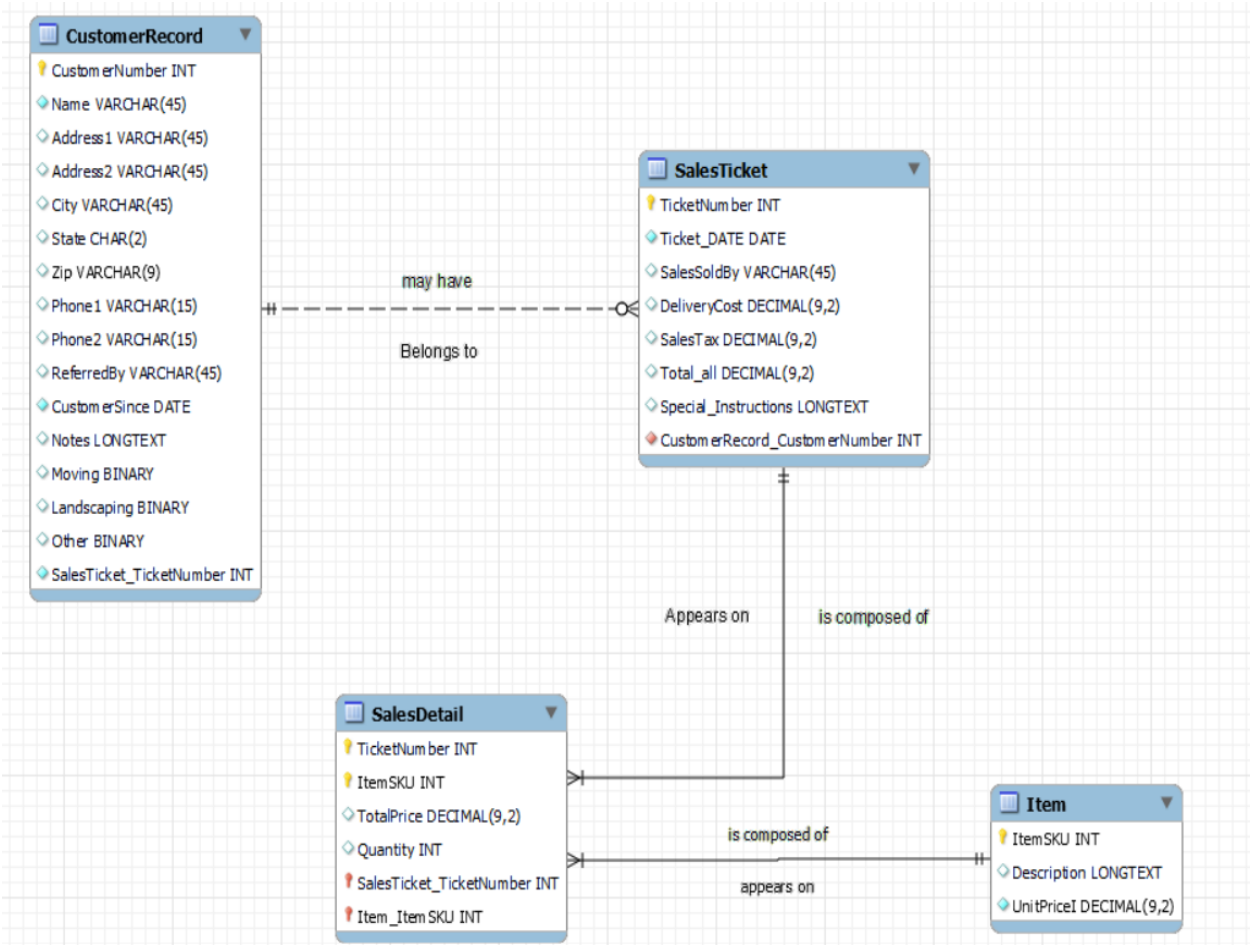
# 1. Data Model




# 2. DDL

```
-- MySQL Script generated by MySQL Workbench
-- Sat Feb 18 09:57:48 2023
-- 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_SUBST
ITUTION';

-- -----------------------------------------------------
-- Schema mydb
```

```
-- -----------------------------------------------------


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

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

CREATE TABLE IF NOT EXISTS `mydb`.`CustomerRecord` (
  `CustomerNumber` INT NOT NULL AUTO_INCREMENT,
  `Name` VARCHAR(45) NOT NULL,
  `Address1` VARCHAR(45) NULL,
  `Address2` VARCHAR(45) NULL,
  `City` VARCHAR(45) NULL,
  `State` CHAR(2) NULL,
  `Zip` VARCHAR(9) NULL,
  `Phone1` VARCHAR(15) NULL,
  `Phone2` VARCHAR(15) NULL,
  `ReferredBy` VARCHAR(45) NULL,
  `CustomerSince` DATE NOT NULL,
  `Notes` LONGTEXT NULL,
  `Moving` BINARY NULL,
  `Landscaping` BINARY NULL,
  `Other` BINARY NULL,
  `SalesTicket_TicketNumber` INT NOT NULL,
  PRIMARY KEY (`CustomerNumber`),
  UNIQUE INDEX `CustomerNumber_UNIQUE` (`CustomerNumber` ASC) VISIBLE)
ENGINE = InnoDB;


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

```
CREATE TABLE IF NOT EXISTS `mydb`.`SalesTicket` (
  `TicketNumber` INT NOT NULL,
  `Ticket_DATE` DATE NOT NULL,
  `SalesSoldBy` VARCHAR(45) NULL,
  `DeliveryCost` DECIMAL(9,2) NULL,
  `SalesTax` DECIMAL(9,2) NULL,
  `Total_all` DECIMAL(9,2) NULL,
  `Special_Instructions` LONGTEXT NULL,
  `CustomerRecord_CustomerNumber` INT NOT NULL,
  PRIMARY KEY (`TicketNumber`),
  INDEX `fk_SalesTicket_CustomerRecord_idx` (`CustomerRecord_CustomerNumber`
ASC) VISIBLE,
  CONSTRAINT `fk_SalesTicket_CustomerRecord`
    FOREIGN KEY (`CustomerRecord_CustomerNumber`)
    REFERENCES `mydb`.`CustomerRecord` (`CustomerNumber`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


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

CREATE TABLE IF NOT EXISTS `mydb`.`Item` (
  `ItemSKU` INT NOT NULL,
  `Description` LONGTEXT NULL,
  `UnitPriceI` DECIMAL(9,2) NOT NULL,
  PRIMARY KEY (`ItemSKU`))
ENGINE = InnoDB;


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

CREATE TABLE IF NOT EXISTS `mydb`.`SalesDetail` (
