1. relation scheme

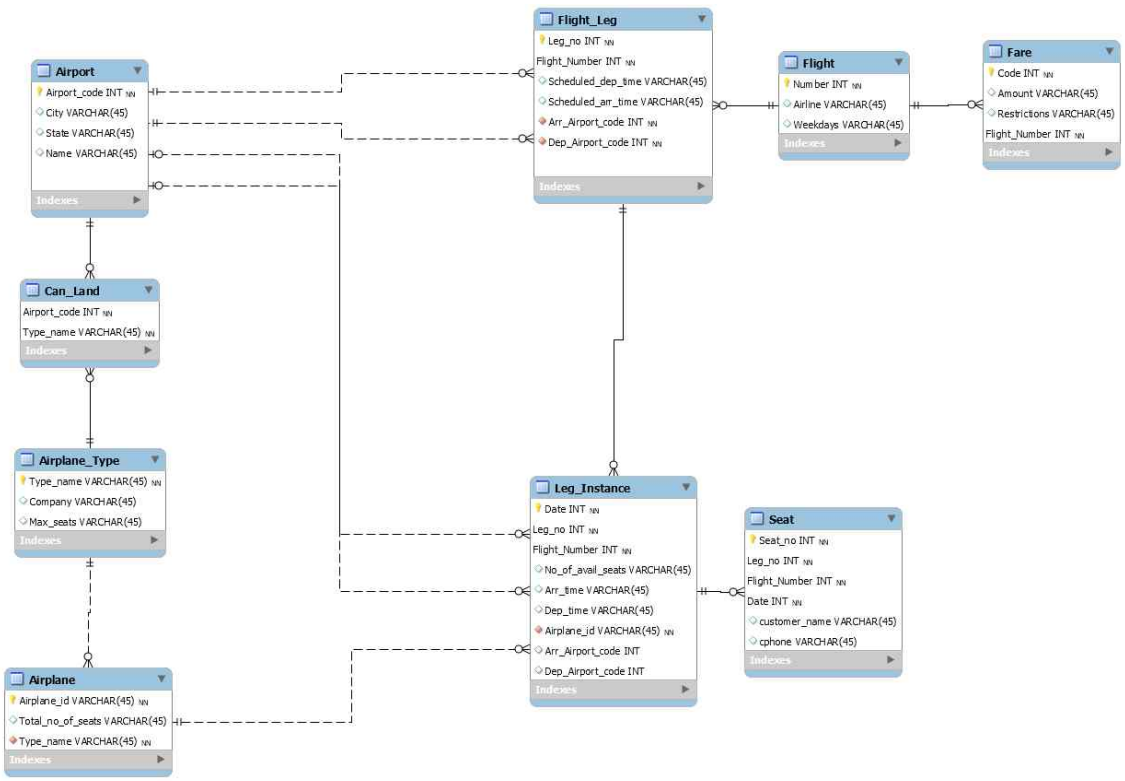
1.1 Entity relations :
Airport (Airport_code, City, State, Name)
Airplane_Ttpe (Type_name, Company, Max_seats)
Airplane (Airplane_id, Total_no_of_seats, Type_name*NN)
Flight (Flight_Number, Airline, Weekdays)

1.2 Entity relations (existential dependency) :
Flight_Leg (Leg_no, Flight_Number*, Arr_Airport_code*NN, Dep_Airport_code*NN, Scheduled_dep_time, Scheduled_arr_time)
Leg_Instance (Date, Leg_no*, Flight_Number*, No_of_avail_seats, Arr_time, Dep_time, Airplane_id*NN, Arr_Airport_code*, Dep_Airport_code*)
Fare (Code, Flight_Number*, Amount, Restrictions)
Seat (Seat_no, Date*, Leg_no*, Flight_Number*, Customer_name, Cphone)

