Jielin’s Process

Infographic Generation and Authoring Tool （大家也可以帮我起个好名字）

Preliminary Study and Motivation

Expert Interview

- 8 Experts

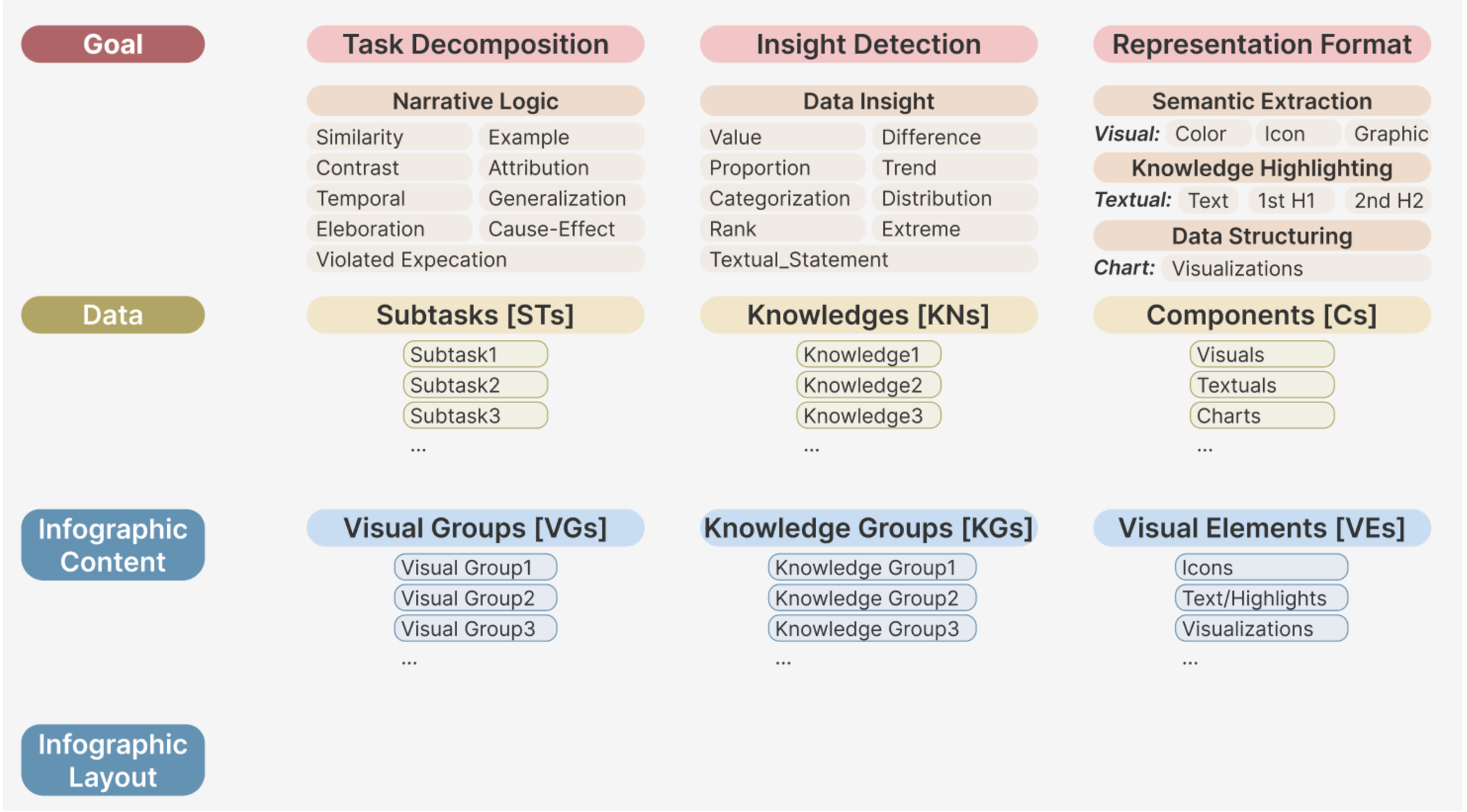
	Age	Gender	Background	Expertise	Frequency	Tool
E1	39	Male	Designer/Technical	10 yrs+	1/Season	JS，D3，Keynote
E2	24	Female	Industrial Designer	2 yrs	1/Season	PS，AI，Online-Source
E3	30	Female	Industrial Designer	3 yrs	2-3/Year	PS，Online- Source
E4	35	Female	Industrial Designer	10 yrs+	1/Month	Canva，稿定设计
E5	27	Female	Industrial Designer	5 yrs	1/Month	Figma，AI
E6	25	Female	Industrial Designer	3 yrs	1/Month	Excel，Feishu
E7	21	Male	Student	2 yrs	1/Month	Chiplot，AI
E8	22	Female	Student	3 yrs	1/Month	R，Excel，Matlab，Feishe

Preliminary Study and Motivation

Expert Interview

- Data： **（Long/Fragmented）Textual Data** （7）， Tabular Data（6）
  - **Motivation**: To meet the needs of real-world users, the system should supports the **input of long/fragmented textual statements**, rather than being limited solely to tabular data.
- Process： **Goal** -> Data -> Inspirations (Graphic, Color, Online-resources…) -> Visualizations -> Designs of Inspirations -> Layout -> Modification
  - **Motivation**: In addition to text-based input, users often have a specific goal, rather than just general information about xxx. Therefore, we need to **incorporate the input of users' specific goals alongside the text input.**
- Challenge:
  - 1. Goal -> Data (Handel Long statement, Data Searching, Data Processing, Data Structuring, Data Highlighting)
  - 2. Goal + Data -> Inspirations and Design
  - 3. Goal + Data -> Visualizations
  - 4. Goal + Data -> Layout
    - **Motivation：** **Aligning User Goals and Textual Data with Infographic Design**， Developing an Infographic Generation Tool.

