OrderNo (“BOLOrderNumber”) from BillOfLading form as key in table (of the same name).
- Assuming a supplier will deliver ordered products.
- Assuming customers can have 0 invoices.