1.3 Relationship relations :
Can_Land (Airport_code*, Type_name*)

1.4 attribute relations : 없음

2) ERR Diagram



3) DDL Script

```
-- MySQL Script generated by MySQL Workbench
-- Sat Apr 25 22:13:50 2020
-- 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 minjooDB
-- -----------------------------------------------------
-- -----------------------------------------------------
-- Schema minjooDB
-- -----------------------------------------------------
CREATE SCHEMA IF NOT EXISTS `minjooDB` DEFAULT CHARACTER SET utf8 ;
USE `minjooDB` ;
-- -----------------------------------------------------
-- Table `minjooDB`.`Airport`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Airport` (
  `Airport_code` INT NOT NULL,
  `City` VARCHAR(45) NULL,
  `State` VARCHAR(45) NULL,
  `Name` VARCHAR(45) NULL,
  PRIMARY KEY (`Airport_code`))
ENGINE = InnoDB;
-- -----------------------------------------------------
-- Table `minjooDB`.`Airplane_Type`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Airplane_Type` (
  `Type_name` VARCHAR(45) NOT NULL,
  `Company` VARCHAR(45) NULL,
  `Max_seats` VARCHAR(45) NULL,
  PRIMARY KEY (`Type_name`))
ENGINE = InnoDB;
-- -----------------------------------------------------
-- Table `minjooDB`.`Can_Land`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Can_Land` (
  `Airport_code` INT NOT NULL,
  `Type_name` VARCHAR(45) NOT NULL,
  PRIMARY KEY (`Airport_code`, `Type_name`),
  INDEX `fk_Can_Land_Airport1_idx` (`Airport_code` ASC) VISIBLE,
  INDEX `fk_Can_Land_Airplane_Type1_idx` (`Type_name` ASC) VISIBLE,
  CONSTRAINT `fk_Can_Land_Airport1`
    FOREIGN KEY (`Airport_code`)
    REFERENCES `minjooDB`.`Airport` (`Airport_code`)
```

```
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Can_Land_Airplane_Type1`
    FOREIGN KEY (`Type_name`)
    REFERENCES `minjooDB`.`Airplane_Type` (`Type_name`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;
-- -----------------------------------------------------
-- Table `minjooDB`.`Airplane`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Airplane` (
  `Airplane_id` VARCHAR(45) NOT NULL,
  `Total_no_of_seats` VARCHAR(45) NULL,
  `Type_name` VARCHAR(45) NOT NULL,
  PRIMARY KEY (`Airplane_id`),
  INDEX `fk_Airplane_Airplane_Type1_idx` (`Type_name` ASC) VISIBLE,
  CONSTRAINT `fk_Airplane_Airplane_Type1`
    FOREIGN KEY (`Type_name`)
    REFERENCES `minjooDB`.`Airplane_Type` (`Type_name`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;
-- -----------------------------------------------------
-- Table `minjooDB`.`Flight`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Flight` (
  `Number` INT NOT NULL,
  `Airline` VARCHAR(45) NULL,
  `Weekdays` VARCHAR(45) NULL,
  PRIMARY KEY (`Number`))
ENGINE = InnoDB;
-- -----------------------------------------------------
-- Table `minjooDB`.`Flight_Leg`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Flight_Leg` (
  `Leg_no` INT NOT NULL,
  `Flight_Number` INT NOT NULL,
  `Scheduled_dep_time` VARCHAR(45) NULL,
  `Scheduled_arr_time` VARCHAR(45) NULL,
  `Arr_Airport_code` INT NOT NULL,
  `Dep_Airport_code` INT NOT NULL,
  PRIMARY KEY (`Leg_no`, `Flight_Number`),
  INDEX `fk_Flight_Leg_Flight1_idx` (`Flight_Number` ASC) VISIBLE,
  INDEX `fk_Flight_Leg_Airport1_idx` (`Arr_Airport_code` ASC) VISIBLE,
