

## 4 - Making Cladograms

## Data Table

| TRAITS                                   | Kangaroo | Lamprey | Rhesus Monkey | Bullfrog | Human | Snapping Turtle | Tuna |
|--|----------|---------|---------------|----------|-------|-----------------|------|
| Dorsal Nerve Cord<br>Notochord           | ✓        | ✓       | ✓             | ✓        | ✓     | ✓               | ✓    |
| Paired Appendages<br>Vertebral Column    | ✓        |         | ✓             | ✓        | ✓     | ✓               | ✓    |
| Paired Legs                              | ✓        |         | ✓             | ✓        | ✓     | ✓               |      |
| Amnion                                   | ✓        |         | ✓             |          | ✓     | ✓               |      |
| Mammary Glands                           | ✓        |         | ✓             |          | ✓     |                 |      |
| Placenta                                 |          |         | ✓             |          | ✓     |                 |      |
| Canine teeth short<br>Foramen magnum fwd |          |         |               |          | ✓     |                 |      |

## Reordered Table

| TRAITS                                | Human | Rhesus Monkey | Kangaroo | Snapping Turtle | Bullfrog | Tuna | Lamprey |
|---------------------------------------|-------|---------------|----------|-----------------|----------|------|---------|
| Dorsal Nerve Cord Notochord           | ✓     | ✓             | ✓        | ✓               | ✓        | ✓    | ✓       |
| Paired Appendages Vertebral Column    | ✓     | ✓             | ✓        | ✓               | ✓        | ✓    |         |
| Paired Legs                           | ✓     | ✓             | ✓        | ✓               | ✓        |      |         |
| Amnion                                | ✓     | ✓             | ✓        | ✓               |          |      |         |
| Mammary Glands                        | ✓     | ✓             | ✓        |                 |          |      |         |
| Placenta                              | ✓     | ✓             |          |                 |          |      |         |
| Canine teeth short Foramen magnum fwd | ✓     |               |          |                 |          |      |         |

## Claydogram

```

/- Human
/
(Foramen magnum fwd)
/- Rhesus Monkey
/
(Placenta)
/- Kangaroo
/
(Mammary Glands)
/- Snapping Turtle
/
(Amnion)
/- Bullfrog

```

```
 / (Paired Legs)
/- Tuna
 / (Paired Appendages)
/- Lamprey
 / (Dorsal Nerve)
```

## Summary

Shows

1. Likely relationships
2. Possible common ancestors and origins of characteristic
3. Shared characteristics

## Application

1. Iguana: near the turtle as they share prior characteristics
2. Rat: Near the monkey
3. Goldfish: Near the tuna