Framework

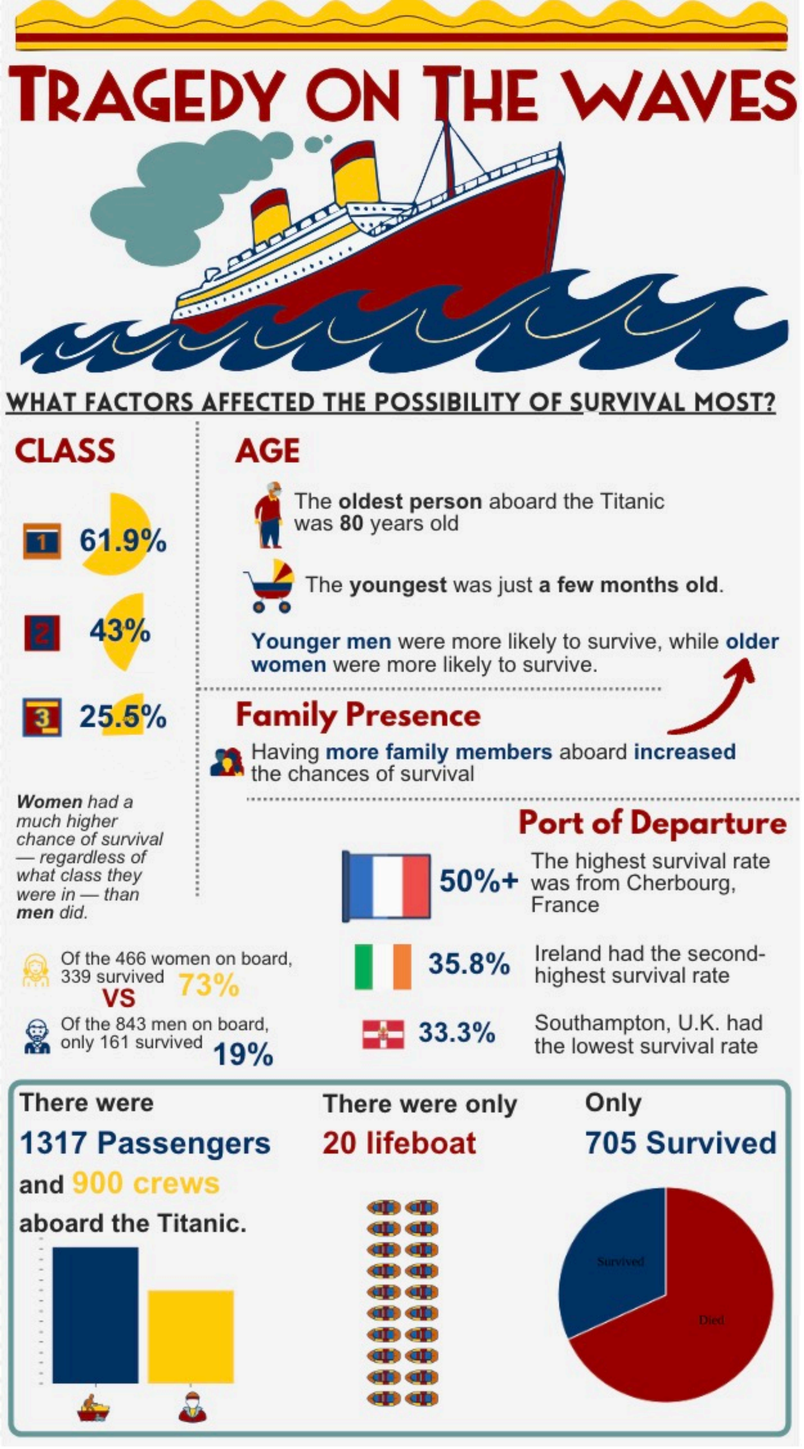

Goal
Task Decomposition
Insight Detection
Representation Format
Narrative Logic
Similarity
Example
Contrast
Attribution
Temporal
Generalization
Eleboration
Cause-Effect
Violated Expecation
Data Insight
Value
Difference
Proportion
Trend
Categorization
Distribution
Rank
Extreme
Textual_Statement
Semantic Extraction
Visual: Color Icon Graphic
Knowledge Highlighting
Textual: Text 1st H1 2nd H2
Data Structuring
Chart: Visualizations
Data
Subtasks [STs]
Subtask1
Subtask2
Subtask3
...
Knowledges [KNs]
Knowledge1
Knowledge2
Knowledge3
...
Components [Cs]
Visuals
Textuals
Charts
...
Infographic Content
Visual Groups [VGs]
Visual Group1
Visual Group2
Visual Group3
...
Knowledge Groups [KGs]
Knowledge Group1
Knowledge Group2
Knowledge Group3
...
Visual Elements [VEs]
Icons
Text/Highlights
Visualizations
...
Infographic Layout

Fast Prototype

- Source Data：https://www.history.com/topics/world-war-ii/world-war-ii-history
- Goal：What are deaths and casualties in World War II ?

Fast Prototype

- Source Data：Provided By Qianhui
- Goal：What factors affected the possibility of survival most?



Input your GOAL

Upload

Title: Tragedy On the waves

Visual Group 1 *Generalization*

Subtitle:
Overview of Titanic

Knowledge1: H1 H2 Icon
There were 1317 **Passengers** and 900 **crews** aboard the Titanic

Keyword: **Visualization:**

Knowledge2: H1 H2 Icon
There were only 20 lifeboat

Keyword: **Visualization:**

Fill

Example

Visual Group 2 *Elaboration*

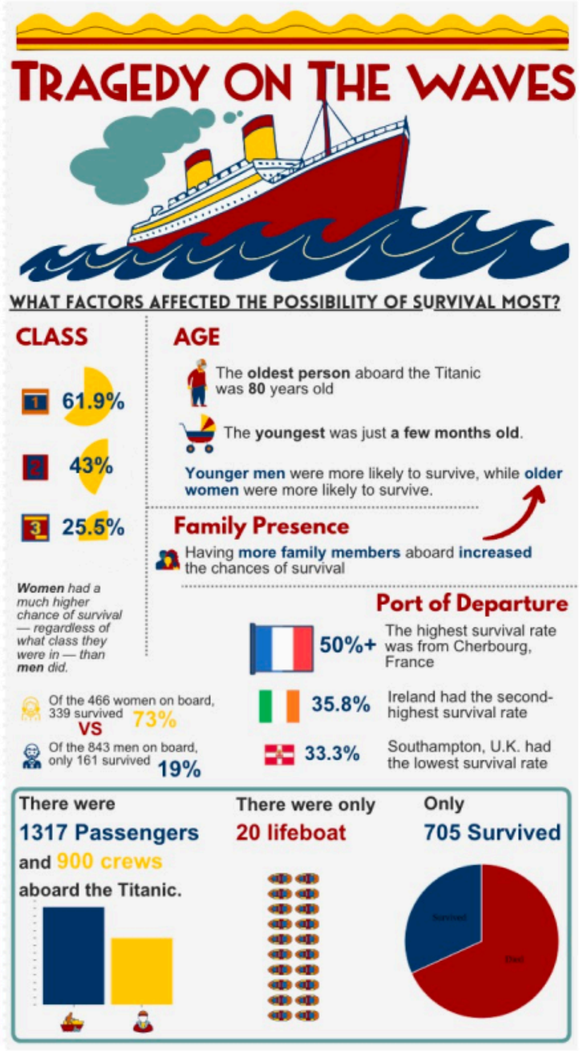
Subtitle:
Class Factor

Knowledge1: H1 H2 Icon
61.9% survived are in first class

Keyword: **Visualization:**

Knowledge2: H1 H2 Icon
43% survived are in second class

Keyword: **Visualization:**



Aa
H1 Font Text Font

Submit

- VG5 - Highlight3: 33.3%
- VG5 - Text1: The highest survival rate..
- VG5 - Text2: Ireland has the second...
- VG5 - Text3: Southampton, U.K. had.....
- VG5 - Icon1
- VG5 - Icon2
- VG5 - Chart1
- Background