  INDEX `fk_Flight_Leg_Airport2_idx` (`Dep_Airport_code` ASC) VISIBLE,
  CONSTRAINT `fk_Flight_Leg_Flight1`
    FOREIGN KEY (`Flight_Number`)
    REFERENCES `minjooDB`.`Flight` (`Number`)
```

```
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Flight_Leg_Airport1`
    FOREIGN KEY (`Arr_Airport_code`)
    REFERENCES `minjooDB`.`Airport` (`Airport_code`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Flight_Leg_Airport2`
    FOREIGN KEY (`Dep_Airport_code`)
    REFERENCES `minjooDB`.`Airport` (`Airport_code`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;
-- -----------------------------------------------------
-- Table `minjooDB`.`Fare`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Fare` (
  `Code` INT NOT NULL,
  `Amount` VARCHAR(45) NULL,
  `Restrictions` VARCHAR(45) NULL,
  `Flight_Number` INT NOT NULL,
  PRIMARY KEY (`Code`, `Flight_Number`),
  INDEX `fk_Fare_Flight1_idx` (`Flight_Number` ASC) VISIBLE,
  CONSTRAINT `fk_Fare_Flight1`
    FOREIGN KEY (`Flight_Number`)
    REFERENCES `minjooDB`.`Flight` (`Number`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;
-- -----------------------------------------------------
-- Table `minjooDB`.`Leg_Instance`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Leg_Instance` (
  `Date` INT NOT NULL,
  `Leg_no` INT NOT NULL,
  `Flight_Number` INT NOT NULL,
  `No_of_avail_seats` VARCHAR(45) NULL,
  `Arr_time` VARCHAR(45) NULL,
  `Dep_time` VARCHAR(45) NULL,
  `Airplane_id` VARCHAR(45) NOT NULL,
  `Arr_Airport_code` INT NULL,
  `Dep_Airport_code` INT NULL,
  PRIMARY KEY (`Date`, `Leg_no`, `Flight_Number`),
  INDEX `fk_Leg_Instance_Airplane1_idx` (`Airplane_id` ASC) VISIBLE,
  INDEX `fk_Leg_Instance_Flight_Leg1_idx` (`Leg_no` ASC, `Flight_Number` ASC) VISIBLE,
  INDEX `fk_Leg_Instance_Airport1_idx` (`Arr_Airport_code` ASC) VISIBLE,
  INDEX `fk_Leg_Instance_Airport2_idx` (`Dep_Airport_code` ASC) VISIBLE,
  CONSTRAINT `fk_Leg_Instance_Airplane1`
    FOREIGN KEY (`Airplane_id`)
```

```
    REFERENCES `minjooDB`.`Airplane` (`Airplane_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Leg_Instance_Flight_Leg1`
    FOREIGN KEY (`Leg_no` , `Flight_Number`)
    REFERENCES `minjooDB`.`Flight_Leg` (`Leg_no` , `Flight_Number`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Leg_Instance_Airport1`
    FOREIGN KEY (`Arr_Airport_code`)
    REFERENCES `minjooDB`.`Airport` (`Airport_code`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Leg_Instance_Airport2`
    FOREIGN KEY (`Dep_Airport_code`)
    REFERENCES `minjooDB`.`Airport` (`Airport_code`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;
-- -----------------------------------------------------
-- Table `minjooDB`.`Seat`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `minjooDB`.`Seat` (
  `Seat_no` INT NOT NULL,
  `Leg_no` INT NOT NULL,
  `Flight_Number` INT NOT NULL,
  `Date` INT NOT NULL,
  `customer_name` VARCHAR(45) NULL,
  `cphone` VARCHAR(45) NULL,
  PRIMARY KEY (`Seat_no`, `Leg_no`, `Flight_Number`, `Date`),
  INDEX `fk_Seat_Leg_Instance1_idx` (`Date` ASC, `Leg_no` ASC, `Flight_Number` ASC) VISIBLE,
  CONSTRAINT `fk_Seat_Leg_Instance1`
    FOREIGN KEY (`Date` , `Leg_no` , `Flight_Number`)
    REFERENCES `minjooDB`.`Leg_Instance` (`Date` , `Leg_no` , `Flight_Number`)
    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;
```

4) SQLDBM Diagram