Dinosaur Data Analysis and Visualization

A POWERBI PROJECT ABOUT MESOZOIC DINOSAURS

Brief

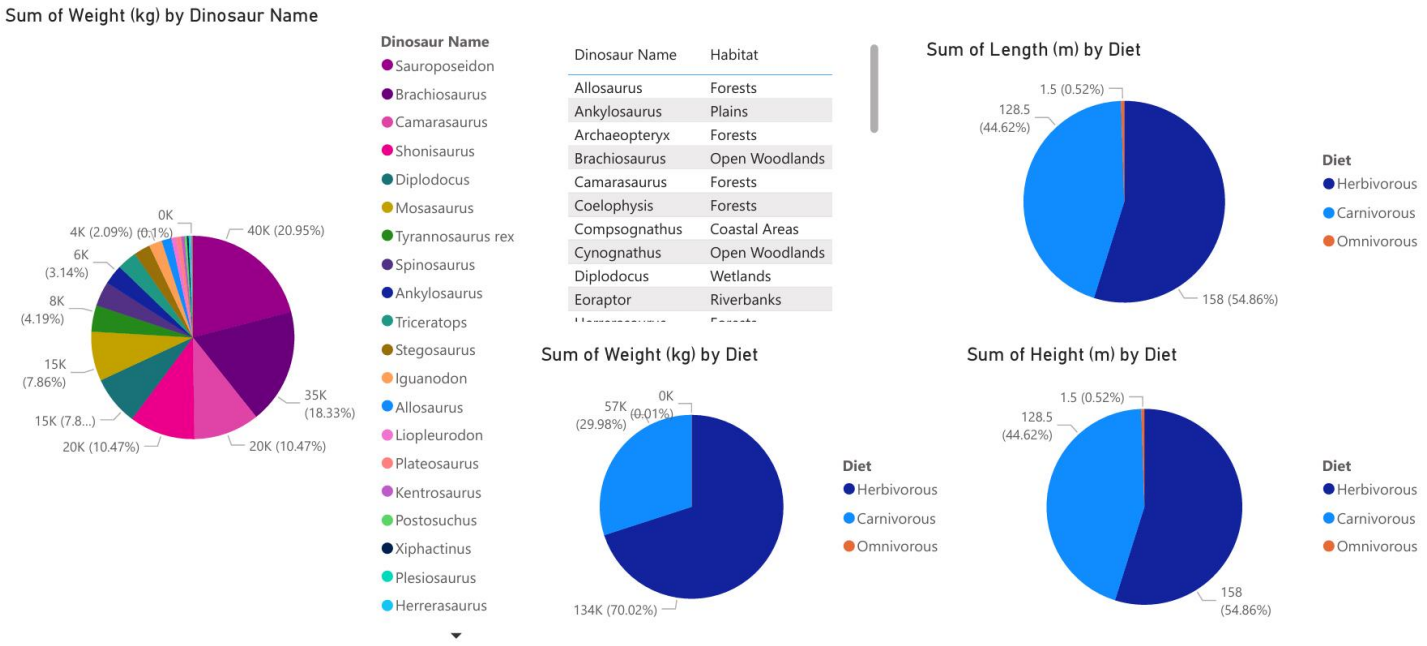
As a Data Analyst, my responsibility was to analyse key metrics about Mesozoic creatures to gain insights into their characteristics, habitats, and trends over time.

My objective was to highlight key findings across diet, size (length, height, weight), habitats, and time periods and to provide actionable insights for understanding evolutionary trends and their environmental adaptations.

My goal was to create visualizations to showcase relationships between diet, physical attributes, and habitats, aiding in research and interpretation.

Dinosaur Size and Diet Breakdown

32	6	3	12
Count of Dinosaur Name	Count of Time Period	Count of Diet	Count of Habitat



Dinosaur Name	Habitat
Allosaurus	Forests
Ankylosaurus	Plains
Archaeopteryx	Forests
Brachiosaurus	Open Woodlands
Camarasaurus	Forests
Coelophysis	Forests
Compsognathus	Coastal Areas
Cynognathus	Open Woodlands
Diplodocus	Wetlands
Eoraptor	Riverbanks

Herbivores dominate in weight (70%) and height, indicating their large size and adaptability to vegetation.

Carnivores account for a smaller portion but are critical predators in their ecosystems.

Weight varies significantly, with **Sauroposeidon** being the heaviest contributor.

