Exercise Session: 1

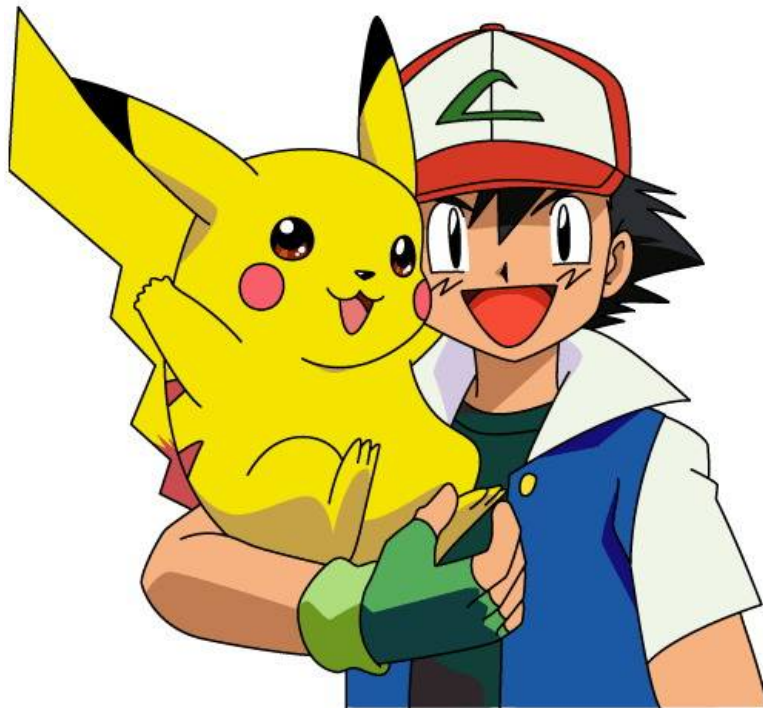11 November 2017

1 E-R Modelling (2 parts, 12p)

Figure 1: The Pokémon Pikachu (left) with its human trainer Ash (right)

(Note: the plural of "Pokémon" is "Pokémon". However, for the purpose of clarity, when we talk about multiple Pokémon in this text, we will explicitly use the term "Pokémons" and hopefully not insult any Pokémon fans.)

Pokémons are fictional creatures which humans, known as Pokémon Trainers, catch and train to battle each other for sport.

The domain to model is a limited subset of Pokémons:

- Each Pokémon is owned by exactly one trainer, there are no free-roaming Pokémons.
- Every trainer has a unique social security number (SSN), Pokémons have names which are not unique. Trainers rename their Pokémons so that they own no two Pokémons with the same name. (E.g. Ash can not own two Pokémons named Pikachu, he has to rename one of them. At the same time, Ash's friend Misty (also a Pokémon trainer) can own a Pokémon which is also named Pikachu).
- Trainers can become a member of any number of clubs. Clubs are located in cities, in a certain street and at a certain streetnumber, and have a unique name within that city. Cities have unique names. Streetnames are not unique. (E.g. two cities may have a street named Kyrkogatan).
- Two Pokémons can challenge each other to fight in a club. Each fight takes place in a club at a certain time and can result in one Pokémon winning, or a tie (neither Pokémon wins). Two Pokémons can only fight twice in a certain club: once as the challenger, and once as the opponent.

1a. Draw an Entity-Relationship diagram for this domain. Do not use multivalued attributes. (7p).

1b. Give the corresponding relational database schema (5p).