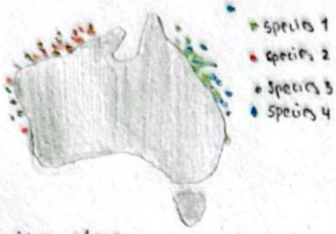
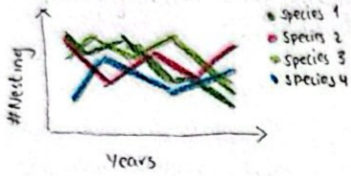
IDEAS

Author: Sinan Ummu
Date: 29/09/2025
Sheet: 1
Task: Brainstorm different types of charts.

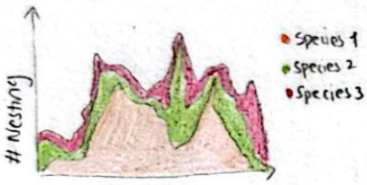
① Map
Nesting Sites



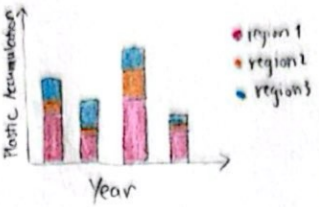
② Line chart
Nesting Trends Over Time



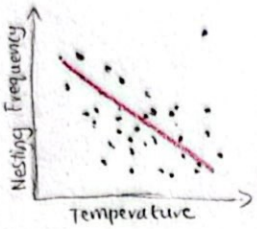
③ Area Chart
Nesting Trends Over Time



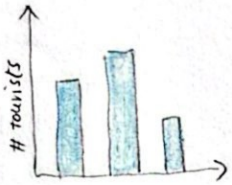
④ Stacked Bar Chart
Plastic Pollution Impact



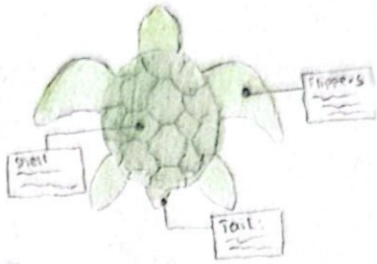
⑤ Scatterplot
Climate vs Nesting



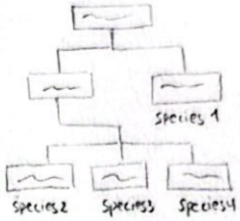
⑥ Bar Chart
Tourism



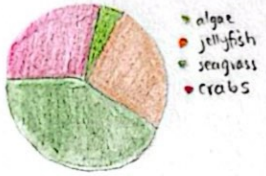
⑦ Diagram
Labelled Turtle



⑧ Dichotomous Key:
Species Identification:

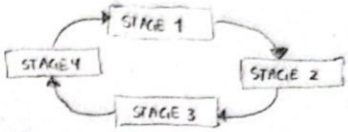


⑨ Pie Chart
Diet Composition

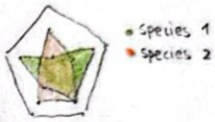


⑩ Bubble Chart
Predators / Threats

⑪ Life Cycle

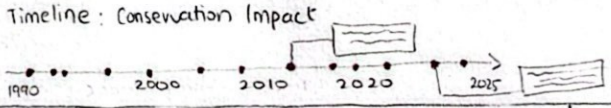


⑫ Radar Chart
Species Characteristics



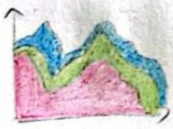
⑬ Histogram
Size distribution

⑭ Timeline: Conservation Impact



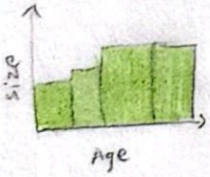
FILTER

① Area Chart



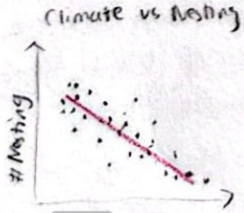
→ Very similar to the line chart. The line chart is more intuitive for a general audience compared to an area chart.

② Histogram
Size distribution.



→ Might not tie in well with the rest of the visualisation and could become too scientific or a distraction from the storytelling.

③ Scatterplot
Climate vs Nesting



→ Might be too complex or data heavy for a general audience. A dual axis line + bar chart could be a better way of representing this.

