575 Final Project Proposal

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**Target User Profile (Persona):**

**Name and Position:** Maria Mendoza, Mother (General Public)

**Background Position:** Maria is a mother of three residing in a small rural town in Oklahoma. Through various news outlets, she has heard of the COVID-19 virus outbreak on the East and West Coasts and is worried about its potential spread inward and its potential effect on her family. Maria needs to **retrieve** background information on COVID-19, such as **identifying** its symptoms to better understand the threat. She would also like to know how the COVID-19 developed in China at the early stage and how the epidemic started in the US. Besides, she also wants to **compare** the spread and the corresponding measures regarding COVID-19 being taken during different times in China and the US, as well as analyzing sequential **trends** or **patterns** in the number of cases confirmed. Lastly, she needs to **retrieve** the latest situation in China and the US such as the infected areas and the confirmed cases in order to achieve her **goal** of predicting when COVID-19 will impact her local community and family.

**User Case Scenarios:**

Maria would first get a brief understanding of COVID-19, so Chpt.1 of the project provides her with some background information.

Then, Maria seeks information about China, especially how the COVID-19 epidemic developed in China in the early days. Chpt.2 brings her to the story of Wuhan City, Hubei Province, China (1/1/2020 - 1/23/2020). The story is about how the situation developed from the first case reported to the lockdown of the whole city. Since she is interested in the spread and the corresponding measures being taken during different times, Chpt.2 allows her to **sequence** through the timeline to **retrieve** news & reports. Key events are bound to specific time stamps. Cases will be represented at the city level (story starts with Wuhan City) at the beginning and at the province level at the end (zoomed out) with proportional symbol. **Pan/Zoom** will be automatically triggered to change the map view to specific scaling levels and locations as the story goes. Also, the story panel incorporates an inset of an updated exponential chart to support the tracking of the **trends** (how the case raises as the story goes).

After learning the complete story of Wuhan, China, Maria would have a better comprehension to open up Chpt.3 which works the same way but focusing on the situation in the US (1/23/2020 - 3/31/2020). The story is mainly about how the situation developed from the first case reported in the US to the situation that most of the states issued Stay at Home order, revealing how the COVID-19 and social distancing changed the US. Cases will be represented at the state level with proportional symbol. Chpt.2 and Chpt.3 together, help her **associate** the spread of COVID-19 with specific measures and judge the effectiveness of these measures.

Lastly, Maria wants to keep herself updated on the latest situation in China and the US. Chpt.4 presents a map showing the current confirmed cases of COVID-19 in China and the US at the state/province level with proportional symbols. **Resymbolize** the scale ratio by date when necessary. Every single proportional

symbol is clickable to retrieve the detailed information (e.g., death cases, recovered cases). **Pan/Zoom** are restricted to two levels to avoid collision of map symbols. Maria can **retrieve** the cases of COVID-19 in different places to achieve her **goal** of predicting when COVID-19 will impact her family.

Maria is equipped with a MacBook Pro to display this website.

**Requirements Document (We plan to use Leaflet/D3 for the implementation)**

| Representation | | |
|---|---|---|
| 1 | **Basemap** | We have three map canvas in our project: (1)The outline of China with province boundary; (2) The outline of the US with state boundary; (3) The map of the world with country boundary. (Theme: Dark Grey)<br>Data sources:<br>https://leaflet-extras.github.io/leaflet-providers/preview/ |
| 2 | **Events** | The date, location and description of the covid-19 events. Here events mean news reports, government orders, changes of confirmed cases, etc. US/China<br>Data sources:<br>https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html<br>https://github.com/BlankerL/DXY-COVID-19-Data<br>News report: CNN, BBC, CGTN, etc. |
| 3 | **Cases** | Include suspended, confirmed, and death data. US/China<br>Data sources:<br>https://coronavirus.1point3acres.com/en<br>https://coronavirus.jhu.edu/map.html<br>CDC China, CDC America, WHO, etc. |
| 4 | **Timeline** | Control (by scrolling) the time and provide anchor points for key dates. |
| 5 | **Chapter** | Select different chapters (Intro, background, China's story, US's story, latest situation). |
| 6 | **Legend** | Visual description of events and cases using symbolization. |
| 7 | **Overview** | Includes the title and the brief introduction. |
| Interaction | | |
| 1 | **Timeline Scroll** | Sequence: Objects. Scroll to change the date and see the events (e.g., news report) at each time stamps, as well as see how the epidemic changes overall. |
| 2 | **Event Focus** | Zoom/pan (Chpt. 2/3, automatically): Objects. When the date changes (move to the next time stamp), auto-pan and zoom to wherever the next event happened. |
| 3 | **Case Check** | Retrieve: Objects. Click on a proportional symbol to show the current information of cases (confirmed, death, etc.) in this area. Users can compare the cases between different areas. |
| 4 | **Browser** | Zoom/pan (Chpt. 4): Objects. Users can pan and zoom to view the cases in China and the US. Pan/Zoom are restricted to two levels to avoid collision of map symbols. |

