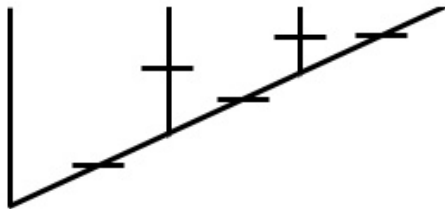


Procedure 1: Cladogram for Inanimate Objects

Character States	Operational Taxonomic Units			
	RED	BLUE	GREEN	YELLOW
a.				
b.				
c.				
d.				
e.				
f.				
g.				
h.				

- Complete your cladogram here, include the character states:



- On your cladogram circle the following:
  - the proposed "family" in red
  - the proposed "genera" in blue
  - and the "species" in green

Procedure 2. Traditional (Romerian) Grouping of the Vertebrates

- List species and characteristics (as shown in Romer) in this table:

Urochordates (outgroup)

Subphylum Vertebrata

Class Agnatha

Class Chondrichthyes

Class Osteichthyes

Class Amphibia

Class Reptilia

Class Aves

Class Mammalia

**Procedure 3. Nested Sets Approach to Classification**

- Draw circles around the groups displaying the characteristics (label your circles)

Traditional "Romerian" Classification		
Urochordates	Urochordates	
Hagfishes	Agnatha	
Lampreys	Chondrichthyes	
Chondrichthyes	Non-amniotes	
Ray-finned fishes		Osteichthyes
"Lobe-finned" fishes		Amphibia
Amphibians	Amniotes	
"Reptiles"		Reptilia
Birds		Aves
Mammals		Mammalia

- Now, illustrate the proposed evolutionary relationships in a **phylogenetic tree** based upon the "traditional" grouping and a **cladogram** based upon the nested sets grouping. Discuss the differences between these in a few paragraphs. Remember, the cladogram and the tree are figures and should be treated as such (label, caption, etc...)