Aa Font Size

Title

Visual Groups1

Subtitle

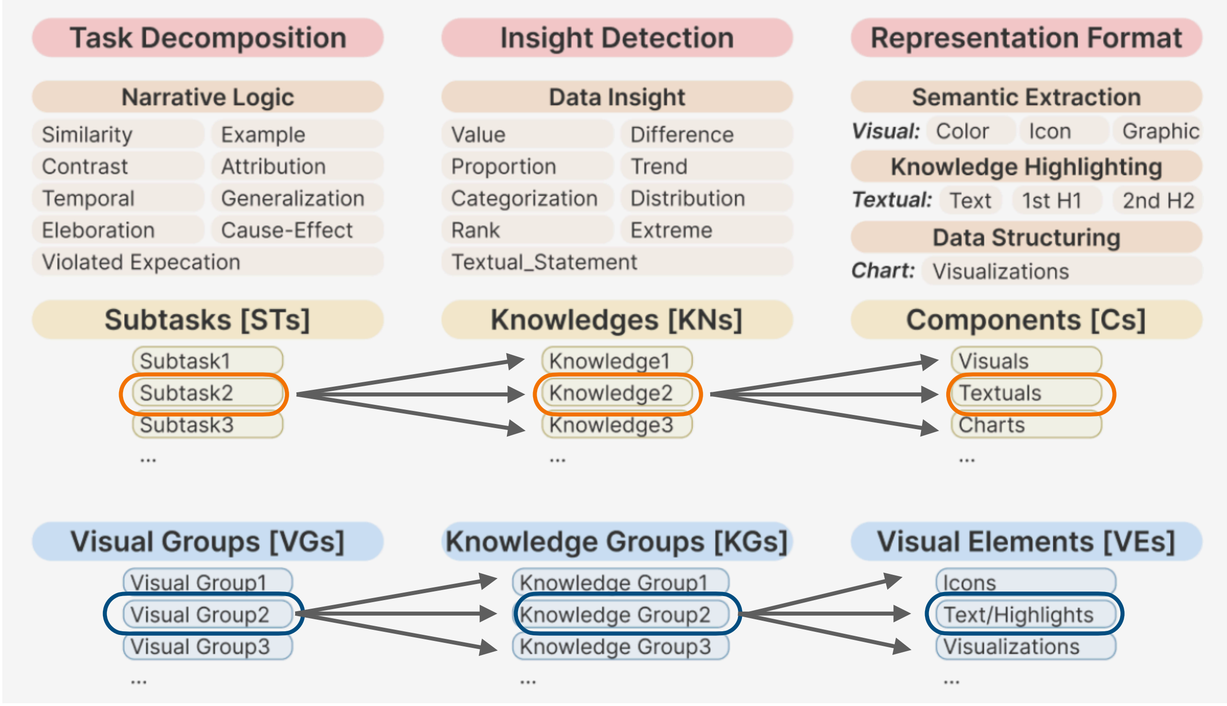
Knowledge Group1

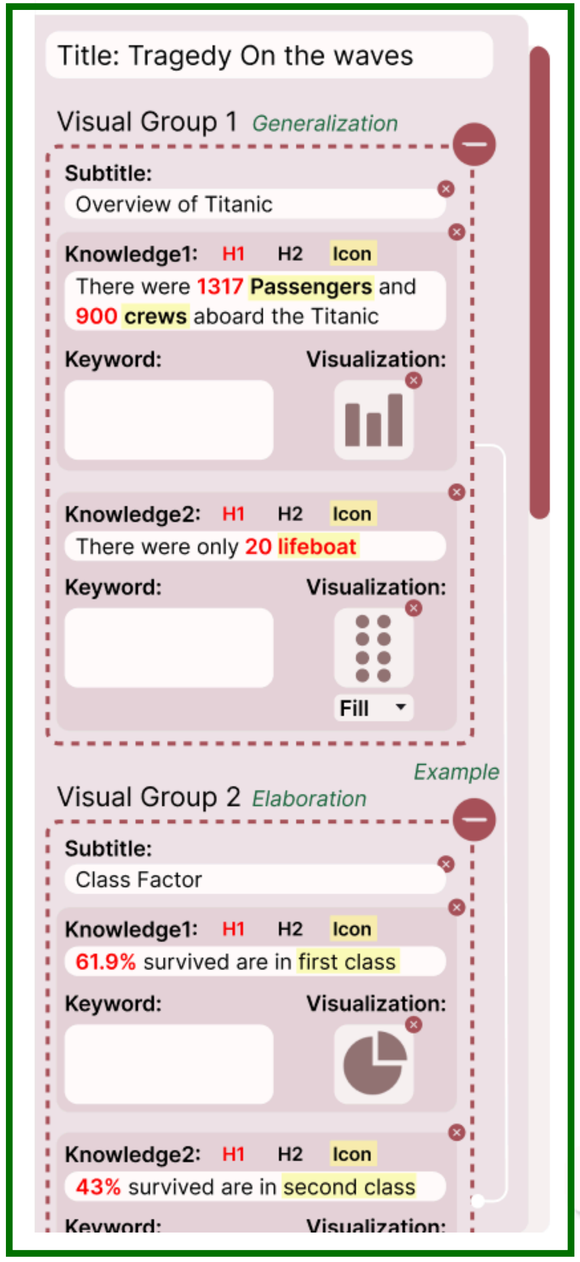
Text

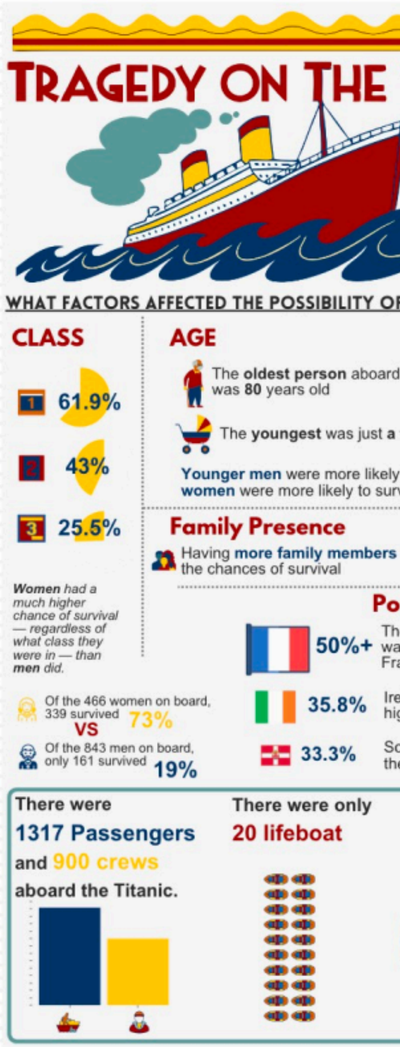
Highlight

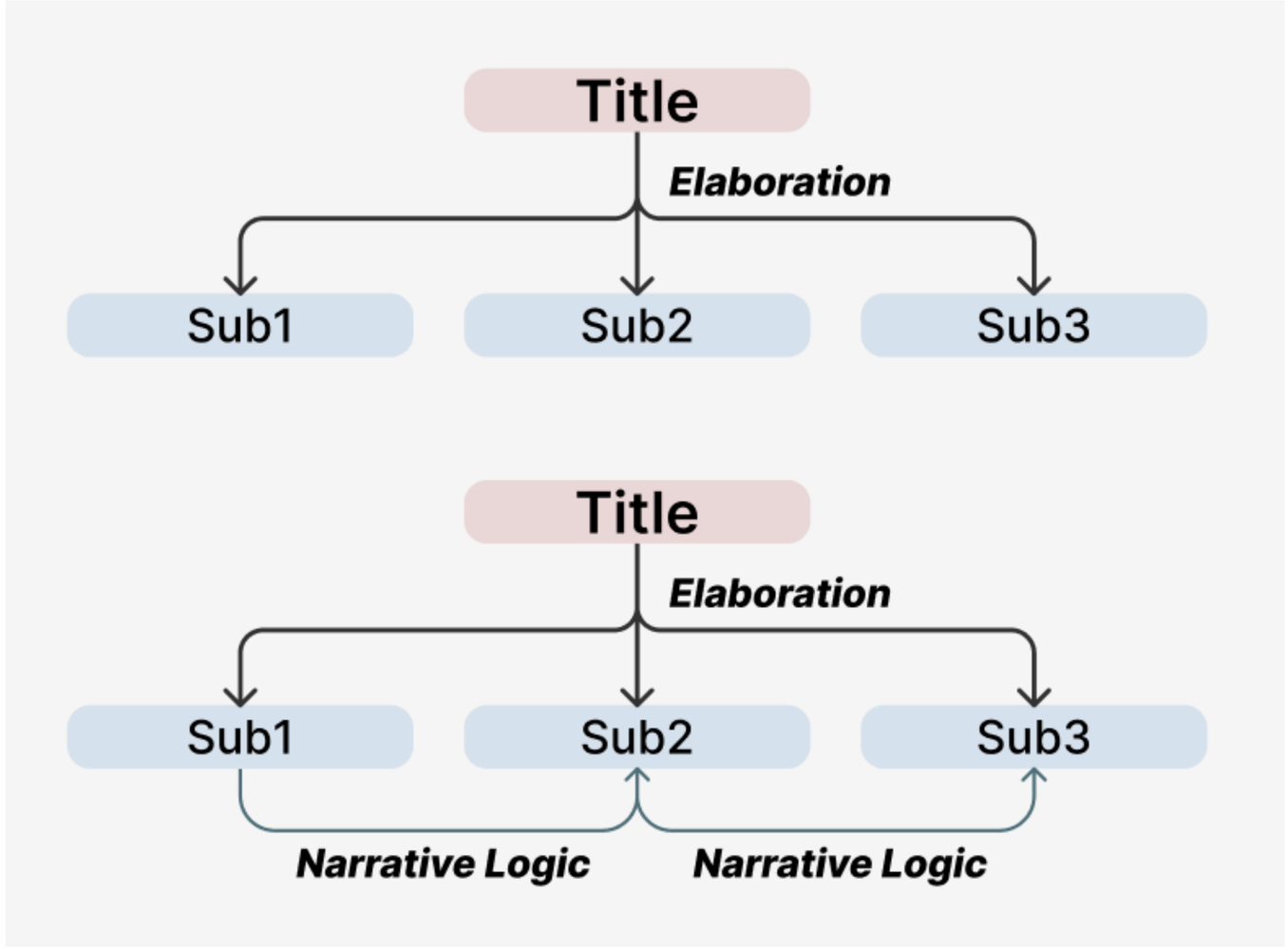
Icon Keyword

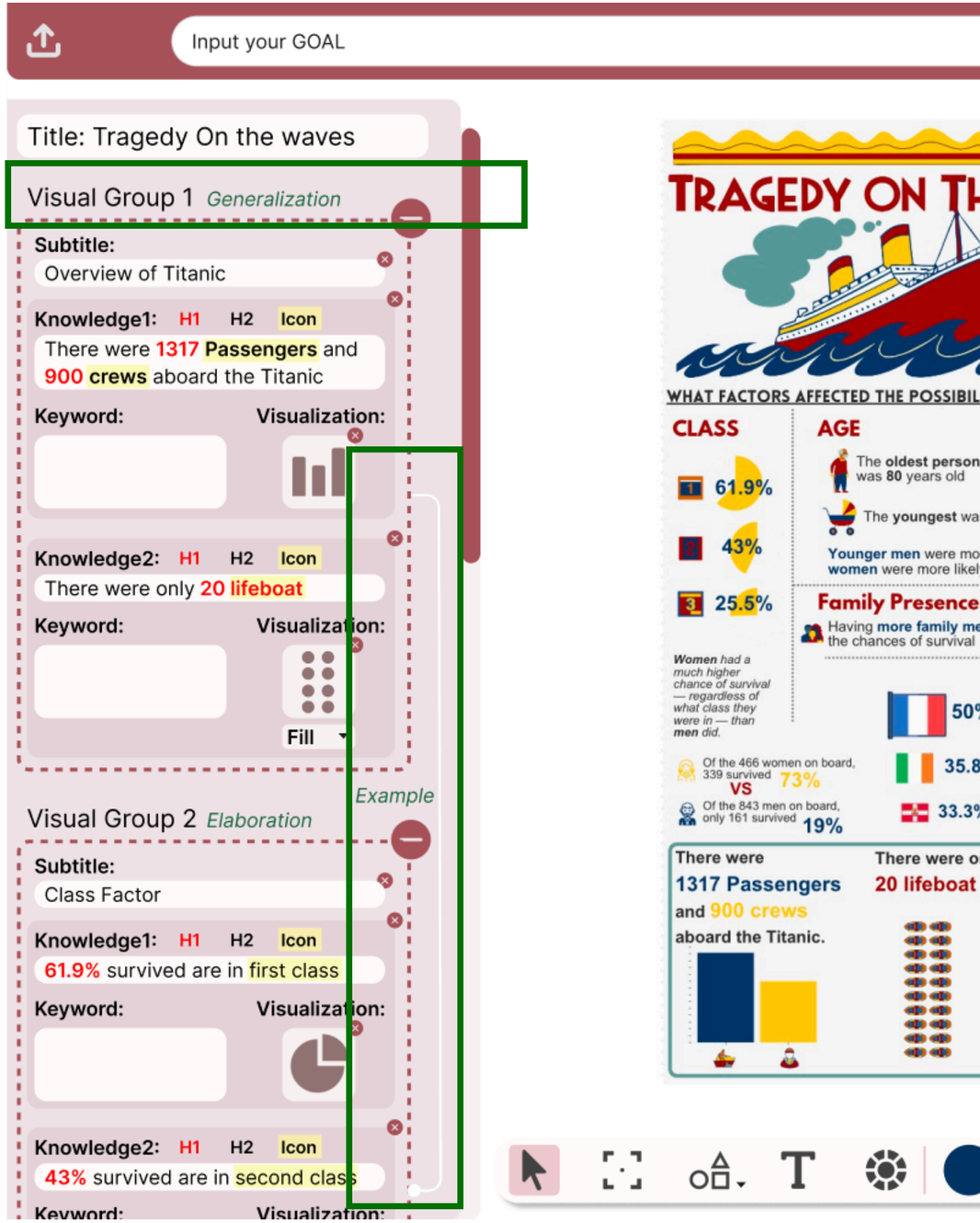
Vis Template








Title
Elaboration
Sub1
Sub2
Sub3
Title
Elaboration
Sub1
Sub2
Sub3
Narrative Logic
Narrative Logic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Keyword:
Visualization:
Knowledge2: H1 H2 Icon
There were only 20 lifeboat
Keyword:
Visualization:
Fill
Example
Visual Group 2 Elaboration
Subtitle:
Class Factor
Knowledge1: H1 H2 Icon
61.9% survived are in first class
Keyword:
Visualization:
Knowledge2: H1 H2 Icon
43% survived are in second class
Keyword:
