IDEAS

① Heatmap

Australia

② Line Chart

No. of Fires

Date

③ Stacked Area Chart

Forest Types

Date

④ Chord Diagram

VIC   SA
ACT   NT
TAS   WA
NSW   QD

⑤ Sankey Diagram

Forest Types — Forest Types

⑥ Pie Chart

DAY VS. NIGHT

⑦ Scatter Plot

FRP

Areas affected

⑧ Bubble Chart

Region

Fire intensity
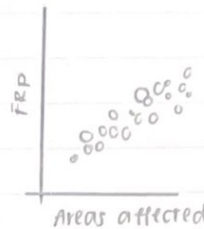
⑨ Treemap

Affected Areas
by Forest Type

Forest
type

⑩ Bar Chart

Total Forest Area Burnt

Region
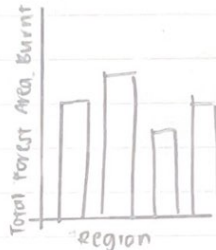
FILTER ↓

④⑤ → Data is not quite suited for Chord + Sankey diagram.
   → complex and limited flow representation

⑦⑧ → Lack of geospatial content. Difficulty in showing temporal trends.

⑨ → Not very informative/irrelevant.

CATEGORISE ↓

① , ② + ⑥ , ③ + ⑩

↓

COMBINE + REFINE

→ ① Geographical heatmap can be used as a central visualisation to represent geographical distribution of fire intensity.

→ ② + ⑥ Line and pie chart provides a dual perspective showing temporal progression and proportion of day vs. night.

→ ③ + ⑩ Stacked area chart can be turned into a stacked bar chart instead. Showing forest area burnt by region.
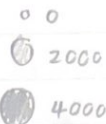

Regions

Forest Area burnt
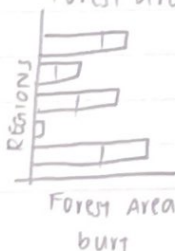
QUESTION ↓

- Should I priorinse showing the geographical spread of fires, temporal progression or relationship between variables

- Can I combine more different visualisation types to present the data more effectively?

LAYOUT

BUSHFIRE INTENSITY HEATMAP

Fire Intensity
- ○ 0
- ◐ 2000
- ● 4000

OPERATIONS

- Circle size represents magnitude of the fire
- Colour scale ranges from light red to dark red
- Hovering over a circle displays information about the fire incident, FRP and date
- Drop down menu provides a closer view and isolates selected states affected
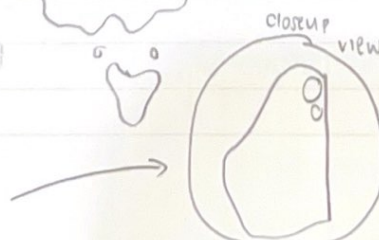
FOCUS

