



Species



Scientist



Habitat



# MammalDB



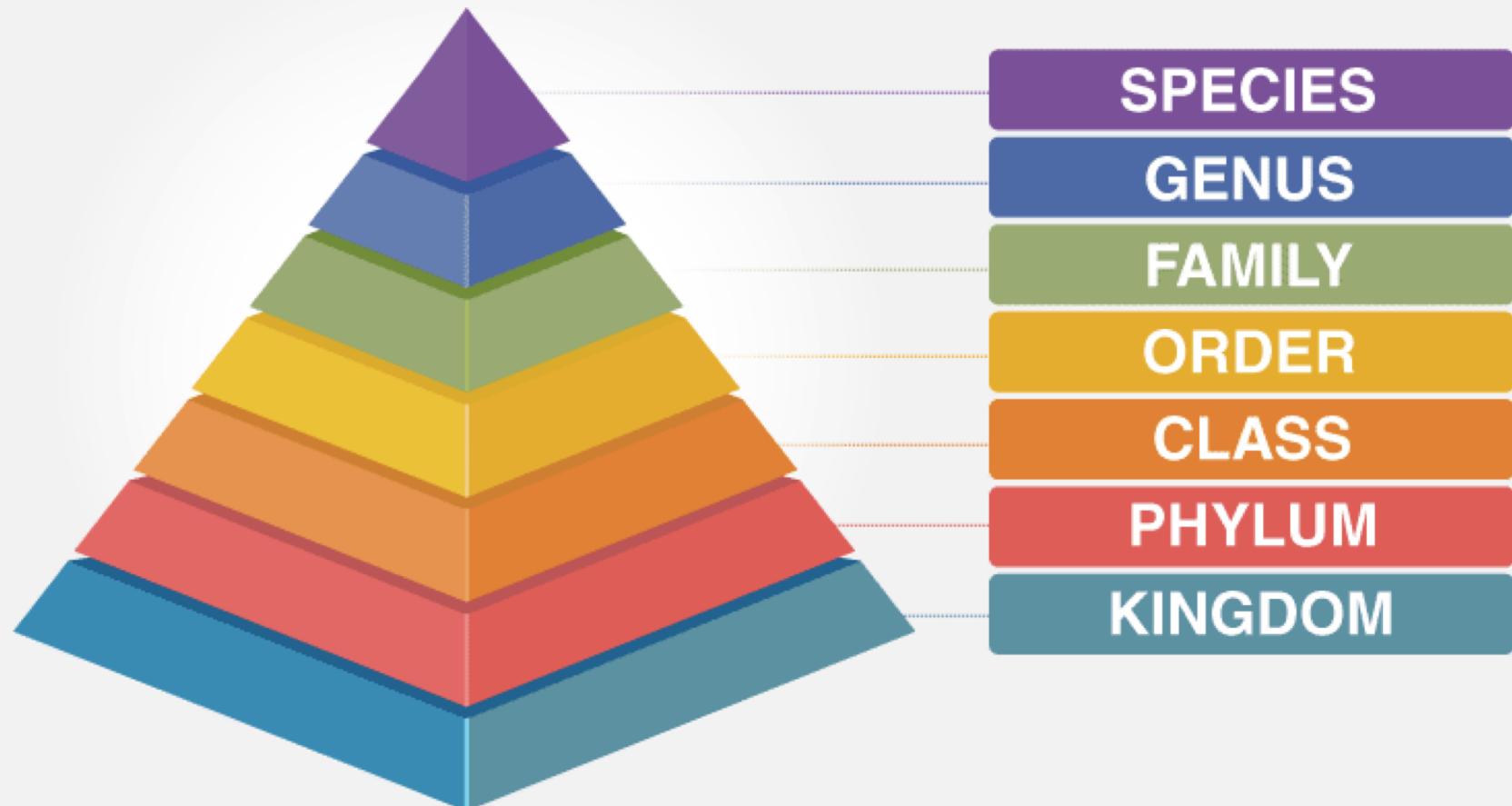
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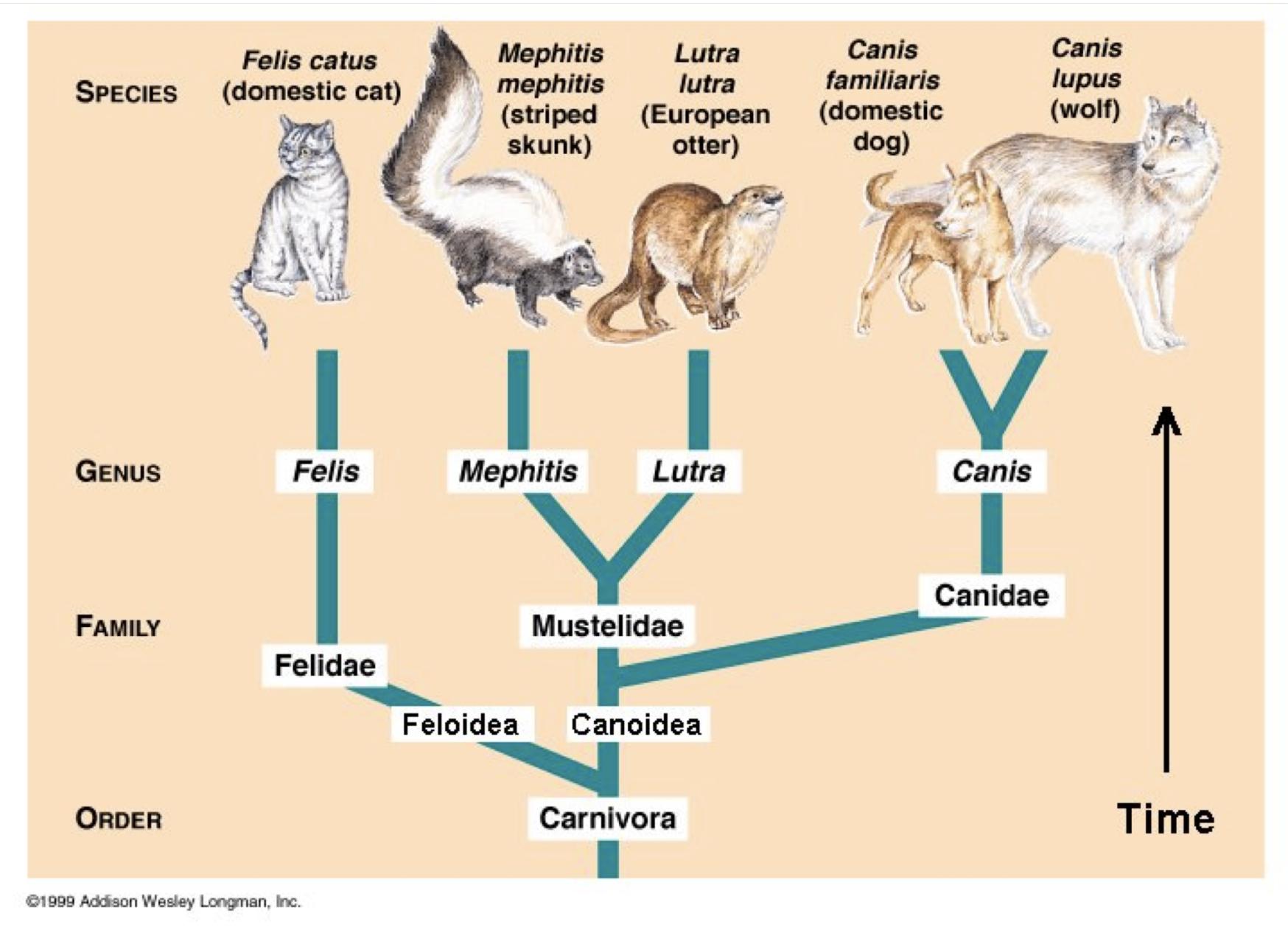
# Introduction to MammalDB:

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- MammalDB is a database for the taxonomic rank of mammals.
- Storing different species' info in a database could help advance scientific research and obtain more information such as location, parent genus, characteristics unique to the genus, etc.
- MammalDB helps determine any unusual patterns such as if a species were to go extinct much earlier, which is very critical for scientists and require biological databases to identify them.
- MammalDB is available to any user with an interest to learn more about mammals and species, especially those in the education field (student/teacher) who are looking for data on a specific subset of the mammal class would greatly benefit from our up-to-date database

# TAXONOMIC HIERARCHY



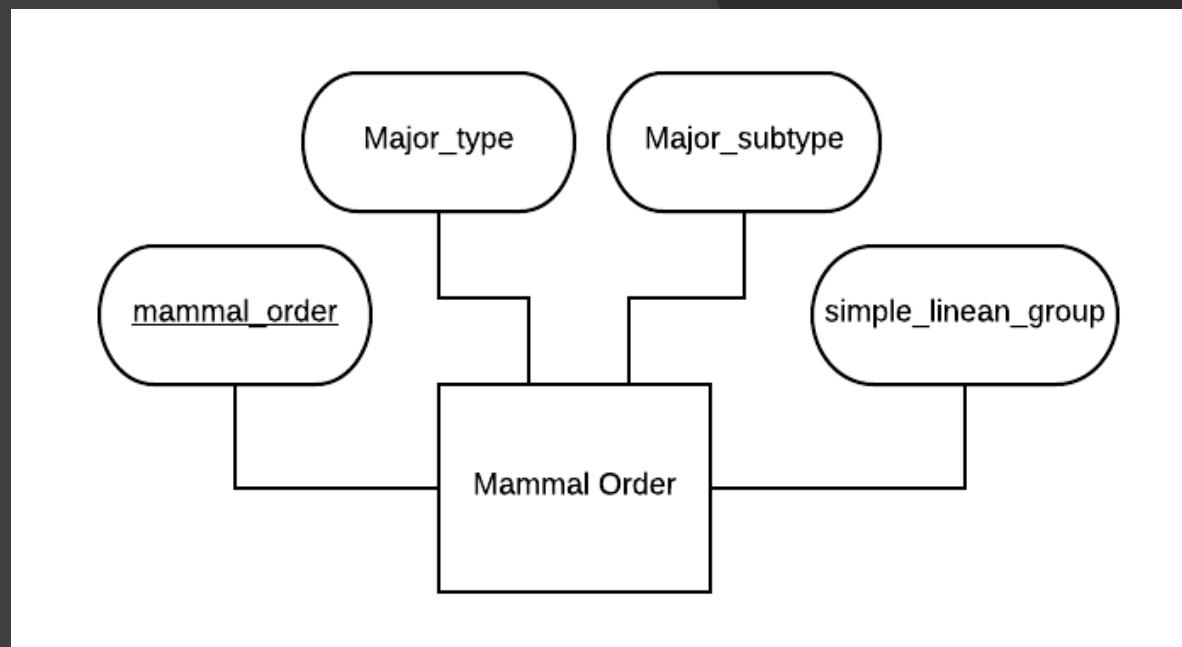


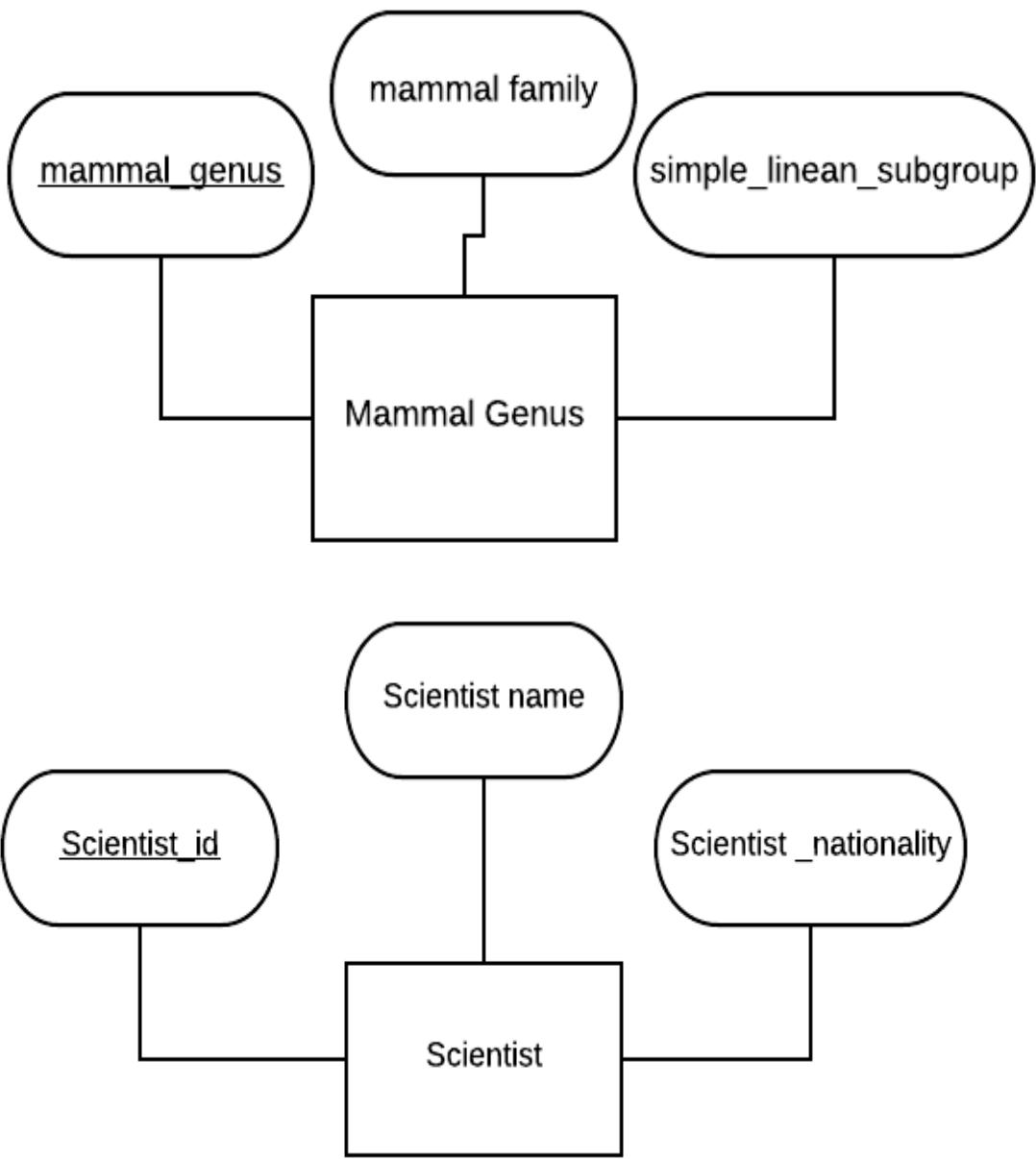
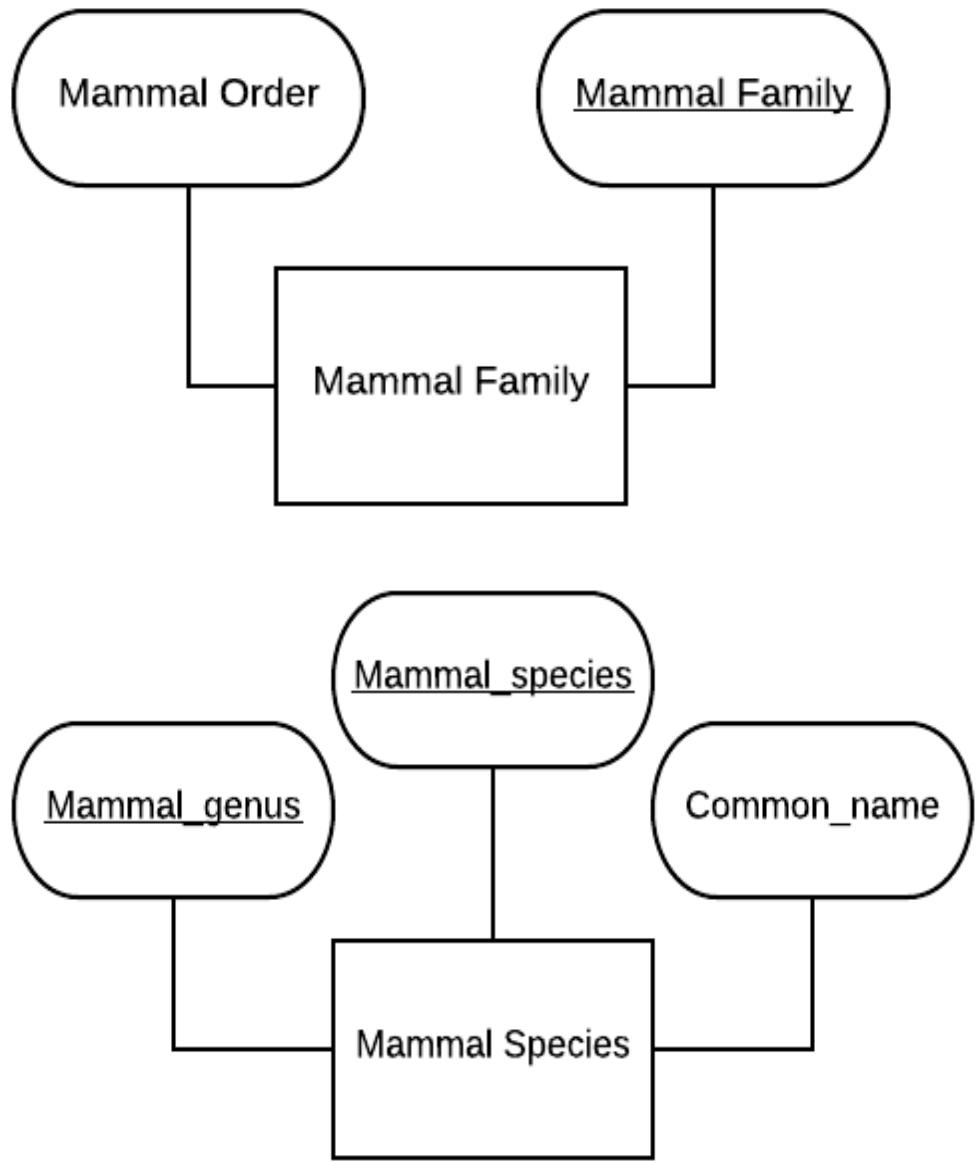
# Requirement Analysis