CATEGORISE

① Know the turtles
- Diagram
- Species identification
- Diet composition
- Life cycle.

② Where turtles live and move.
- Map of nesting sites
- Nesting trends
- Climate vs nesting

③ What threats they face.
- Threats dashboard with predators + pollution + other threats.

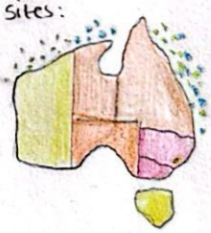
④ Protecting Turtles
- Timeline of conservation impact (laws, projects, milestones).

QUESTIONS

- How to balance scientific accuracy with accessibility so the visualisation is not overwhelming for non-experts?
→ Use a interactive layered approach starting with simplified diagrams and letting users click or hover for more details.
- Should natural and human threats be separated or combined in a threats section?
→ Separating is more effective as it shows how human activity contributes disproportionately to turtle decline. These could be separated as sub-sections to make everything cleaner and more intuitive.

COMBINE AND REFINE

① Bar chart of tourism + map of nesting sites:

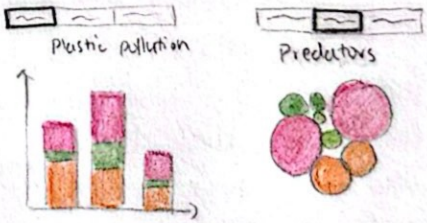


→ can combine tourism and nesting data onto a single map to show tourism intensity vs nesting sites.

② Diagram.

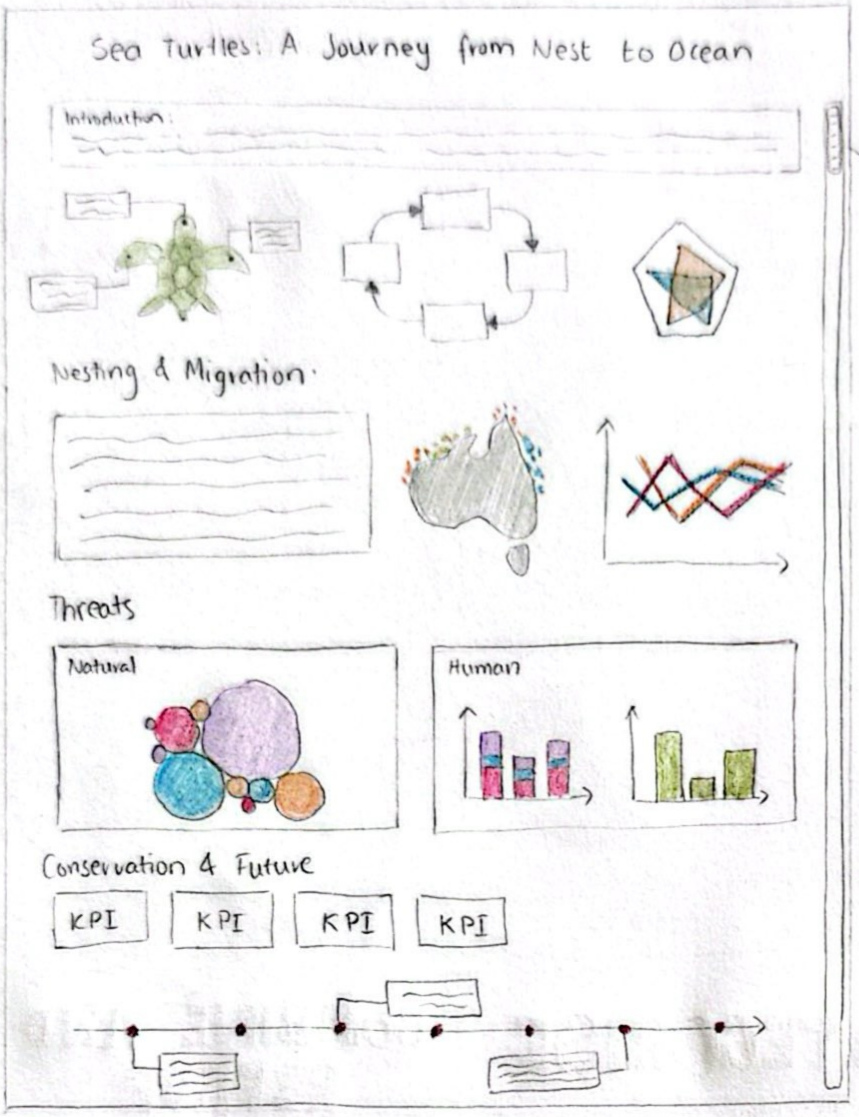
→ Making the diagram interactive by allowing users to click or hover to see more details instead of making it a static labelled diagram

③ Predators / Threats + Plastic pollution.