Visualization:
TRAGEDY ON TH
WHAT FACTORS AFFECTED THE POSSIBIL
CLASS
AGE
61.9%
43%
25.5%
The oldest person was 80 years old
The youngest wa
Younger men were mo
women were more likel
Family Presence
Having more family me
the chances of survival
Women had a much higher chance of survival — regardless of what class they were in — than men did.
Of the 466 women on board, 339 survived 73%
VS
Of the 843 men on board, only 161 survived 19%
There were
1317 Passengers
and 900 crews
aboard the Titanic.
There were o
20 lifeboat

Input your GOAL

Upload

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Visualization:

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Example

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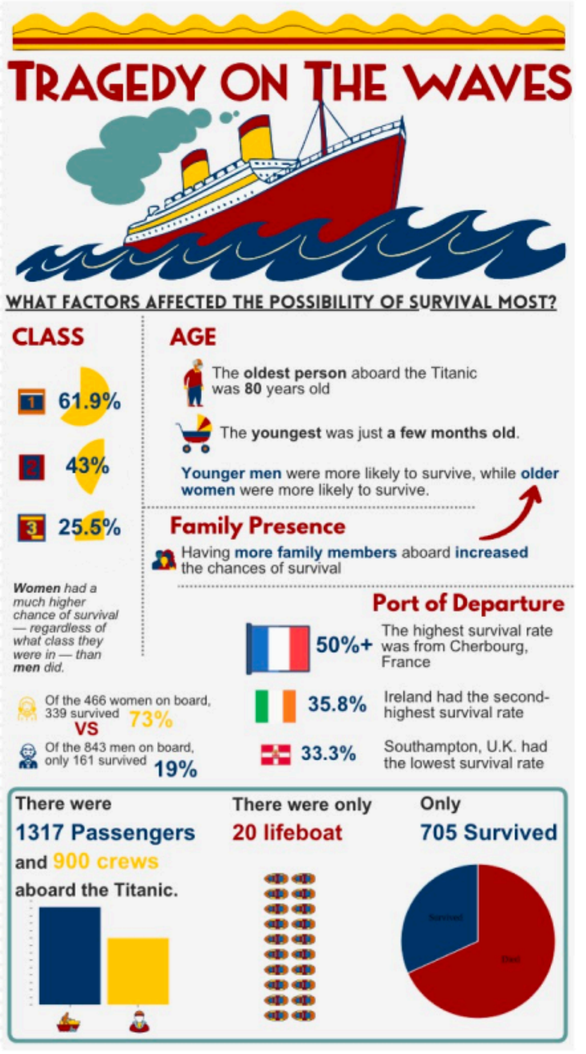