Dropdown menu filter of states

↓

Select Region

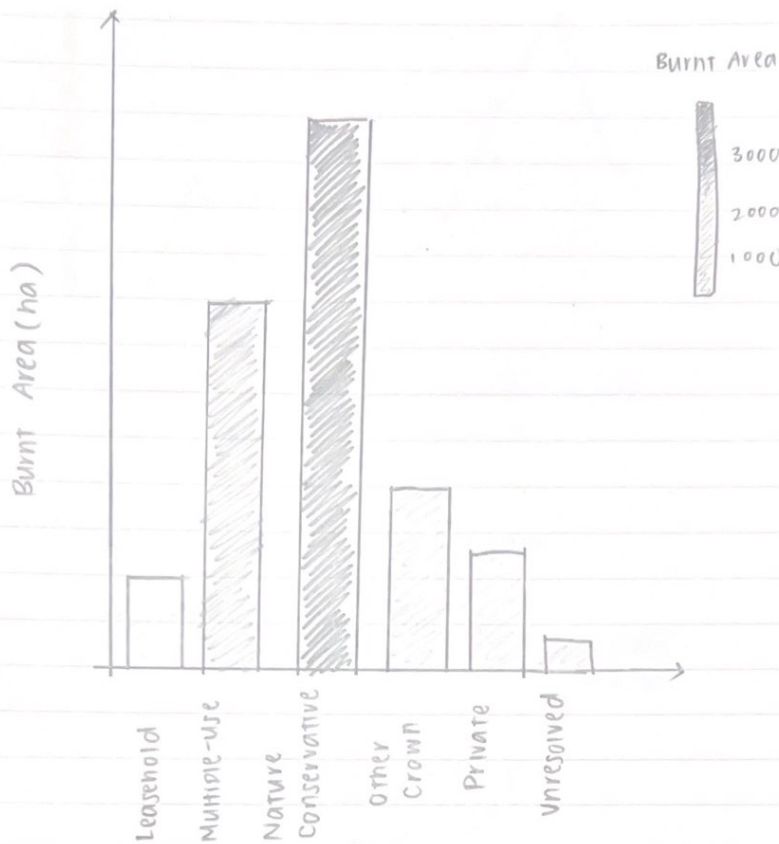| VIC	∨
NSW	
ACT	

closeup view

DISCUSSION

Advantages
✓ Effectively shows geographical spread of fire intensity
✓ simple and quick understanding of dataset

Disadvantages
✗ Rendering might be an issue

LAYOUT

Forest Area Burnt by Forest Tenure

Title: FIT3179 - Data
   Visualisation II
Author: Joanna Moy
Date: 10/04/2024
Sheet: 3
Task: Bar Chart

Burnt Area

3000
2000
1000

Burnt Area (ha)

Leasehold
Multiple-Use
Nature Conservative
Other Crown
Private
Unresolved

OPERATIONS

- Users can hover over a bar to view additional information
- The chart includes filters that dynamically updates the data shown
- Dropdown menu filters by Region (states)
- Bars are colour coded in a gradient to signify the intensity of the fire

FOCUS

Select Region [VIC v]

Dropdown menu filter
Filter by states
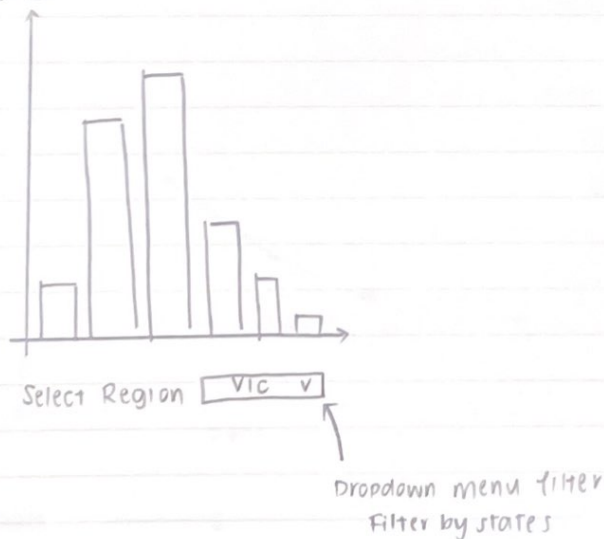
DISCUSSION

Advantages
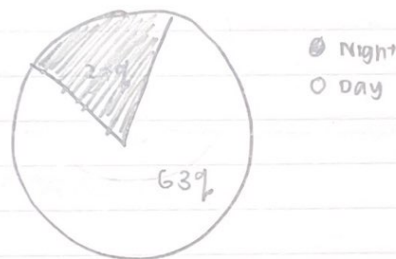✓ Easy to compare total area burnt across different regions/forest types

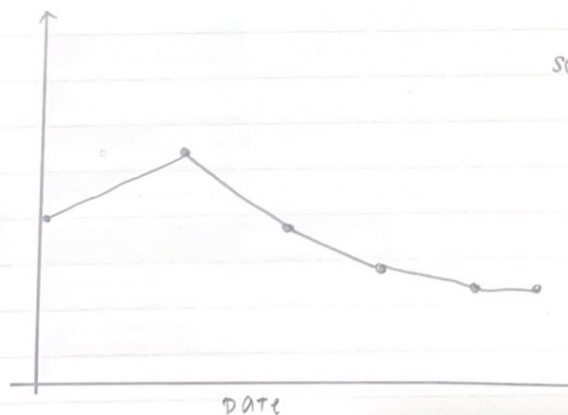### Disadvantages
✗ Limited to simple comparisons
✗ Less dynamic