Combining the threats into a separate dashboard or section, with toggle switching features.

LAYOUT

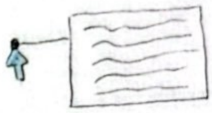


Author: Sinan Ummm
Date: 30/09/2025
Sheet: 2
Task: Plan first layout idea.

OPERATION

- Scrolling interaction: Users can scroll down and view the sections in order, to experience a narrative feel to the visualisation.

Dropdowns to select turtle species, or other attributes allow users to filter the charts.



Hover Tooltips for charts like the time-line provide extra information. They help with better understanding and delving deeper into the charts.

Section Flow Examples:

Introduction → Turtle diagram
Habits / Nesting → Nesting Site Map
Movement → Migration Routes
Threats → Pollution / Tourism charts
Conservation → Timeline of major events and conservation efforts.

FOCUS

- The layout tells a linear story about sea turtles from top to bottom, guiding the user like a narrative.
- Each section introduces a theme (sea turtle information → Threats → conservation), with charts placed in sequence.
- The goal is to make the visualisation easy to follow for a general audience, similar to a documentary but in a web format.
- The visualisation will be interactive, allowing users to filter based on species or hover for tooltips that display more details. This way there is enough information and detail without information overload.

DISCUSSION

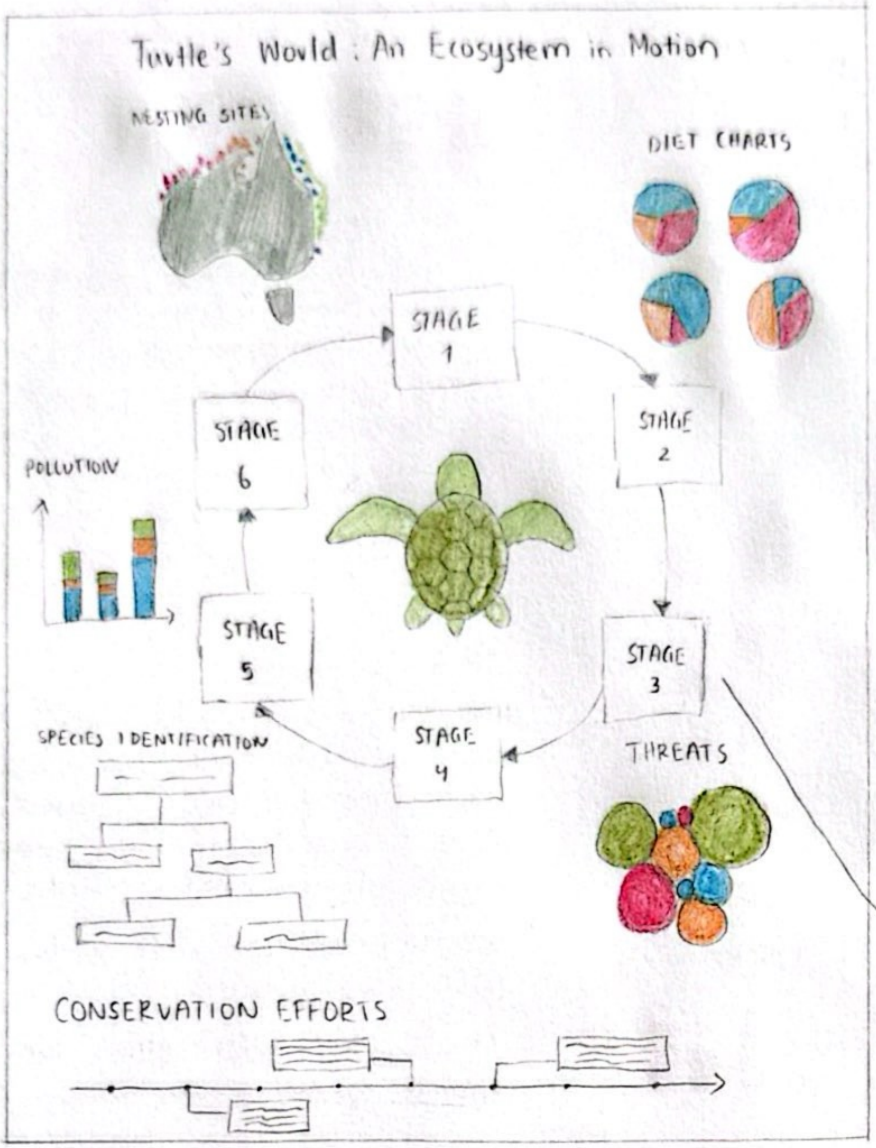
Advantages:

- Clear storytelling: Easy for a non-technical audience to follow.
- Engaging narrative: Mirrors how articles and documentaries present information.
- Logical order: Users get background → science → problem → solutions.

Disadvantages:

- Less interactive exploration: Users can't easily jump between sections.
- Long scrolling: Risk of users losing interest if page is too long.
- Comparisons harder: Hard to view different sections together for comparison.
- Not ideal if users want to explore data in their own order.

LAYOUT



Author : Sim...
Date : 30/09/2025
Sheet : 3
Task : Plan second layout idea

OPERATION

Central Turtle Diagram:
This central diagram is interactive. It allows users to hover over its different parts to see more detail relating to its anatomy.

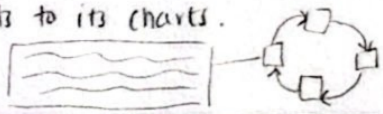
Hover / Click Features

Clicking of different stages of the life cycle highlights relevent charts to help make that section clearer.

Filter options

There are options to filter data based on the species, so users can focus on specific species at a time.

Life Cycle Stages:
These stages can be expanded for more details and to see how this stage connects to its charts.



FOCUS

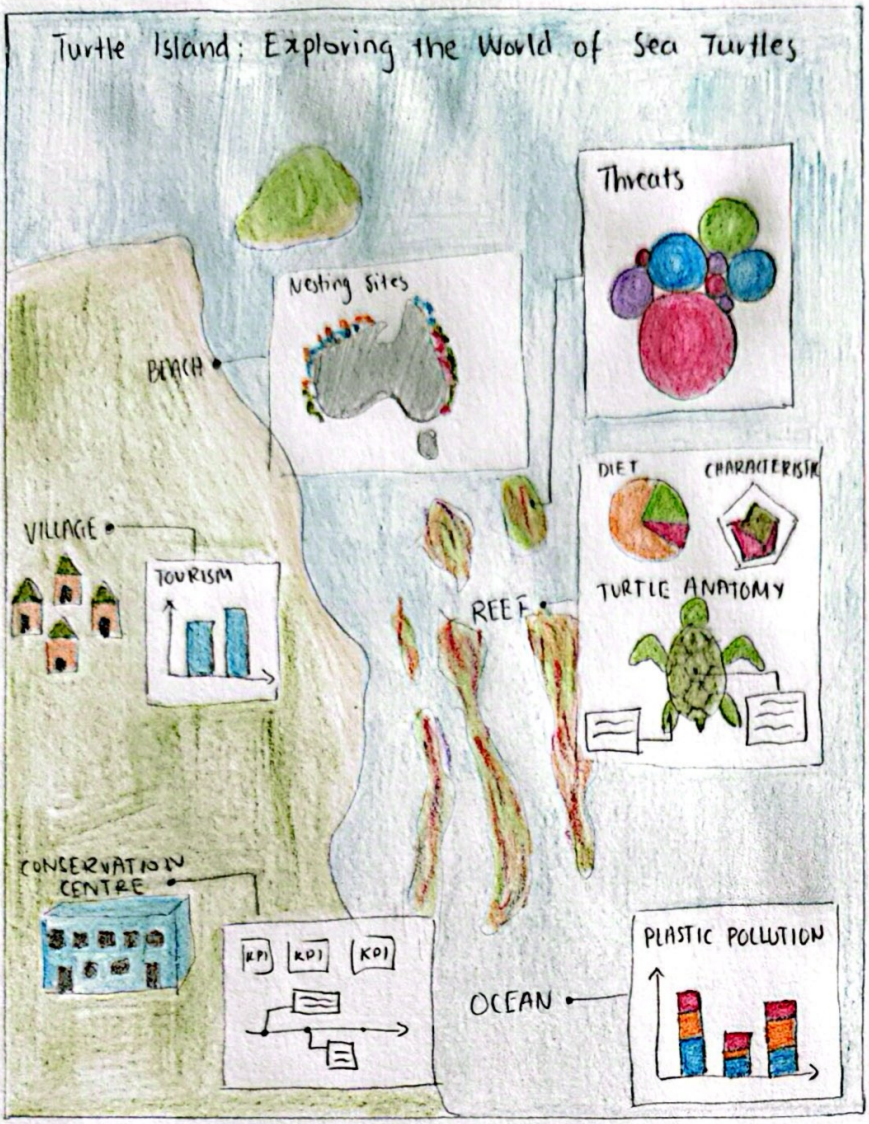
- The design represents a sea turtle as the centre of the ecosystem with their life cycle around it. The different data and charts are placed around the life cycle based on the stages and their relevance.
- Highlights the interconnectedness of turtle biology, habitats, threats, and conservation.
- Provides a visual metaphor that everything in the turtles world connects back to the turtle itself.

