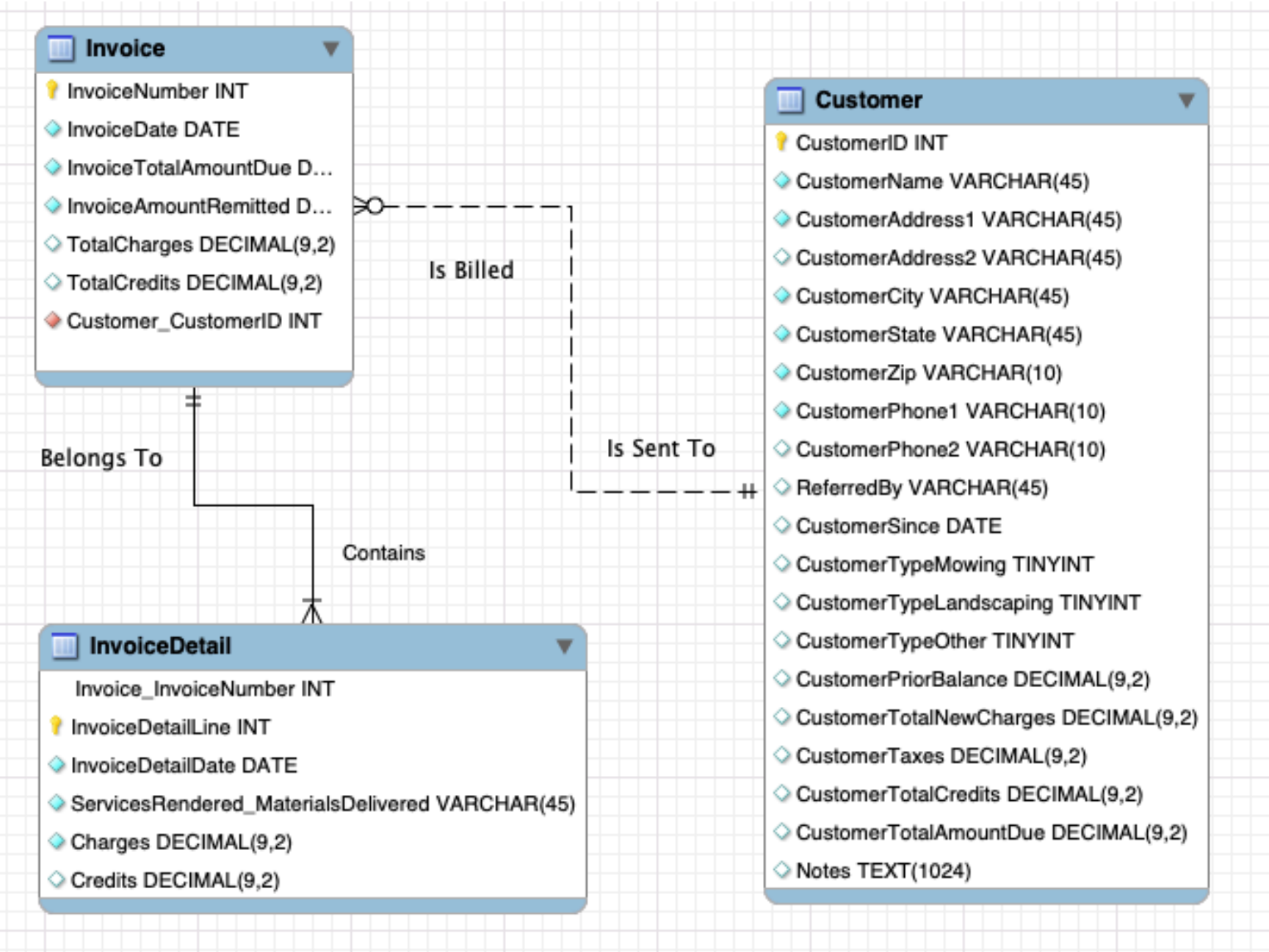
Criteria	Very effective	Effective	Ineffective
Data Model - Entities correct number of tables (3 minimum) Correct Number of relationships (2 minimum) with proper cardinality/optionality Follow attached example	All items appear as described: Customer table, Invoice table, Invoice Detail table (may be called Services/Materials) 30	Some items are correct, some are missing or incorrect. 29 - 9	Few items are correct, many are missing or incorrect.
Data Model – Relationships Correct Number of relationships (2 minimum) with proper cardinality/optionality Relationships have captions	All items appear as described: Customer to Invoice (one to many, optional) Invoice to InvoiceDetail (one to many, mandatory) Captions exist 20	Some items are correct, some are missing or incorrect. 19 - 9	Few items are correct, many are missing or incorrect. 9 - 0
Data Model – Keys Primary Keys Exist for 3 tables InvoiceNumber CustomerId InvoiceNumber+InvoiceDetailLine (names may vary) CustomerID exists in Invoice as Foreign Key	Primary Keys Exist for 3 tables InvoiceNumber CustomerId InvoiceNumber+InvoiceDetailLine (names may vary) InvoiceDetail key is concatenated CustomerID exists in Invoice as Foreign Key 16	Some items are correct, some are missing or incorrect. 16 - 6	Few items are correct, many are missing or incorrect. 6 - 0
DDL The DDL was generated by the tool. DDL contains CREATE for each table, each PK and the FK. Follow attached example	DDL is present for all CREATE TABLE statements, and DDL exists to define primary and foreign keys. (highlighted items in example are NOT needed and may be left out.) 10	DDL is present for some CREATE TABLE statements, and DDL exists to define some primary and foreign keys. 9 - 3	Most of the DDL is incorrect, keys missing 2-0

Format: Student followed instructions and formatted their deliverable as requested. Image of Data Model, text of DDL.	Image of data model is clear ad readable. Text for DDL is clear and readable. 4	Data model image and DDL text are there, but they are not easily readable. 3-2	Student did not follow formatting instructions. 1-0
TOTAL (out of 80):			


Invoice
InvoiceNumber INT
InvoiceDate DATE
InvoiceTotalAmountDue D...
