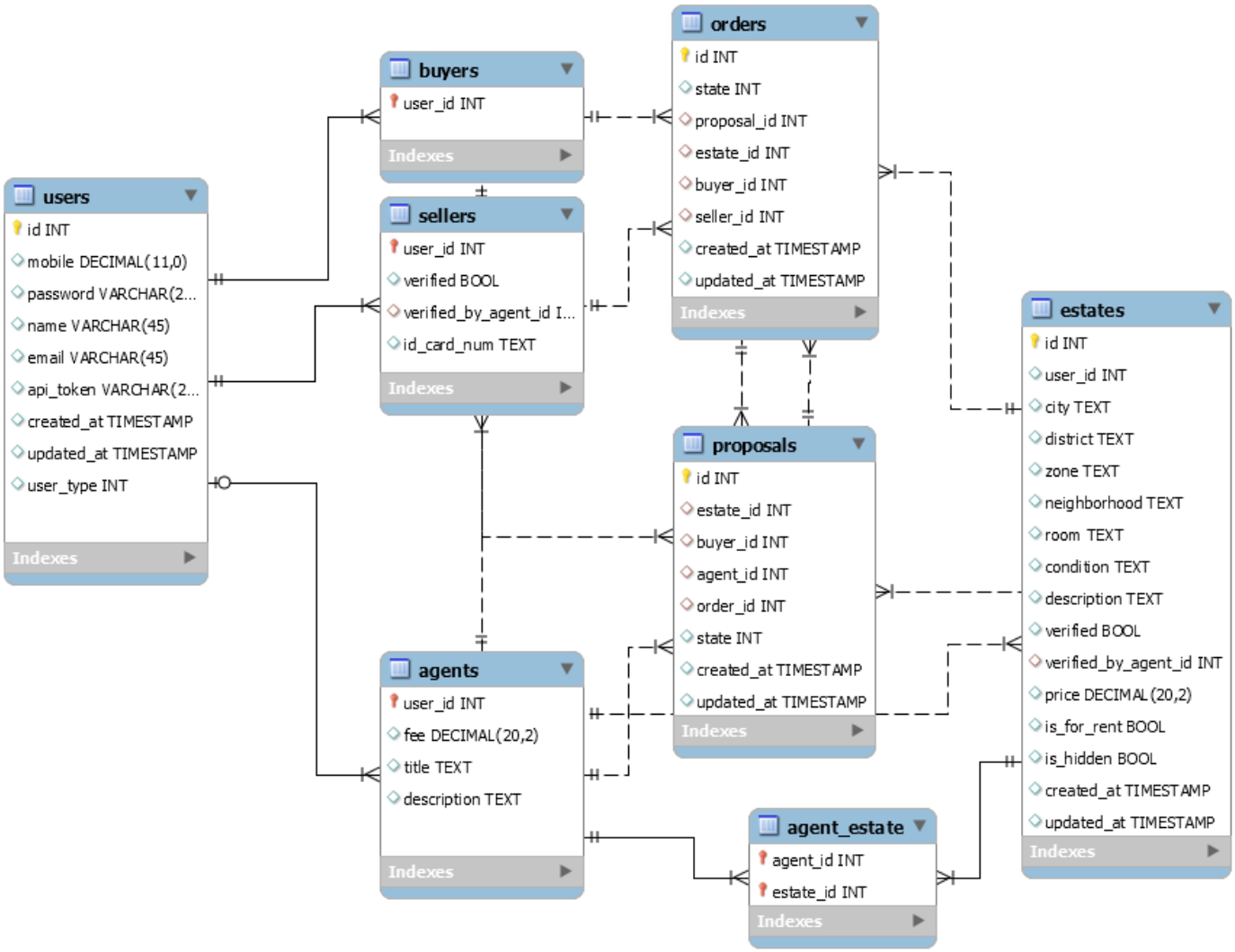
PDM图



各表的补充说明

用户(users)

每个用户都在users表中有记录，users表只用来记录用户的基本信息，如手机号、密码、姓名等等
users表中有一个特别的 `user_type` 属性，相当于一个内联的ISA，用来区分用户角色，具体是提供方、接受方还是中介。

user_type的含义

值	含义
0	接受方(buyer)
1	提供方(seller)
2	中介(agent)