- Our database will show
  - *Species, the scientific name, its characteristics*
  - *Current or previous habitats, endangered status, etc.*
  - *information about the scientist who discovered species, the year it was discovered, and the scientist's nationality. This database is very useful to science as it will save a great amount of time in analyzing all this data from a long period of time.*
  - *In addition, our design for the database also has the ability to contain specializations and generalizations, which helps us, as the creators, differentiate between different subclasses. This data will be obtained through a csv file provided by the ASM Mammal Diversity Database. Other possible information will be provided via Wikipedia.*
    - Species: Scientific Name, Characteristics, Habitats, Status (if they are endangered), Common Name
    - Order: mammal order, major type, simple linnean group.
    - Scientist: Scientist Name, Nationality, Year Discovered Genus
    - Diet: Diet of Species, Carnivore/Herbivore
    - Footprint: Length of Feet, Width of Feet
    - Habitat: habitat id, habitat type.

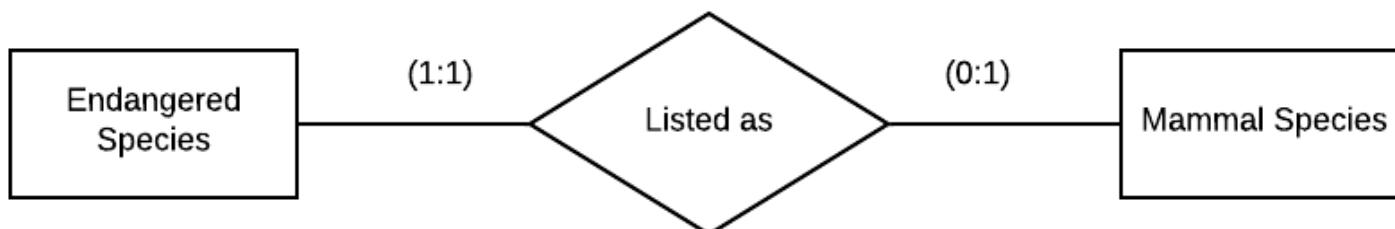
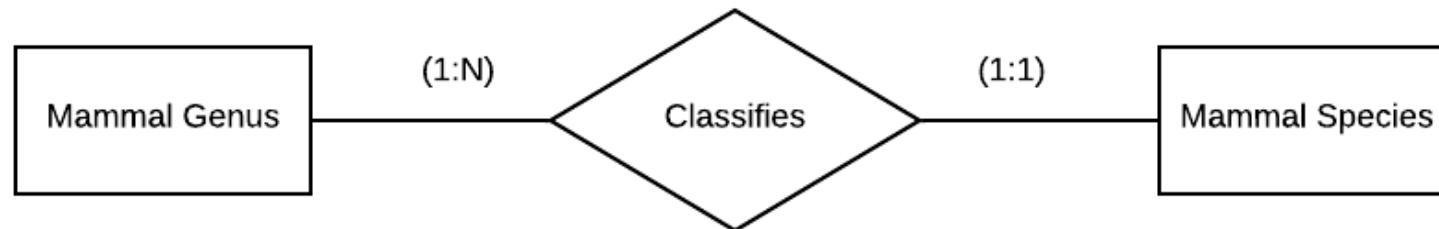
# Data Requirements:

-The first entity is Mammal order. It contains the attributes mammal\_order as the primary key, major\_type of the mammal order (3 major types of mammals can be monotremes(mammals that lay eggs), marsupial(mammals give birth that is not completely developed) and placental(develops inside mother's body until the biological systems developed) ), major\_subtype and attribute simple\_linncean\_subgroup which simplifies the groups of mammals into a common name like anteaters, bats, hippos, etc.