InvoiceAmountRemitted D...
TotalCharges DECIMAL(9,2)
TotalCredits DECIMAL(9,2)
Customer_CustomerID INT
Is Billed
Belongs To
Is Sent To
Contains
Customer
CustomerID INT
CustomerName VARCHAR(45)
CustomerAddress1 VARCHAR(45)
CustomerAddress2 VARCHAR(45)
CustomerCity VARCHAR(45)
CustomerState VARCHAR(45)
CustomerZip VARCHAR(10)
CustomerPhone1 VARCHAR(10)
CustomerPhone2 VARCHAR(10)
ReferredBy VARCHAR(45)
CustomerSince DATE
CustomerTypeMowing TINYINT
CustomerTypeLandscaping TINYINT
CustomerTypeOther TINYINT
CustomerPriorBalance DECIMAL(9,2)
CustomerTotalNewCharges DECIMAL(9,2)
CustomerTaxes DECIMAL(9,2)
CustomerTotalCredits DECIMAL(9,2)
CustomerTotalAmountDue DECIMAL(9,2)
Notes TEXT(1024)
InvoiceDetail
Invoice_InvoiceNumber INT
InvoiceDetailLine INT
InvoiceDetailDate DATE
ServicesRendered_MaterialsDelivered VARCHAR(45)
Charges DECIMAL(9,2)
Credits DECIMAL(9,2)

```
-- MySQL Script generated by MySQL Workbench
-- Mon Feb 25 14:28:24 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='TRADITIONAL,ALLOW_INVALID_DATES';

-- -----------------------------------------------------
-- 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) NOT NULL,
  `CustomerZip` VARCHAR(10) NOT NULL,
  `CustomerPhone1` VARCHAR(10) NOT NULL,
  `CustomerPhone2` VARCHAR(10) NULL,
  `ReferredBy` VARCHAR(45) NULL,
  `CustomerSince` DATE NULL,
  `CustomerTypeMowing` TINYINT NULL,
  `CustomerTypeLandscaping` TINYINT NULL,
  `CustomerTypeOther` TINYINT NULL,
  `CustomerPriorBalance` DECIMAL(9,2) NULL,
  `CustomerTotalNewCharges` DECIMAL(9,2) NULL,
  `CustomerTaxes` DECIMAL(9,2) NULL,
  `CustomerTotalCredits` DECIMAL(9,2) NULL,
  `CustomerTotalAmountDue` DECIMAL(9,2) NULL,
```

```
  `Notes` TEXT(1024) NULL,
  PRIMARY KEY (`CustomerID`))
ENGINE = InnoDB;



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

CREATE TABLE IF NOT EXISTS `mydb`.`Invoice` (
  `InvoiceNumber` INT NOT NULL AUTO_INCREMENT,
  `InvoiceDate` DATE NOT NULL,
  `InvoiceTotalAmountDue` DECIMAL(9,2) NOT NULL,
  `InvoiceAmountRemitted` DECIMAL(9,2) NOT NULL,
  `TotalCharges` DECIMAL(9,2) NULL,
  `TotalCredits` DECIMAL(9,2) NULL,
  `Customer_CustomerID` INT NOT NULL,
  PRIMARY KEY (`InvoiceNumber`),
  INDEX `fk_Order_Customer_idx` (`Customer_CustomerID` ASC),
```

```
  CONSTRAINT `fk_Order_Customer`
    FOREIGN KEY (`Customer_CustomerID`)
    REFERENCES `mydb`.`Customer` (`CustomerID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;



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

CREATE TABLE IF NOT EXISTS `mydb`.`InvoiceDetail` (
  `     Invoice_InvoiceNumber` INT NOT NULL,
  `InvoiceDetailLine` INT NOT NULL,
  `InvoiceDetailDate` DATE NOT NULL,
  `ServicesRendered_MaterialsDelivered` VARCHAR(45) NOT NULL,
  `Charges` DECIMAL(9,2) NOT NULL,
  `Credits` DECIMAL(9,2) NULL,
```

```
  PRIMARY KEY (`     Invoice_InvoiceNumber`, `InvoiceDetailLine`),
  INDEX `fk_InvoiceDetail_Invoice1_idx` (`     Invoice_InvoiceNumber` ASC),
  CONSTRAINT `fk_InvoiceDetail_Invoice1`
    FOREIGN KEY (`     Invoice_InvoiceNumber`)
    REFERENCES `mydb`.`Invoice` (`InvoiceNumber`)
    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;
```