Aa Font Size

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H1 Font Text Font

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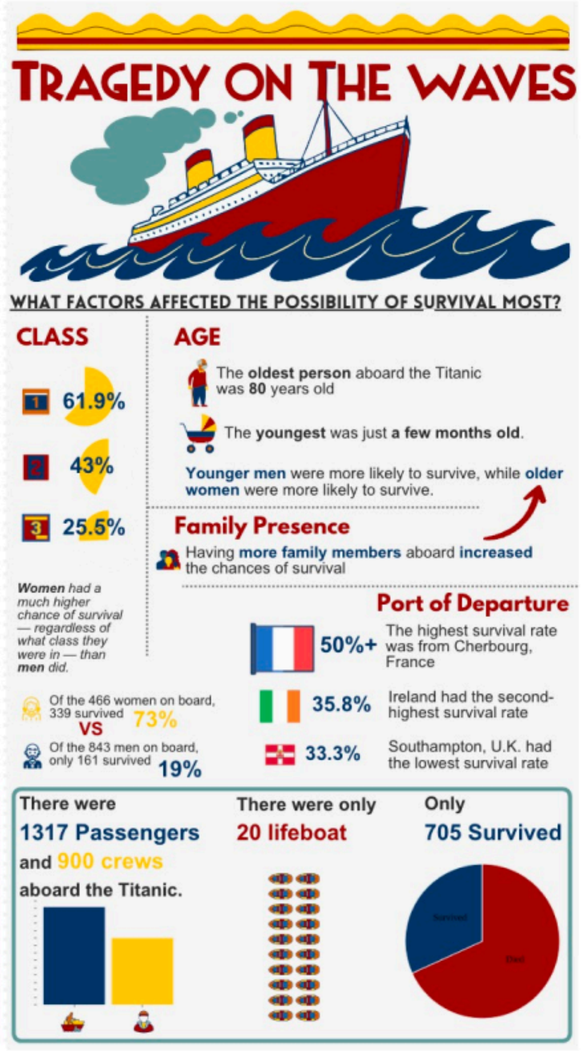
VG5 - Icon1
VG5 - Icon2
VG5 - Chart1
Background

Color and Font Recommendation based on semantic/ emotional tone of Title + Sub-title + knowledge content

GOAL

Upload



Aa

H1 Font

Text Font

Submit

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- VG5 - Icon2
- VG5 - Chart1
- Background