# Relationship:



# Functional Requirements

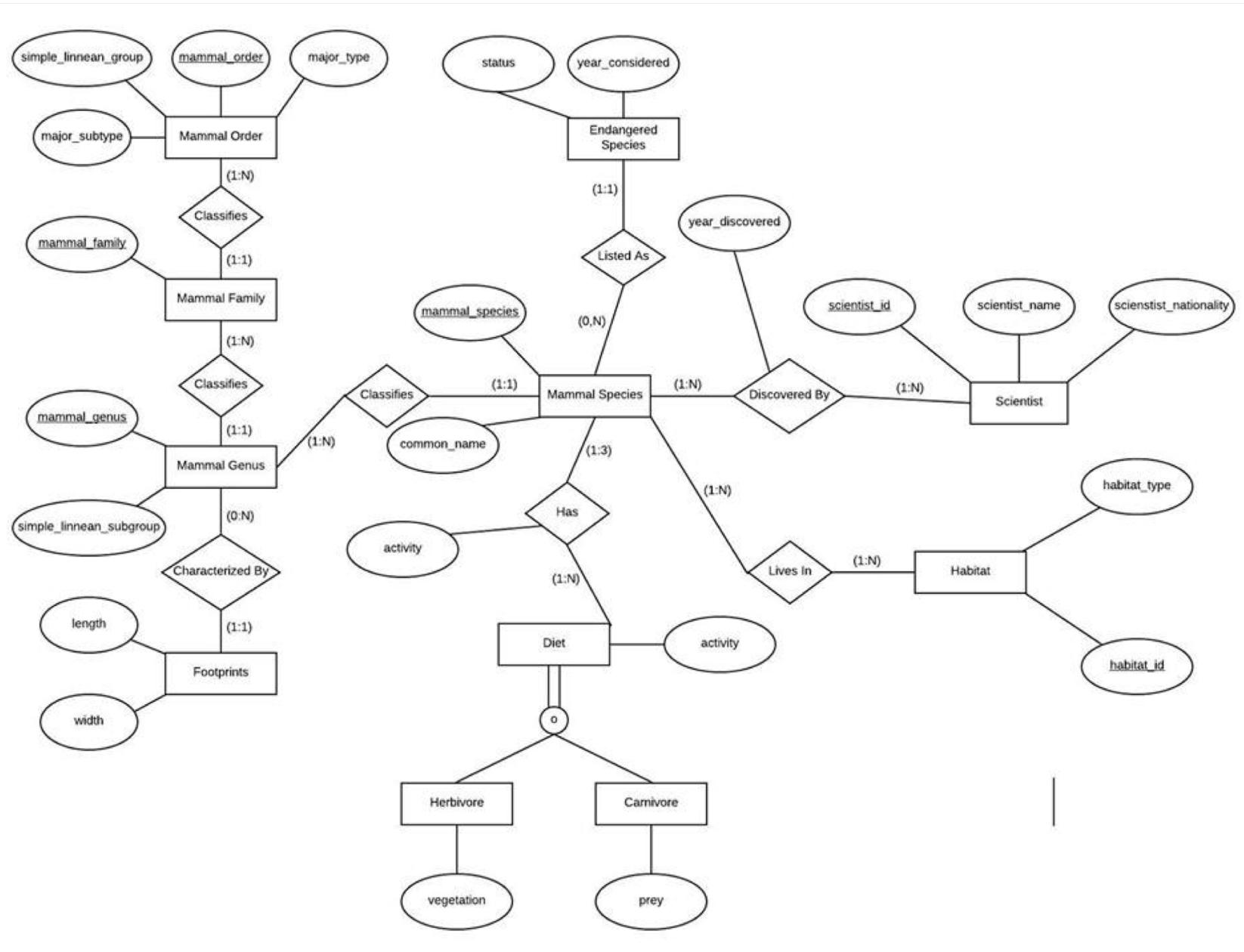
- The database will allow someone to find the general location of a specific species and it will give the information if the species are listed as endangered species and the year when the endangered status was placed.
- The database will allow us to search for the footprints of a mammal's genus with the length and the width of *footprints*.
- We can search for all mammals with a diurnal/nocturnal activity living in a specific habitat.
- We can search for the canonical scientific names in mammal genus that are also endangered.
- From the database, we can search for the scientist who discovered that certain mammals, including the scientist's nationality and the year that the scientists discovered that mammal
- The database will allow to search and list by mammal species that share common mammal genus.
- The database will allow us to find about the specific area that the mammals live, not just the general like water or land. Users can search for the specific areas the mammals live in.
- Also, for the mammals' diet, people can know if the mammals are herbivore, carnivore or omnivore by the boolean columns we have.
- One of the most important thing is that people can learn the relationship among those hierarchy of the mammals from mammal order, mammal family, mammal genus and mammal species.