**Design 1**

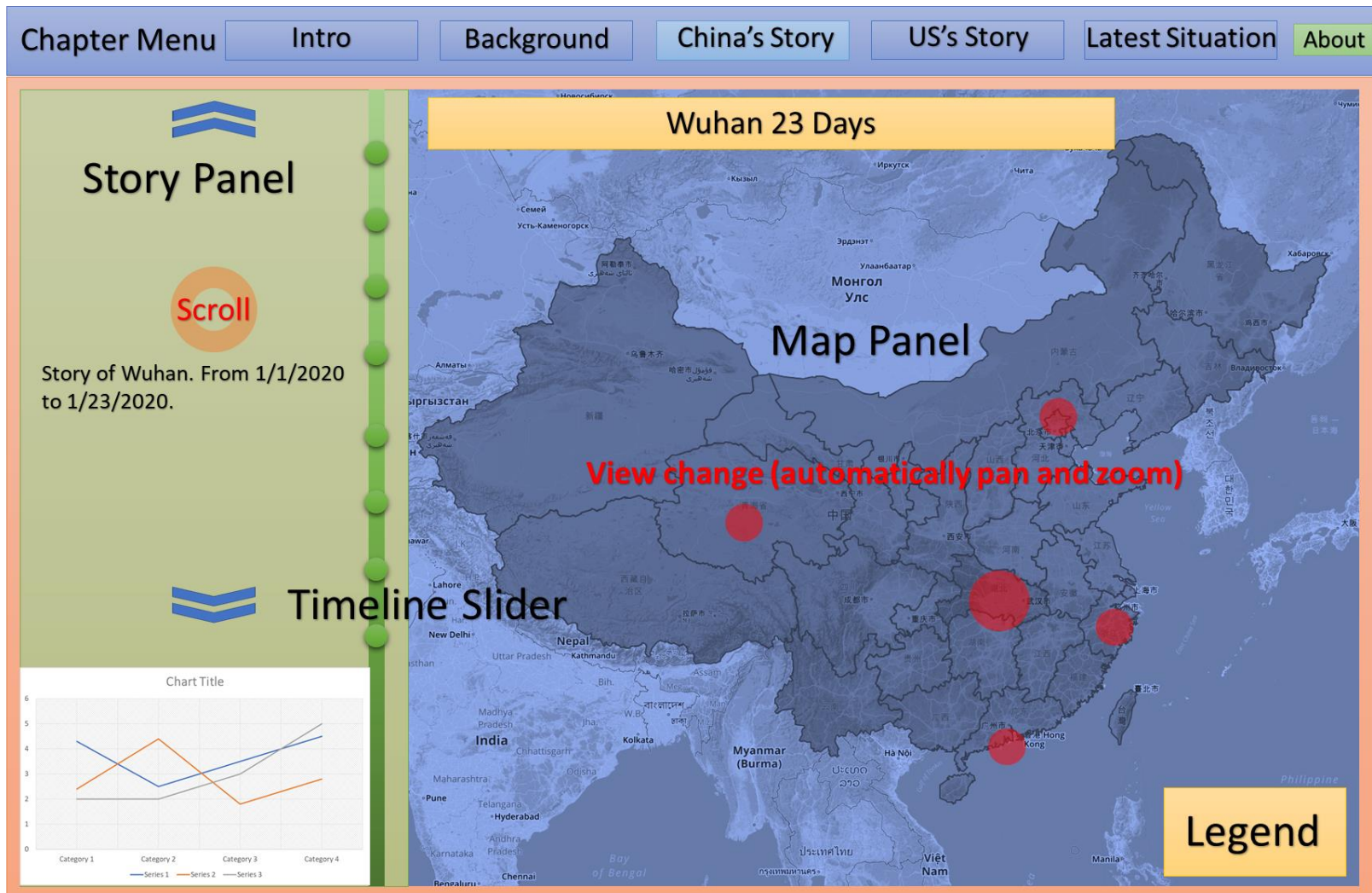Cover Page (Intro). It includes the title and the brief introduction. The background chapter have the similar layouts.

| Chapter Menu | Intro | Background | China's Story | US's Story | Latest Situation | About |
|---|---|---|---|---|---|---|