Aa Font Size

GRID

PORTRAIT

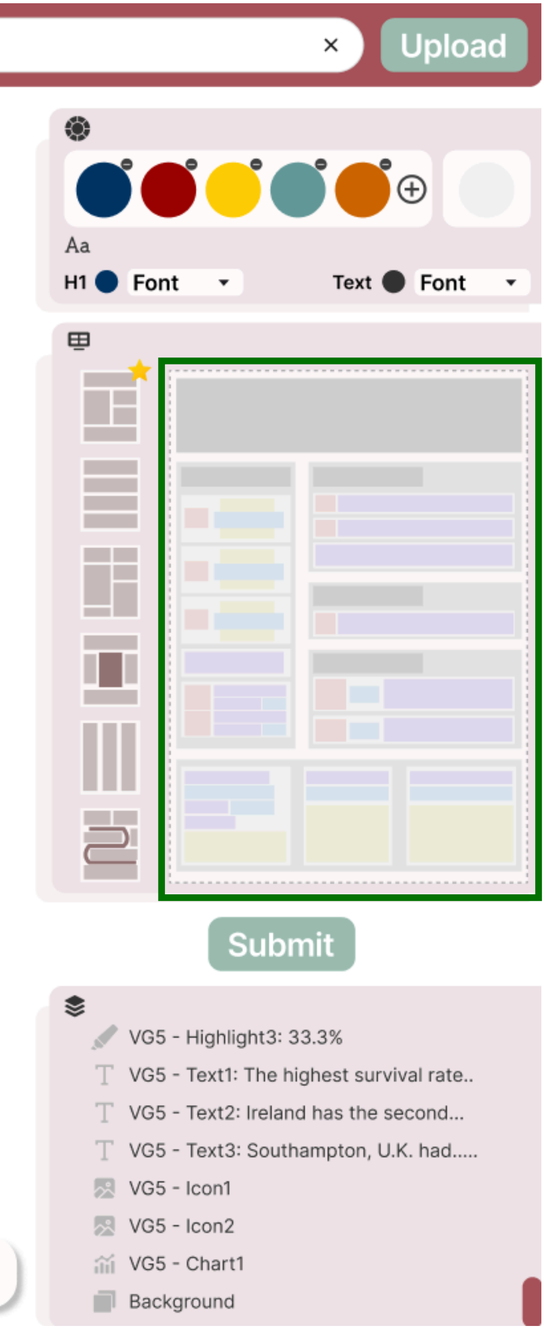
LANDSCAPE

STAR

STAR

SPIRAL

GRID + PORTRAIT


Upload
Aa
H1
Font
Text
Font
Submit
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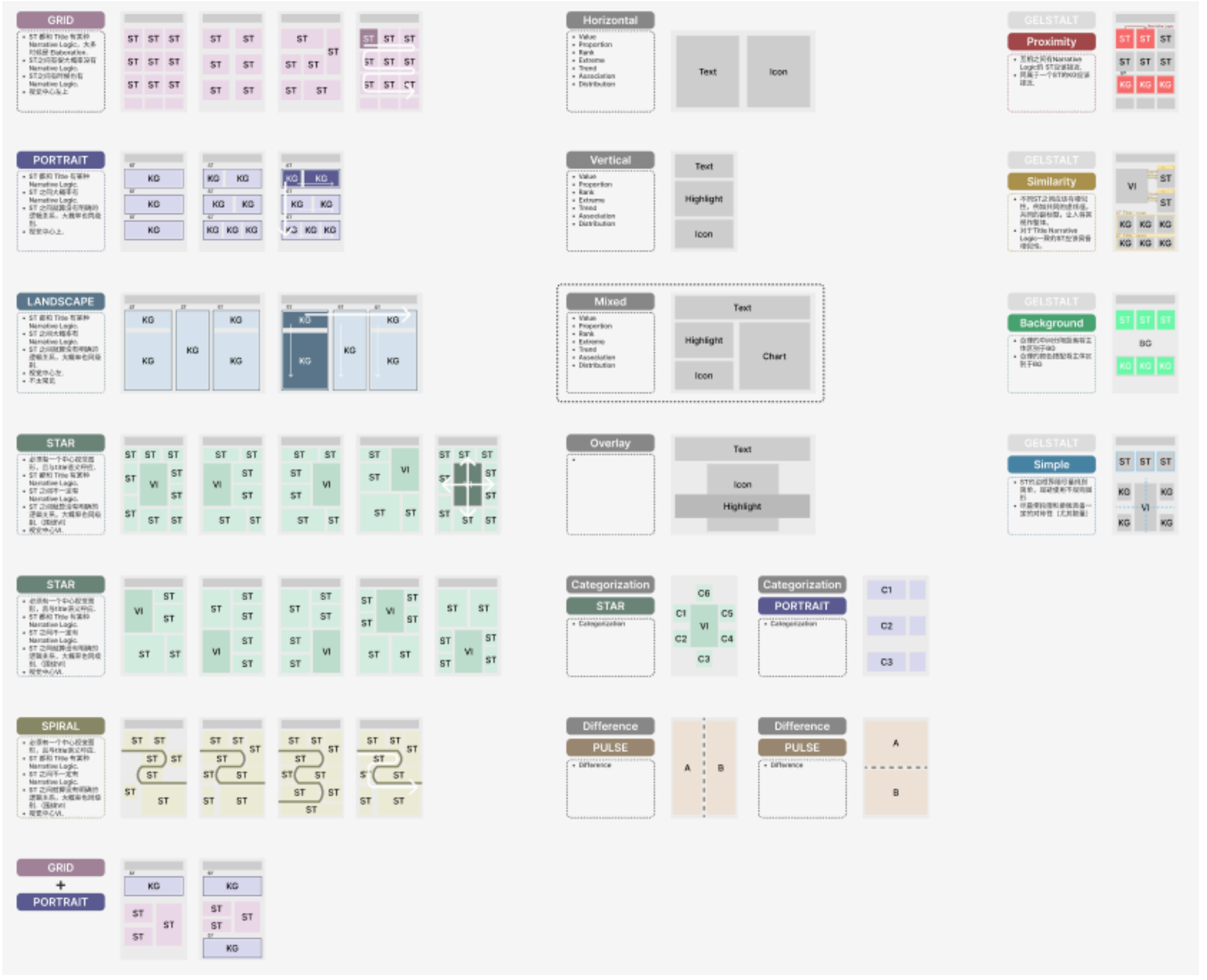
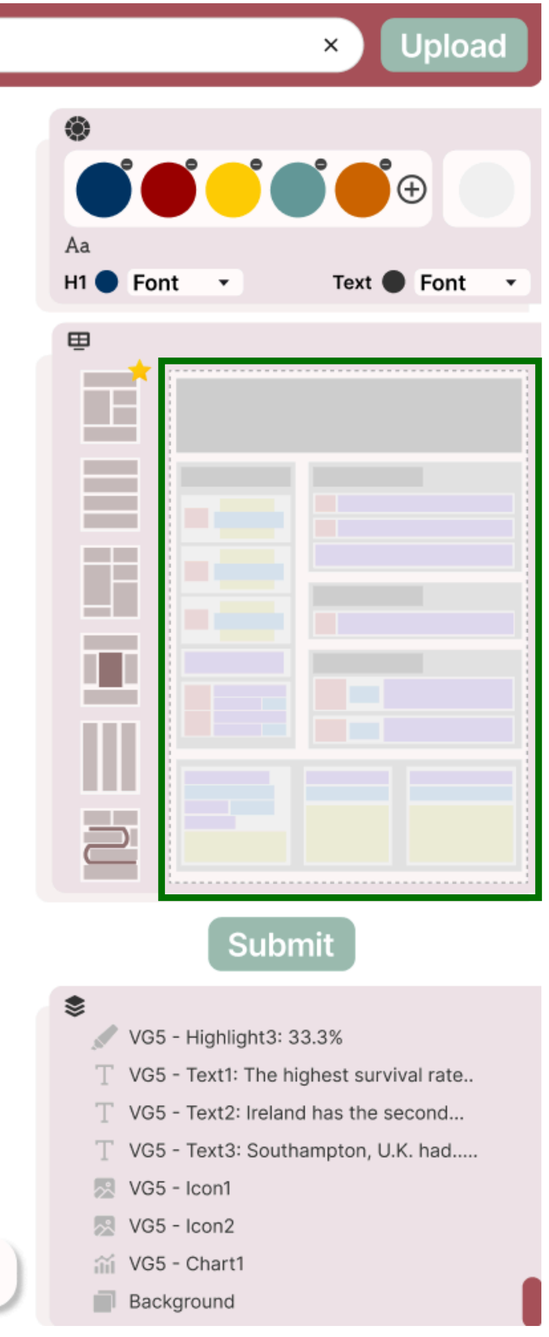

GRID
Horizontal
Text
Icon
GELSTALT
Proximity
PORTRAIT
Vertical
Text
Highlight
Icon
GELSTALT