DISCUSSION

Advantages:
- Unique radial design will stand out and be highly memorable.
- The circular design with sections and charts shows relationships between sections and makes the turtle–ecosystem connection clearer.
- Users aren't forced into a linear data exploration order.

Disadvantages:
- Risk of visual clutter with multiple charts.
- Some charts may need to be simplified to fit everything.
- May become confusing without a linear narrative.
- Harder to implement.

LAYOUT



Author: Sinan Ummu
Date: 30/09/2025
Sheet: 4
Task: Plan third layout idea.

OPERATION

- Island Map as navigation:
  - Beach zone → Nesting site map, nesting trends line chart.
  - Ocean zone: plastic pollution
  - Reef zone: turtle anatomy, diet, characteristics, threats, etc.
  - Human village zone: Tourism.
  - Conservation zone: Timeline and KPIs of major conservation efforts.
- Click to zoom:
  Clicking on an island zone will zoom into that area and present the full charts related to that area along with some texual information for clarity.
- Hovering over charts or zones gives more details.
- Charts have filter options, for example, species filter.

FOCUS

- The page is designed like an illustrated map of an island and ocean, where different zones hold different charts.

- The goal is to make the visualisation feel like exploring an environment, mirroring how turtles interact with beaches, oceans, reefs, and human activity.
- Each region ties data back to real-world turtle habitats, threats, and conservations.