Key Features and Habitat Distribution

Dinosaur Name	Key Features	Notes
Velociraptor	Fast, sharp claws, feathered	Agile predator with sharp claws, famous in popular culture.
Plateosaurus	Long neck, herbivorous, large hind legs	Among the first large herbivorous dinosaurs, precursor to sauropods.
Postosuchus	Powerful jaws, carnivorous, semi-upright gait	Apex predator of its ecosystem, competed with early dinosaurs.
Tyrannosaurus rex	Massive jaws, short arms, powerful legs	Apex predator of the Late Cretaceous, iconic for its size and power.
Allosaurus	Apex predator, strong bite, sharp claws	Apex predator of the Late Jurassic, dominated terrestrial ecosystems.
Spinosaurus	Long snout, sail-like structure on back	Aquatic dinosaur with a sail-like structure on its back.
Ankylosaurus	Armored body, club tail, herbivorous	Armored dinosaur with a clubbed tail, highly adapted for defense.
Proterosuchus	Crocodile-like, semi-aquatic, carnivorous	Early archosaur, predecessor to crocodiles and dinosaurs.
Herrerasaurus	Early carnivore, flexible jaws, strong legs	Early carnivorous dinosaur, likely apex predator in its habitat.
Eoraptor	Small size, omnivorous, agile	Early dinosaur, small and agile.
Coelophysis	Lightweight, fast, sharp teeth, pack hunter	Early theropod dinosaur, widespread in North America.
Stegosaurus	Back plates for thermoregulation, spiked tail	Herbivore with tail spikes and back plates.
Kentrosaurus	Spiked back and tail, herbivorous	Herbivorous dinosaur with thumb spikes for defense.
Triceratops	Horns, frill for protection, herbivorous	Horned dinosaur with iconic horns and frilled skull.
Xiphactinus	Large predatory fish, sharp teeth	Known for swallowing prey whole; fossils often show undigested prey in their stomachs.
Pteranodon	Winged reptile, long crest, piscivorous	Large flying reptile, not a dinosaur, known for its wingspan.
Shonisaurus	Marine reptile, streamlined body, flippers	Large ichthyosaur, largest marine predator of the Late Triassic.
Mosasaurus	Marine reptile, powerful jaws, fish-eating	Large marine reptile, dominant predator of Late Cretaceous oceans.
Sauroposeidon	Extremely tall, long neck, herbivorous	Large sauropod, possibly the tallest dinosaur ever discovered.
Tanystropheus	Extremely long neck, piscivorous, semi-aquatic	Long-necked reptile, adapted for aquatic and semi-aquatic life.
Brachiosaurus	Long neck for high browsing, large size	Long-necked sauropod, known for feeding on treetops.
Diplodocus	Long neck and tail, herd behavior	Long-necked sauropod, one of the largest land animals of its time.
Cynognathus	Mammal-like reptile, sharp teeth, agile	Mammal-like reptile, showcasing evolutionary traits pivotal to mammalian history.
Plesiosaurus	Long neck, flippers, piscivorous	Marine reptile with long neck and flippered limbs.
Liopleurodon	Apex predator, strong jaws, marine reptile	Marine reptile, top predator in Jurassic seas.
Rhamphorhynchus	Long tail, winged, fish-eating	Pterosaur with long neck and flippered limbs.
Hybodus	Shark-like, sharp teeth, fast swimmer	Shark-like fish, adapted to both marine and freshwater environments.
Camarasaurus	Shorter neck than other sauropods, herbivore	Short-necked sauropod, common in the Late Jurassic.
Compsognathus	Small, agile, carnivorous	Small carnivorous dinosaur, among the smallest of its time.
Lystrosaurus	Herbivorous, tusks, burrowing adaptations	Survived the Permian extinction, key to early Triassic recovery.
Archaeopteryx	Feathered dinosaur, early flyer, sharp teeth	Transitional species between non-avian dinosaurs and birds.
Iguanodon	Thumb spikes, versatile diet, herbivorous	Versatile diet herbivore with thumb spikes.