CORONAVIRUS
DISEASE 2019 **(COVID-19)**

**Map Storytelling Title**

**Brief Introduction**

Scroll

**Design 2**

Chapter: China's story – Wuhan 23 Days. Story Panel will show the story. Cases will be represented at the city level (story starts with Wuhan City) at the beginning and at the province level at the end (zoomed out) with proportional symbol.
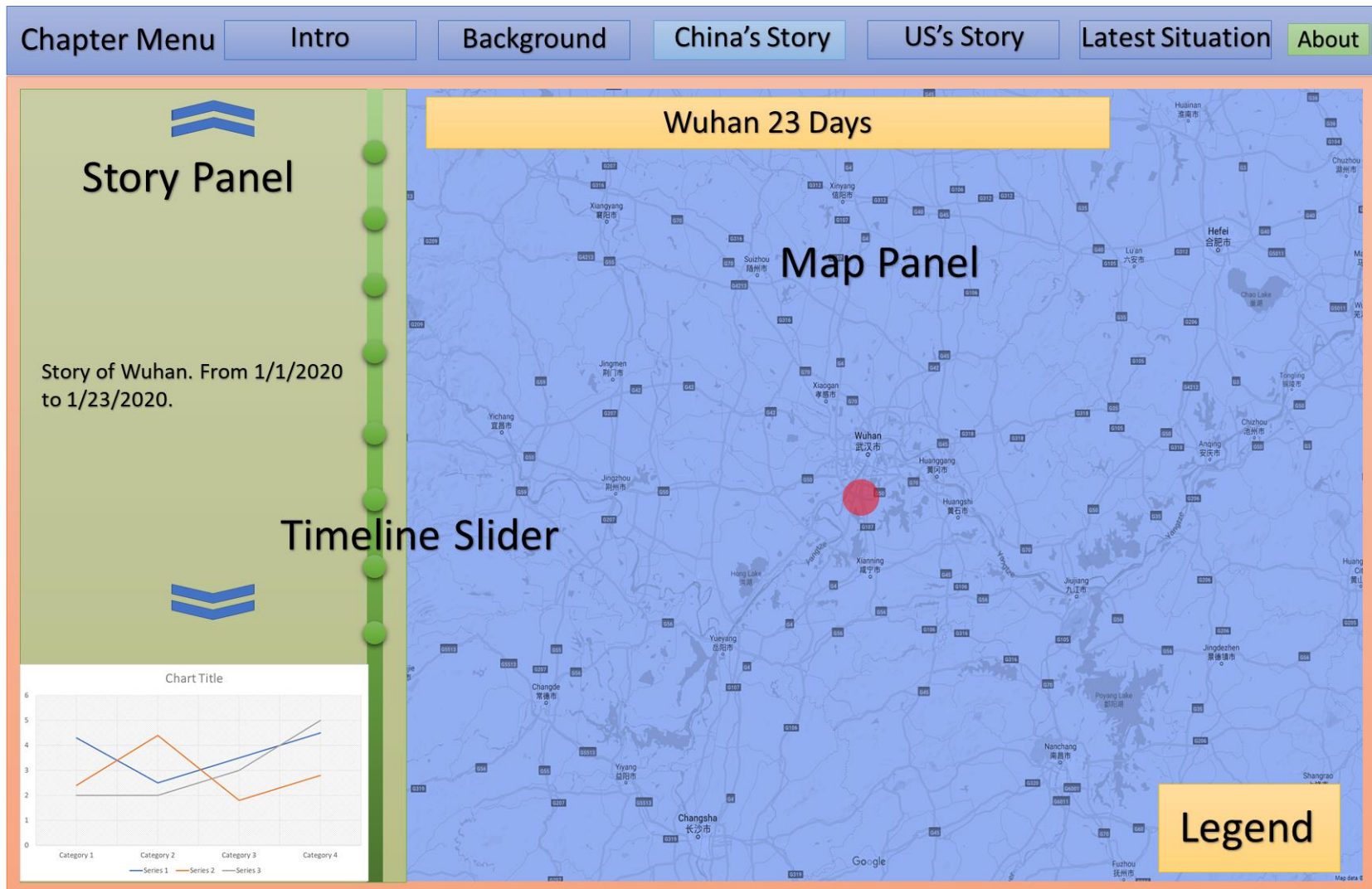
**Design 3**

Chapter: China's story – Wuhan 23 Days. Scroll on the story panel to read the full story and change the date. The map will automatically change its view (by zoom/pan) to match the events in the story. The exponential chart will be updated over time.

| Chapter Menu | Intro | Background | China's Story | US's Story | Latest Situation | About |

**Wuhan 23 Days**

## Story Panel

Scroll

Story of Wuhan. From 1/1/2020 to 1/23/2020.