除此之外还有 `buyer`，`seller`，`agent` 这三个表，分别存储了各角色所需的额外字段，他们的主键为 `user_id` ，必须要和 `users` 表中的 `id` 一致。

提供方(sellers)

提供方需要中介认证，因此有 `verified` 和 `verified_by_agent_id` 两个字段，未经过中介认证的将不能发信息。
还可以有一些其他字段，这里模拟，加了个 `id_card_num` 为身份证号。

接受方(buyers)

接受方也可以有其他字段，不过暂时没想到能有什么，所以暂时留空。等后面业务逻辑拓展了再加。

中介(agents)

中介可以设置自己的中介费用 `fee` 、头衔 `title` 、介绍 `description` 。

房产(estates)

房产基本信息，没有太多要说明的。
`is_for_rent` 指示该房产是否为出租， `true` 时， `price` 为每月租金。false时，隐含房产为出售， `price` 为售价。
`is_hidden` 为是否从其他接受者中隐藏这个房产。有两种：一是提供方自己撤销，二是中介走完了

预定的所有流程，等待接受方付款。

房产属于中介的多对多关系(agent_estate)

指定哪些房产将由哪些中介负责。用户将在房产详情页面中看到中介的列表。
简单起见，本Project中，每个房产都随机产生5名中介负责。

预定单(proposals)

由接受方发起，需要指定房产ID、中介ID
state的转换基本都由中介负责（少数由买家负责的除外）

state

值	含义
0	用户提交了预定，等待中介确认
1	中介确认了预定，等待联系卖家
2	卖家确认了预定，等待见面
3	洽谈成功，等待支付中介费
4	中介费支付成功，交易单已生成，房屋信息从网站上撤销
-1	预订单被中介拒绝
-2	预订单被卖家拒绝
-3	洽谈失败，放弃购买
-9	预订单被买家取消

交易单(orders)

预订单流程走完后，就会生成交易单

state

值	含义
0	买家未付房款（卖家可在后台标记）
1	买家已付房款，卖家未交货（买家可在后台标记）
2	卖家已交货，等待买家确认
3	买家已付款，卖家已交货，交易成功