Similarity
LANDSCAPE
Mixed
Text
Highlight
Chart
Icon
GELSTALT
Background
STAR
Overlay
Text
Icon
Highlight
GELSTALT
Simple
STAR
Categorization
STAR
Categorization
PORTRAIT
SPIRAL
Difference
PULSE
Difference
PULSE
GRID
+
PORTRAIT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Aa
H1
Font
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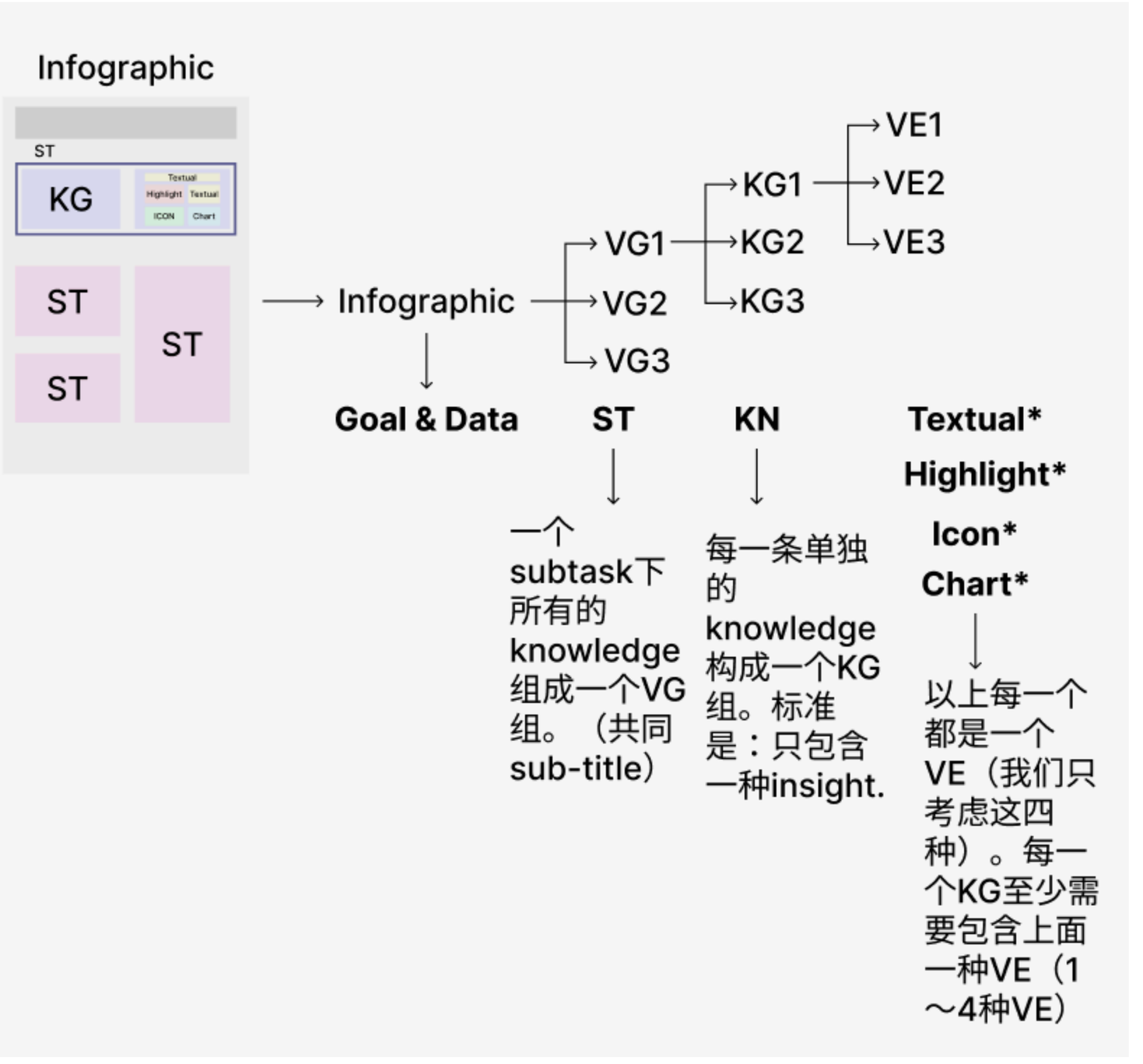