# Data Sources:

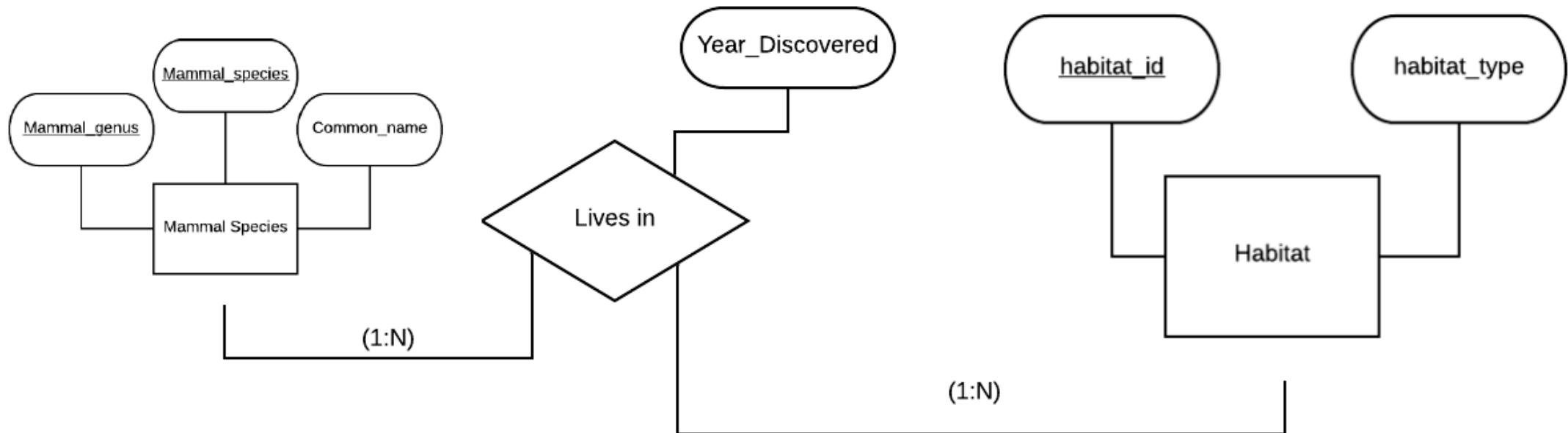
- We get most data online from Wikipedia, IUCN(International Union for Conservation of Nature) and Wikispecies

