ER Diagram Exercise 3

Draw an ER/EER diagram to model the situation described below. Represent the situation as accurately as possible, including participation, cardinality, and key constraints as appropriate. Also identify any attributes which are required (i.e. should be NOT NULL). Note any constraints present that you did not capture in the diagram along with a reason why they were omitted. If necessary specifics are lacking in the description of the situation, make reasonable assumptions and state those assumptions.

A horse has a registration number (by which it is identified), name, type (quarter horse or thoroughbred), gender, and trainer. A horse is only trained by one person, but a given trainer may train any number of horses. The heritage of every horse must also be maintained, if the information is available. For example, the mother (dam) and father (sire) should be recorded. It is also necessary to identify the offspring of a given horse.

A stable is a company that breeds, trains, and sells/buys horses. A stable has a unique identifier, and a name, phone, and contact person.

Information about people involved in the horse racing business should be maintained. An identifier, name, address, and phone number should be maintained about every person. If a person is a horse trainer, the salary of the trainer should be indicated along with the horses trained by the trainer. A horse trainer works for a specific stable. (A stable may employ many trainers.) If a person is a jockey, the weight of the jockey must be recorded, along with the date of the last recorded weight. It is sometimes necessary to know whether a person is both a trainer and a jockey. Name and contact information can also be maintained about people other than trainers and jockeys.

A horse can have more than one owner. An owner can own more than one horse. Information is always recorded about the most recent date and purchase price of a horse by its current owner(s). Owners must also record their percentage of ownership of a horse (which should not add up to more than 100%). An owner can be either a stable or a person.

Every race track has a race schedule indicating the date of each race day and the list of races for each race day. A race day typically has 10 scheduled races, where each race has a race number (from 1 to 10) and a purse. The purse is the amount of money awarded to the winner of the race.

Every race has several entries. Each entry indicates the horse, jockey, and gate position of the horse at the start of the race. After the race, the entry records the finishing position of the horse (first, second, third, etc). Every horse and every jockey must be able to produce a history of the races in which they have participated.

A graph paper with arrows and arrows

Description automatically generated

Not Nulls:

Horse Gender

Race Date

Race Num, Purse

Gate Position

Trainer salary

Jockey weight and last weight date