



# Database Structure

# Basic rules of database structure

---

1. **Order doesn't matter**
  - ▶ The information should not be dependent on the order of the rows or the order of the columns
2. **No duplicate rows**
3. **Every row-column combination contains one value**
4. **One field per type of information**
5. **No redundant information**



# Order doesn't matter

---

Species	Count
AH	1
AS	5
AS	10
SH	2



# Order doesn't matter

---



Species	Count
AH	1
AS	5
AS	10
SH	2

Site	Species	Count
1	AH	1
1	AS	5
2	AS	10
2	SH	2



# No duplicate rows

---

Species
AH
AS
AH
AS
AS



# No duplicate rows

---



Species
AH
AS
AH
AS
AS

Species	Count
AH	2
AS	5



# One value per cell

---

<b>Species</b>	<b>Habitats</b>
AH	Shrubland, Grassland
AS	Grassland
SH	Grassland, Woodland, Shrubland



# One column per type of information

---

<b>Species</b>	<b>Habitat1</b>	<b>Habitat2</b>	<b>Habitat3</b>
AH	Shrubland	Grassland	
AS	Grassland		
SH	Grassland	Woodland	Shrubland





# Proper structure

---



Species	Habitats
AH	Shrubland, Grassland
AS	Grassland
SH	Grassland, Woodland, Shrubland

Species	Habitat1	Habitat2	Habitat3
AH	Shrubland	Grassland	
AS	Grassland		
SH	Grassland	Woodland	Shrubland

Species	Habitat
AH	Shrubland
AH	Grassland
AS	Grassland
SH	Grassland
SH	Woodland
SH	Shrubland



# No redundant information

---

Site	Family	Genus	Species	Count
1	Sciuridae	Ammospermophilus	harrisi	1
1	Sciuridae	Ammodramus	savannarum	5
2	Sciuridae	Ammodramus	savannarum	10
2	Cricetidae	Sigmodon	hispidus	2

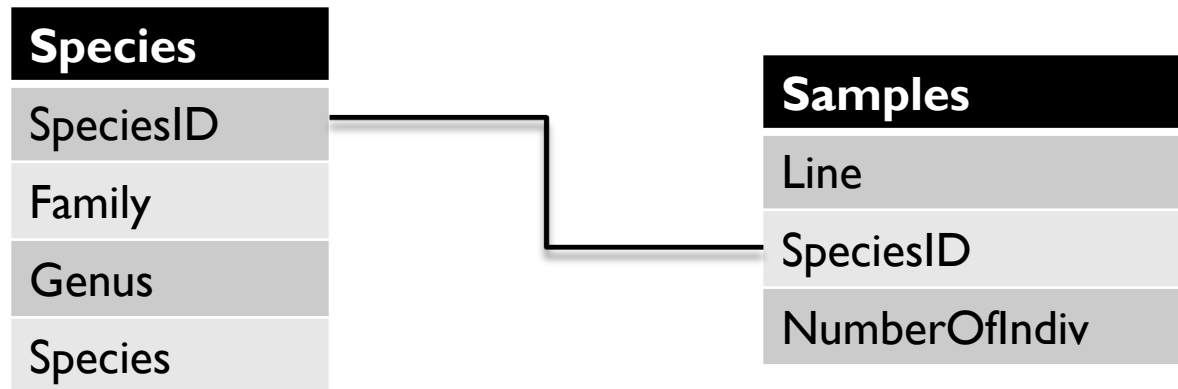


# No redundant information

---



Site	Family	Genus	Species	Count
1	Sciuridae	Ammospermophilus	harrisi	1
1	Sciuridae	Ammodramus	savannarum	5
2	Sciuridae	Ammodramus	savannarum	10
2	Cricetidae	Sigmodon	hispidus	2



# Basic rules of database structure

---

1. **Order doesn't matter**
  - ▶ The information should not be dependent on the order of the rows or the order of the columns
2. **No duplicate rows**
3. **Every row-column combination contains one value**
4. **One field per type of information**
5. **No redundant information**