Genus	Species	Common Name	Simple Linnean Group	Major Type	Major Subtype	Linnean Order	Species Authority	Linnean Family	Canonical Siname	Simple Linnean Subgroup
<i>Abditomys</i>	<i>latidens</i>	Luzon Broad-Toothed Rat	eutheria	placentalia	boreoeutheria	Rodentia	Sanborn	Muridae	<i>Abditomys latidens</i>	rodents
<i>Abeomelomys</i>	<i>sevia</i>	Menzies' Mouse	eutheria	placentalia	boreoeutheria	Rodentia	Tate & Archbold	Muridae	<i>Abeomelomys sevia</i>	rodents
<i>Abrawayaomys</i>	<i>chebezi</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	null	Cricetidae	<i>Abrawayaomys chebezi</i>	rodents
<i>Abrawayaomys</i>	<i>ruschii</i>	Rusch's Rat	eutheria	placentalia	boreoeutheria	Rodentia	Cuhna & Cruz	Cricetidae	<i>Abrawayaomys ruschii</i>	rodents
<i>Abrocomia</i>	<i>bennettii</i>	Bennett's Chinchilla Rat	eutheria	placentalia	boreoeutheria	Rodentia	Waterhouse	Abrocomidae	<i>Abrocomia bennettii</i>	rodents
<i>Abrocomia</i>	<i>boliviensis</i>	Bolivian Chinchilla Rat	eutheria	placentalia	boreoeutheria	Rodentia	Glanz & Anderson	Abrocomidae	<i>Abrocomia boliviensis</i>	rodents
<i>Abrocomia</i>	<i>budini</i>	Budins Chinchilla Rat	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Abrocomidae	<i>Abrocomia budini</i>	rodents
<i>Abrocomia</i>	<i>cineræa</i>	Ashy Chinchilla Rat	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Abrocomidae	<i>Abrocomia cineræa</i>	rodents
<i>Abrocomia</i>	<i>famatina</i>	Famatina Chinchilla Rat	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Abrocomidae	<i>Abrocomia famatina</i>	rodents
<i>Abrocomia</i>	<i>shistacea</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Abrocomidae	<i>Abrocomia shistacea</i>	rodents
<i>Abrocomia</i>	<i>uspallata</i>	Uspallata Chinchilla Rat	eutheria	placentalia	boreoeutheria	Rodentia	Braun & Mares	Abrocomidae	<i>Abrocomia uspallata</i>	rodents
<i>Abrocomia</i>	<i>vaccarum</i>	Mendozan Chinchilla Rat	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Abrocomidae	<i>Abrocomia vaccarum</i>	rodents
<i>Abrothrix</i>	<i>andinus</i>	Andean Altiplano mouse	eutheria	placentalia	boreoeutheria	Rodentia	Philippi	Cricetidae	<i>Abrothrix andinus</i>	rodents
<i>Abrothrix</i>	<i>hershkovitzi</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	Petterson, Gallardo, & Freas	Cricetidae	<i>Abrothrix hershkovitzi</i>	rodents
<i>Abrothrix</i>	<i>hirta</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Cricetidae	<i>Abrothrix hirta</i>	rodents
<i>Abrothrix</i>	<i>illutea</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Cricetidae	<i>Abrothrix illutea</i>	rodents
<i>Abrothrix</i>	<i>jelskii</i>	Jelski's Altiplano Mouse	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Cricetidae	<i>Abrothrix jelskii</i>	rodents
<i>Abrothrix</i>	<i>lanosa</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	Thomas	Cricetidae	<i>Abrothrix lanosa</i>	rodents
<i>Abrothrix</i>	<i>longipilis</i>	Long-Haired Akodont	eutheria	placentalia	boreoeutheria	Rodentia	Waterhouse	Cricetidae	<i>Abrothrix longipilis</i>	rodents
<i>Abrothrix</i>	<i>manni</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	null	Cricetidae	<i>Abrothrix manni</i>	rodents
<i>Abrothrix</i>	<i>olivacea</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	Waterhouse	Cricetidae	<i>Abrothrix olivacea</i>	rodents
<i>Abrothrix</i>	<i>sanborni</i>	Sanborn's Grass Mouse	eutheria	placentalia	boreoeutheria	Rodentia	Osgood	Cricetidae	<i>Abrothrix sanborni</i>	rodents
<i>Acerodon</i>	<i>celebensis</i>	Sulawesi Fruit Bat	eutheria	placentalia	boreoeutheria	Chiroptera	Peters	Pteropodidae	<i>Acerodon celebensis</i>	bats
<i>Acerodon</i>	<i>humilis</i>	Talaud Fruit Bat	eutheria	placentalia	boreoeutheria	Chiroptera	K. Andersen	Pteropodidae	<i>Acerodon humilis</i>	bats
<i>Acerodon</i>	<i>jubatus</i>	Golden-Capped Fruit Bat	eutheria	placentalia	boreoeutheria	Chiroptera	Eschscholtz	Pteropodidae	<i>Acerodon jubatus</i>	bats
<i>Acerodon</i>	<i>leucotis</i>	Palawan Fruit Bat	eutheria	placentalia	boreoeutheria	Chiroptera	Sanborn	Pteropodidae	<i>Acerodon leucotis</i>	bats
<i>Acerodon</i>	<i>mackloti</i>	Sunda Fruit Bat	eutheria	placentalia	boreoeutheria	Chiroptera	Temminck	Pteropodidae	<i>Acerodon mackloti</i>	bats
<i>Acinonyx</i>	<i>jubatus</i>	Cheetah	eutheria	placentalia	boreoeutheria	Carnivora	Schreber	Felidae	<i>Acinonyx jubatus</i>	true cats
<i>Acomys</i>	<i>cahirinus</i>	Cairo Spiny Mouse	eutheria	placentalia	boreoeutheria	Rodentia	null	Muridae	<i>Acomys cahirinus</i>	rodents
<i>Acomys</i>	<i>chudeaui</i>	null	eutheria	placentalia	boreoeutheria	Rodentia	Kollman	Muridae	<i>Acomys chudeaui</i>	rodents
<i>Acomys</i>	<i>ciliatus</i>	Asia Minor Spiny Mouse	eutheria	placentalia	boreoeutheria	Rodentia	Spitzenberger	Muridae	<i>Acomys ciliatus</i>	rodents
<i>Acomys</i>	<i>cineraceus</i>	Gray Spiny Mouse	eutheria	placentalia	boreoeutheria	Rodentia	Heuglin	Muridae	<i>Acomys cineraceus</i>	rodents
<i>Acomys</i>	<i>dimidiatus</i>	Arabian Spiny Mouse	eutheria	placentalia	boreoeutheria	Rodentia	Cretzschmar	Muridae	<i>Acomys dimidiatus</i>	rodents
<i>Acomys</i>	<i>ignitus</i>	Fiery Spiny Mouse	eutheria	placentalia	boreoeutheria	Rodentia	Dollman	Muridae	<i>Acomys ignitus</i>	rodents