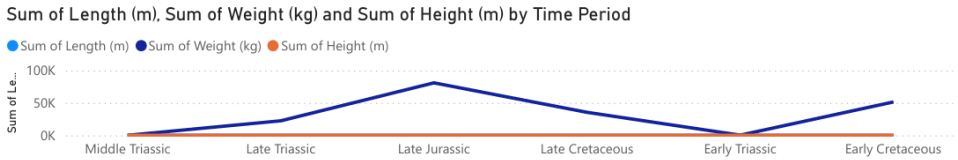
Dinosaur Name	Number of Species at Start	N
Archaeopteryx	~1	~
Sauroposeidon	~1	~
Ankylosaurus	~1	~
Triceratops	~1	~
Tyrannosaurus rex	~1	~
Tanystropheus	~10	~
Iguanodon	~10	~
Spinosaurus	~10	~
Postosuchus	~10	~
Lystrosaurus	~100	~
Hybodus	~2	~
Compsognathus	~2	~
Plesiosaurus	~2	~
Rhamphorhynchus	~2	~
Velociraptor	~2	~
Diplodocus	~2	~
Cynognathus	~20	~
Eoraptor	~3	~
Herrerasaurus	~3	~
Liopleurodon	~3	~
Mosasaurus	~3	~
Stegosaurus	~3	~
Allosaurus	~3	~
Camarasaurus	~3	~
Kentrosaurus	~3	~
Plateosaurus	~3	~
Proterosuchus	~5	~
Brachiosaurus	~5	~
Xiphactinus	~5	~
Coelophysis	~5	~
Shonisaurus	~50	~

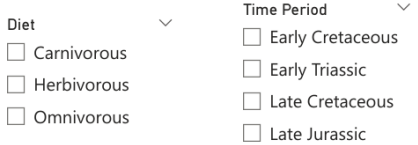
Most dinosaurs thrived in forests, wetlands, and open woodlands, reflecting their dietary needs.

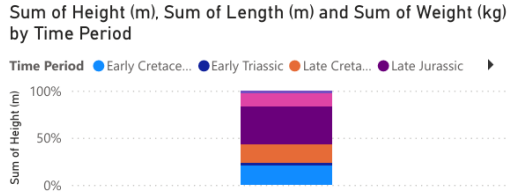
Defensive adaptations (e.g., Ankylosaurus's armored body) are common in herbivores.

Predatory features like sharp claws and teeth dominate carnivorous species.

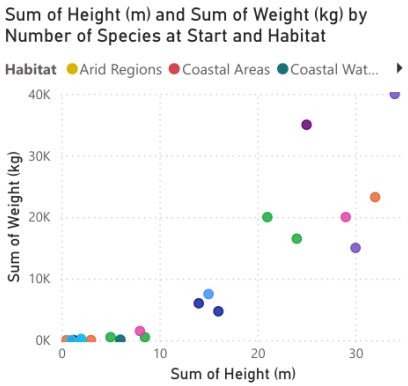
Evolutionary Trends Across Time Periods

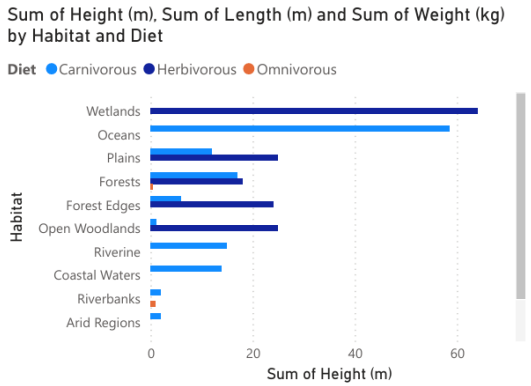


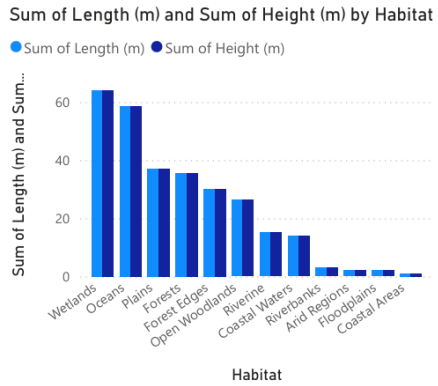




Number of Species at End	Number of Species at Peak	Number
~3	~10	~2
0	~10	~2
0	~10	~3
0	~10	~5
0	~12	~5
0	~12	~6
0	~15	~5
0	~150	~50
0	~20	~10
0	~25	~10
0	~3	~1
0	~30	~10
0	~300	~100
0	~4	~1







Size increases peaked during the Late Jurassic, coinciding with environmental changes.

Species diversity dropped during certain periods, likely due to extinction events.

Wetlands and forests supported the largest dinosaurs in terms of weight and height.