交易单state的转换由买、卖家双方负责

代码

```
-- 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 estate_agent
-- -----------------------------------------------------


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

-- -----------------------------------------------------
-- Table `estate_agent`.`users`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `estate_agent`.`users` (
```

```
  `id` INT NOT NULL AUTO_INCREMENT,
  `mobile` DECIMAL(11,0) NULL,
  `password` VARCHAR(255) NULL,
  `name` VARCHAR(45) NULL,
  `email` VARCHAR(45) NULL,
  `api_token` VARCHAR(255) NULL,
  `created_at` TIMESTAMP NULL,
  `updated_at` TIMESTAMP NULL,
  `user_type` INT NULL,
  PRIMARY KEY (`id`),
  UNIQUE INDEX `mobile_UNIQUE` (`mobile` ASC),
  UNIQUE INDEX `id_UNIQUE` (`id` ASC))
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `estate_agent`.`agents`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `estate_agent`.`agents` (
  `user_id` INT NOT NULL,
  `fee` DECIMAL(20,2) NULL,
  `title` TEXT NULL,
  `description` TEXT NULL,
  INDEX `user_id_idx` (`user_id` ASC),
  PRIMARY KEY (`user_id`),
  CONSTRAINT `agent_user`
    FOREIGN KEY (`user_id`)
    REFERENCES `estate_agent`.`users` (`id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `estate_agent`.`sellers`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `estate_agent`.`sellers` (
  `user_id` INT NOT NULL,
```

```
  `verified` TINYINT(1) NULL,
  `verified_by_agent_id` INT NULL,
  `id_card_num` TEXT NULL,
  PRIMARY KEY (`user_id`),
  INDEX `verified_by_agent_idx` (`verified_by_agent_id` ASC),
  CONSTRAINT `seller_user`
    FOREIGN KEY (`user_id`)
    REFERENCES `estate_agent`.`users` (`id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `seller_verified_by_agent`
    FOREIGN KEY (`verified_by_agent_id`)
    REFERENCES `estate_agent`.`agents` (`user_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `estate_agent`.`buyers`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `estate_agent`.`buyers` (
  `user_id` INT NOT NULL,
  INDEX `user_id_idx` (`user_id` ASC),
  PRIMARY KEY (`user_id`),
  CONSTRAINT `buyer_user`
    FOREIGN KEY (`user_id`)
    REFERENCES `estate_agent`.`users` (`id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `estate_agent`.`estates`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `estate_agent`.`estates` (
  `id` INT NOT NULL AUTO_INCREMENT,
```

```
  `user_id` INT NULL,
  `city` TEXT NULL,
  `district` TEXT NULL,
  `zone` TEXT NULL,
  `neighborhood` TEXT NULL,
  `room` TEXT NULL,
  `condition` TEXT NULL,
  `description` TEXT NULL,
  `verified` TINYINT(1) NULL,
  `verified_by_agent_id` INT NULL,
  `price` DECIMAL(20,2) NULL,
  `is_for_rent` TINYINT(1) NULL,
  `is_hidden` TINYINT(1) NULL,
  `created_at` TIMESTAMP NULL,
  `updated_at` TIMESTAMP NULL,
  PRIMARY KEY (`id`),
  INDEX `verified_by_agent_idx` (`verified_by_agent_id` ASC),
  CONSTRAINT `estate_verified_by_agent`
    FOREIGN KEY (`verified_by_agent_id`)
    REFERENCES `estate_agent`.`agents` (`user_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;



-- -----------------------------------------------------
-- Table `estate_agent`.`orders`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `estate_agent`.`orders` (
  `id` INT NOT NULL AUTO_INCREMENT,
  `state` INT NULL,
  `proposal_id` INT NULL,
  `estate_id` INT NULL,
  `buyer_id` INT NULL,
  `seller_id` INT NULL,
  `created_at` TIMESTAMP NULL,
  `updated_at` TIMESTAMP NULL,
  PRIMARY KEY (`id`),
```

```
  INDEX `proposal_idx` (`proposal_id` ASC),
  INDEX `estate_idx` (`estate_id` ASC),
  INDEX `seller_idx` (`seller_id` ASC),
  INDEX `buyer_idx` (`buyer_id` ASC),
  CONSTRAINT `order_proposal`
    FOREIGN KEY (`proposal_id`)
    REFERENCES `estate_agent`.`proposals` (`id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `order_estate`
    FOREIGN KEY (`estate_id`)
    REFERENCES `estate_agent`.`estates` (`id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `order_buyer`
    FOREIGN KEY (`buyer_id`)
    REFERENCES `estate_agent`.`buyers` (`user_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `order_seller`
    FOREIGN KEY (`seller_id`)
    REFERENCES `estate_agent`.`sellers` (`user_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `estate_agent`.`proposals`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `estate_agent`.`proposals` (
  `id` INT NOT NULL AUTO_INCREMENT,
  `estate_id` INT NULL,
  `buyer_id` INT NULL,
  `agent_id` INT NULL,
  `order_id` INT NULL,
  `state` INT NULL,
  `created_at` TIMESTAMP NULL,
```

```
  `updated_at` TIMESTAMP NULL,
  PRIMARY KEY (`id`),
  INDEX `estate_idx` (`estate_id` ASC),
  INDEX `order_idx` (`order_id` ASC),
  INDEX `agent_idx` (`agent_id` ASC),
  INDEX `proposal_buyer_idx` (`buyer_id` ASC),
  CONSTRAINT `proposal_estate`
    FOREIGN KEY (`estate_id`)
    REFERENCES `estate_agent`.`estates` (`id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `proposal_agent`
    FOREIGN KEY (`agent_id`)
    REFERENCES `estate_agent`.`agents` (`user_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `proposal_order`
    FOREIGN KEY (`order_id`)
    REFERENCES `estate_agent`.`orders` (`id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `proposal_buyer`
    FOREIGN KEY (`buyer_id`)
    REFERENCES `estate_agent`.`buyers` (`user_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `estate_agent`.`agent_estate`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `estate_agent`.`agent_estate` (
  `agent_id` INT NOT NULL,
  `estate_id` INT NOT NULL,
  PRIMARY KEY (`agent_id`, `estate_id`),
  INDEX `estate_idx` (`estate_id` ASC),
  CONSTRAINT `agent_estate_agent`
```

```
    FOREIGN KEY (`agent_id`)
    REFERENCES `estate_agent`.`agents` (`user_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `agent_estate_estate`
    FOREIGN KEY (`estate_id`)
    REFERENCES `estate_agent`.`estates` (`id`)
    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;
```