Infographic
ST
KG
Textual
Highlight
Textual
ICON
Chart
ST
ST
ST
Infographic
VG1
VG2
VG3
KG1
KG2
KG3
VE1
VE2
VE3
Goal & Data
ST
KN
Textual*
Highlight*
Icon*
Chart*
一个subtask下所有的knowledge组成一个VG组。（共同sub-title）
每一条单独的knowledge构成一个KG组。标准是：只包含一种insight.
以上每一个都是一个VE（我们只考虑这四种）。每一个KG至少需要包含上面一种VE（1～4种VE）

Type your question

Upload

xxxxx

Visual Group 1 *Generalization*

subtitle:

Pre-War Factors Leading to World War II

knowledge1: *H1* *H2* *Icon*

Political and economic instability in Germany fueled the rise to power of Adolf Hitler.

Keyword: **Visualization:**

Visual Group 2 *Elaboration*

subtitle:

Hitler's Rise to Power and Initial Aggression

knowledge1: *H1* *H2* *Icon*

Hitler became Chancellor of Germany in **1933**.

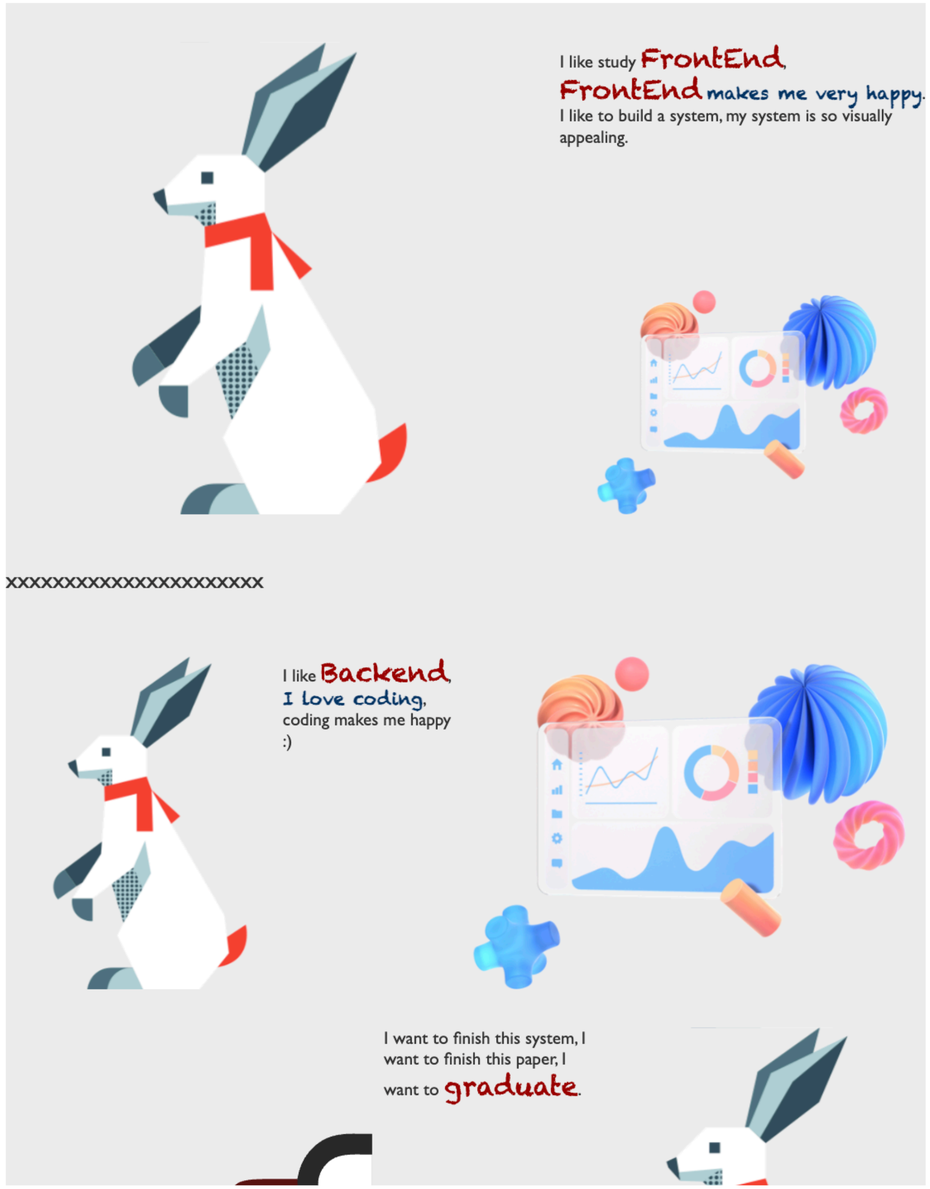
Keyword: **Visualization:**

Similarity

knowledge2: *H1* *H2* *Icon*

Hitler anointed himself Führer in **1934**.

Keyword: **Visualization:**



Aa

H1 H2 Text

SUBMIT

Font Size