DISCUSSION

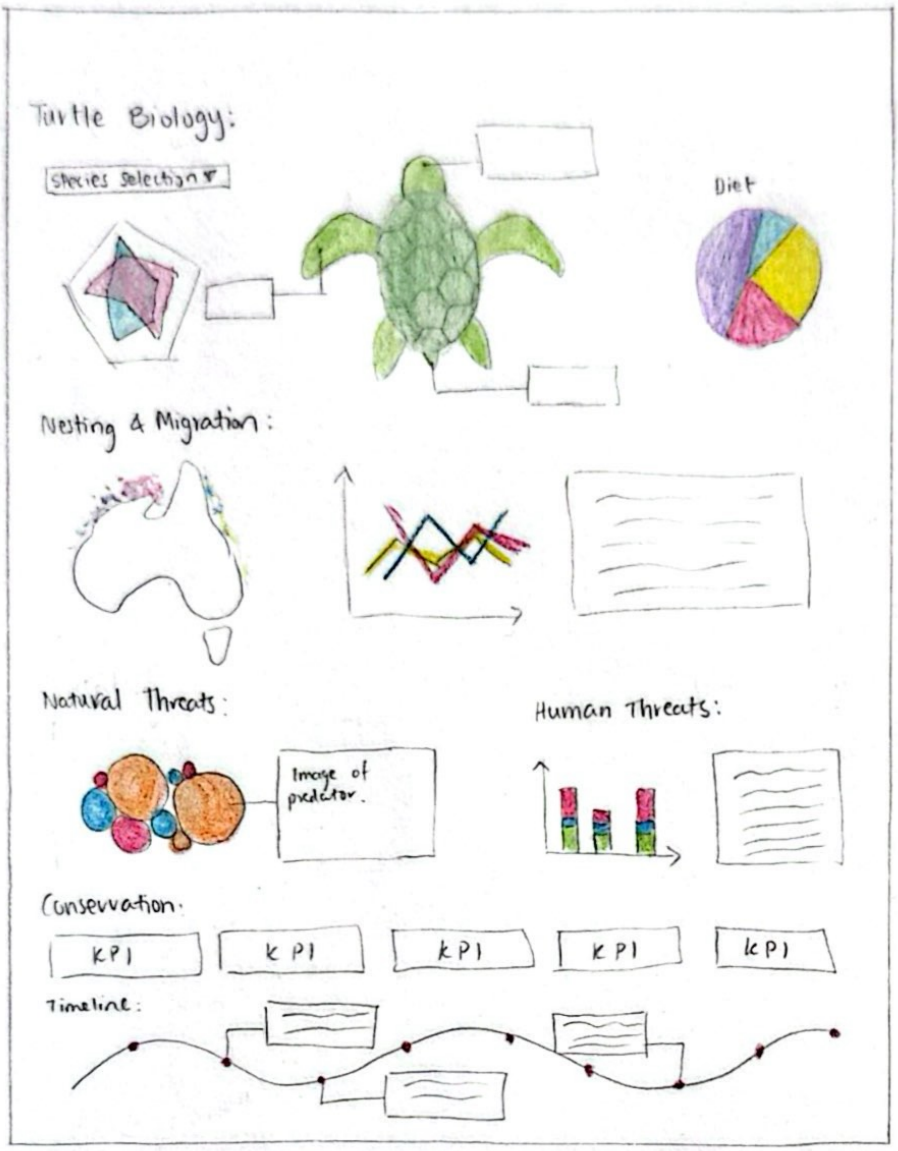
Advantages:

- The island can make it engaging and memorable.
- Geographic storytelling fits well since turtles move on beaches and oceans.
- Users feel like they are exploring as they move through different zones.

Disadvantages:

- Harder to implement
- Some users may not immediately realise they can click and zoom into sections.
- Charts may need to be simplified and resized if space is not enough.

LAYOUT



Author: Sinan Umma
Date: 06/10/2025
Sheet: 5
Task: Finalise a layout for data visualisation 2.

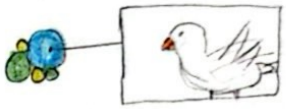
OPERATION

species selection Species selection dropdown:

- Updates all charts under the turtle biology section based on the chosen species.

Threats:

The bubble chart will have tooltips that not only explain the threat but also provide images of the predators.



Conservation:

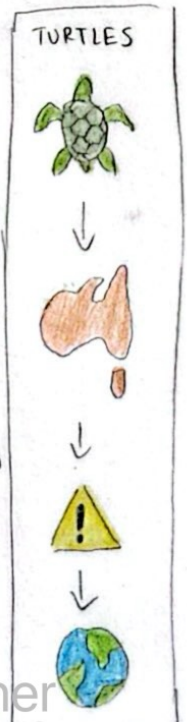
This section will contain a wave-shaped timeline showing conservation projects and achievements.

Interactive tooltips:

Provides details for all charts, filters update multiple charts simultaneously

FOCUS

- A vertical scrolling narrative with creative internal sections that are visually engaging.
- Combines radial elements, maps, and thematic storytelling for turtle biology, nesting, threats and conservation
- Highlights the interconnectedness of the turtle and its ecosystem while remaining clear and educational.
- Will include a call for action at the bottom to ensure the audience is made aware on how they can contribute to conservation efforts and remain informed.
- The aim is to encourage action after education.



DISCUSSION

The visualisation will be built using vega-lite for charts and interactions, combined with HTML and CSS. Javascript may be used for filters or hover interactions.

The implementation will include linked interactions, like species selection.

A charts will be sized for readability on laptop screens, and total data load will remain under 1MB for fast loading.

It is estimated that this will take around 10 days to implement, including data preparation, chart creation, layout design and testing.