  `TicketNumber` INT NOT NULL,
```

```
  `ItemSKU` INT NOT NULL,
  `TotalPrice` DECIMAL(9,2) NULL,
  `Quantity` INT NULL,
  `SalesTicket_TicketNumber` INT NOT NULL,
  `Item_ItemSKU` INT NOT NULL,
  PRIMARY KEY (`TicketNumber`, `SalesTicket_TicketNumber`, `ItemSKU`,
`Item_ItemSKU`),
  INDEX `fk_SalesDetail_SalesTicket1_idx` (`SalesTicket_TicketNumber` ASC)
VISIBLE,
  INDEX `fk_SalesDetail_Item1_idx` (`Item_ItemSKU` ASC) VISIBLE,
  CONSTRAINT `fk_SalesDetail_SalesTicket1`
    FOREIGN KEY (`SalesTicket_TicketNumber`)
    REFERENCES `mydb`.`SalesTicket` (`TicketNumber`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_SalesDetail_Item1`
    FOREIGN KEY (`Item_ItemSKU`)
    REFERENCES `mydb`.`Item` (`ItemSKU`)
    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;
```

# 3. Assumptions

- CustomNumber in CustomerRecod is the surrogate key because there are no other attributes that can be used to distinguish the customer. Customers may have repeated names, and phone numbers. So creating a primary key is the assumption I made in the design process. And it is auto-increment.
- TicketNumber in SalesTicket is the surrogate key because there are no other attributes that can be used to distinguish the sales ticket. All the attributes in this table usually generate confusion. So creating a primary key is the optimal solution for this table and it is my assumption. And it is auto-increment.

- For the “MOVING”, “landscaping”, and “OTHER” option in the CustomerRecord table, I made the type to be BINARY, either 0 or 1. Because they all are checkboxes in the document I have seen in the HW. The only options for these three are either “Check” or not.
- For the notes in CustomerRecord Table, Special_Instructions in SalesTicket, and Description it Item, I made them to be LONGTEXT Type, because it gives the customer options to write the notes as many as they want.
- **One thing to note!** In the relationship between SalesDetail and Item tables, I thought the relationship should be SalesDetails is composed of item (1:M). But if I have that 1:M relationship, the ItemSKU foreign key will not be shown in the SalesDetail table. And I am not sure how to fix this cardinality.