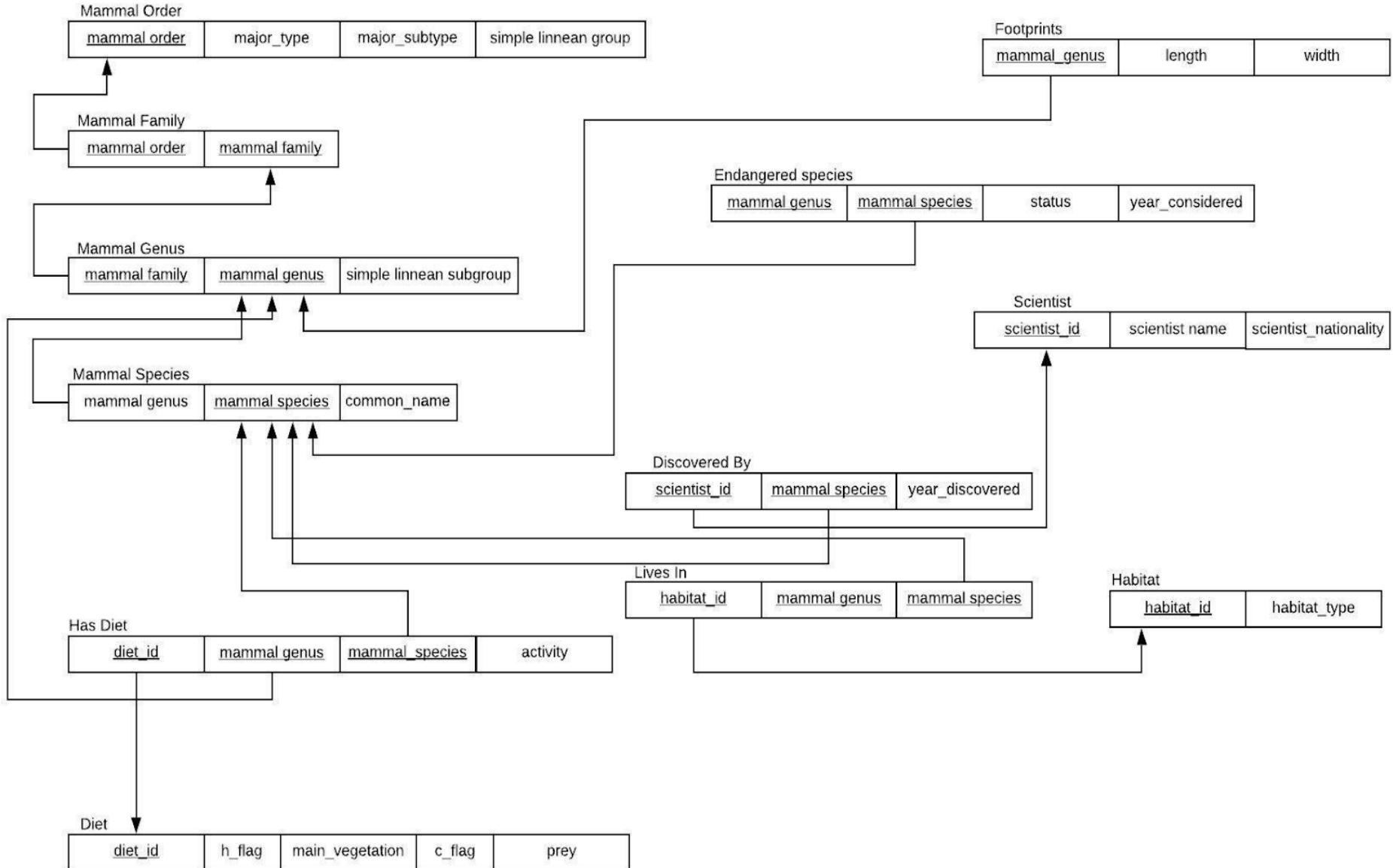
# ER Diagram



# Break it out:



# Relational model:



# Challenges:

- Big amount of data
- Organize table

# Improvements:

- Application
- More data

# Conclusion:

- In this cycle, we think that one of the most challenging we have is organizing the data to the appropriate tables. We have mostly the data such as mammal genus, mammal species, mammal order but we miss some data about the scientists, diet, etc. Thus, collecting data from different sources and matching them with the values we already had took most of your time.
- From our project, we believe that we brought some conveniences for users to search for the information as fast as possible. The project has pretty much enough data for the users to find out for the information of their interested species.

# Question?