LAYOUT

Fire Incidents over Time

Day vs Night Detection

- ◕ Night
- ○ Day

63%

FOCUS

Filters chart by
Day or Night
↓
Select Day or Night
☑ Day
☐ Night

Start Date ———◻——— End date
↑
Date range slider to view
data upclose

Title: FIT3179- Data
Visualisation II
Author: Joanna Moy
Date: 10/04/2024
Sheet: 4
Task: Fire Incidents
Distribution

OPERATIONS

- Users can hover over individual data points to get detailed information from the tooltip.
- The line chart includes a date range filter, allowing users to focus on specific time periods for a more detailed view
- Data points on line chart can also be categorised as Day or Night incidents.
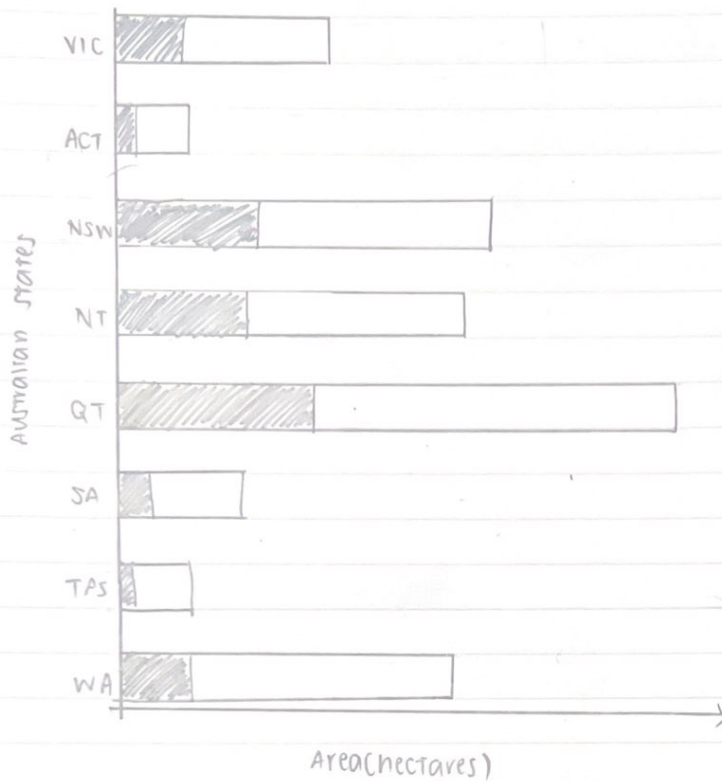
DISCUSSION

Advantages
- ✓ Straightforward visualisation
- ✓ Quick proportional comparisons.

Disadvantages
- ✗ Limited to few categories
- ✗ No time dimension for pie chart

LAYOUT

Burnt Forest Area vs. Total Forest Area
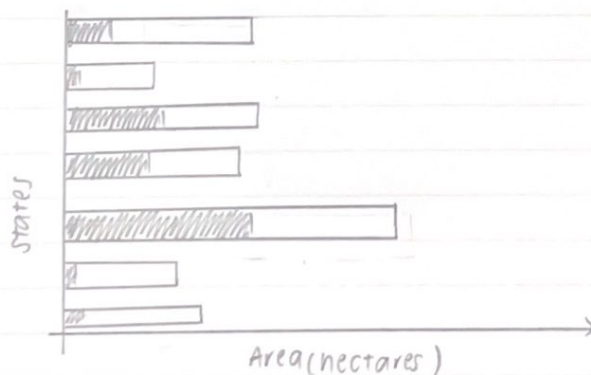

Australian States — VIC, ACT, NSW, NT, QT, SA, TAS, WA

Area(hectares)

OPERATIONS

- Chart uses color-coded segments to differentiate between the area and proportions burnt.
- Users can hover over each segment of the bar to see detailed information
- The chart include filters of different forest types.

FOCUS

States

Area(hectares)

Select Forest Type | Native ∨ |
| Commercu |
| Other |

↑
Dropdown menu filter for forest types

DISCUSSION

Advantages
✓ Clear comparison
✓ Visualises proportions and totals

Disadvantages
✗ Color coding may be ineffective and confusing.