## Timeline Slider

Chart Title

Map Panel

View change (automatically pan and zoom)

Legend

**Design 4**

Chapter: US's story – United States: A Nation in "Lockdown". Click on the chapter name on the chapter menu to switch between different chapters.
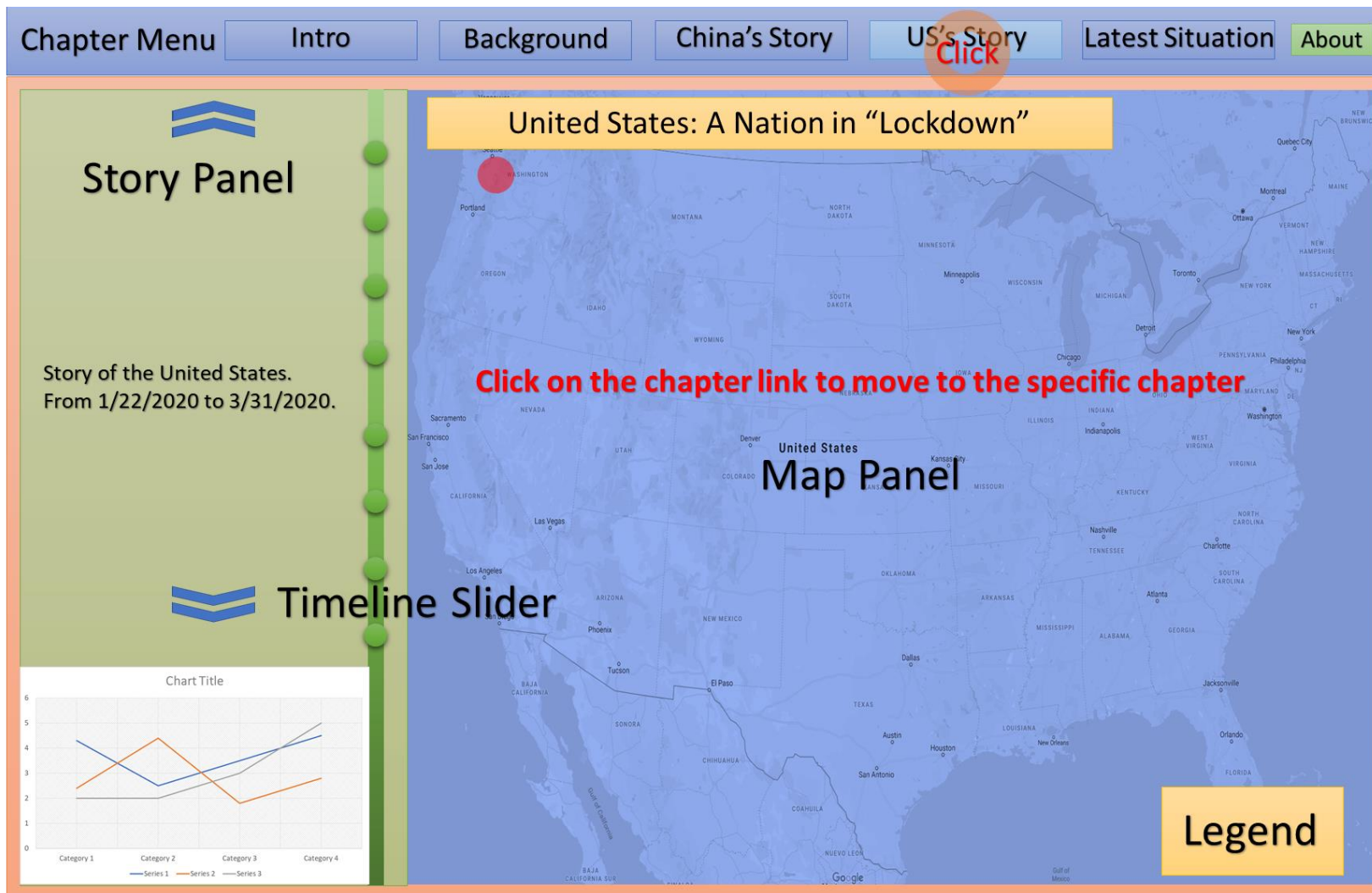


**Design 5**

Chapter: Latest Situation. Users can explore the map (2-level Pan/Zoom, and Retrieve) in this chapter to get a bigger picture of the Covid-19 pandemic in China and the US today. Currently we plan to put the state/province-level data of China US on the map. Click on a proportional symbol to show the current information of cases (confirmed, death, etc.) in this area. Users can compare the cases between different areas.
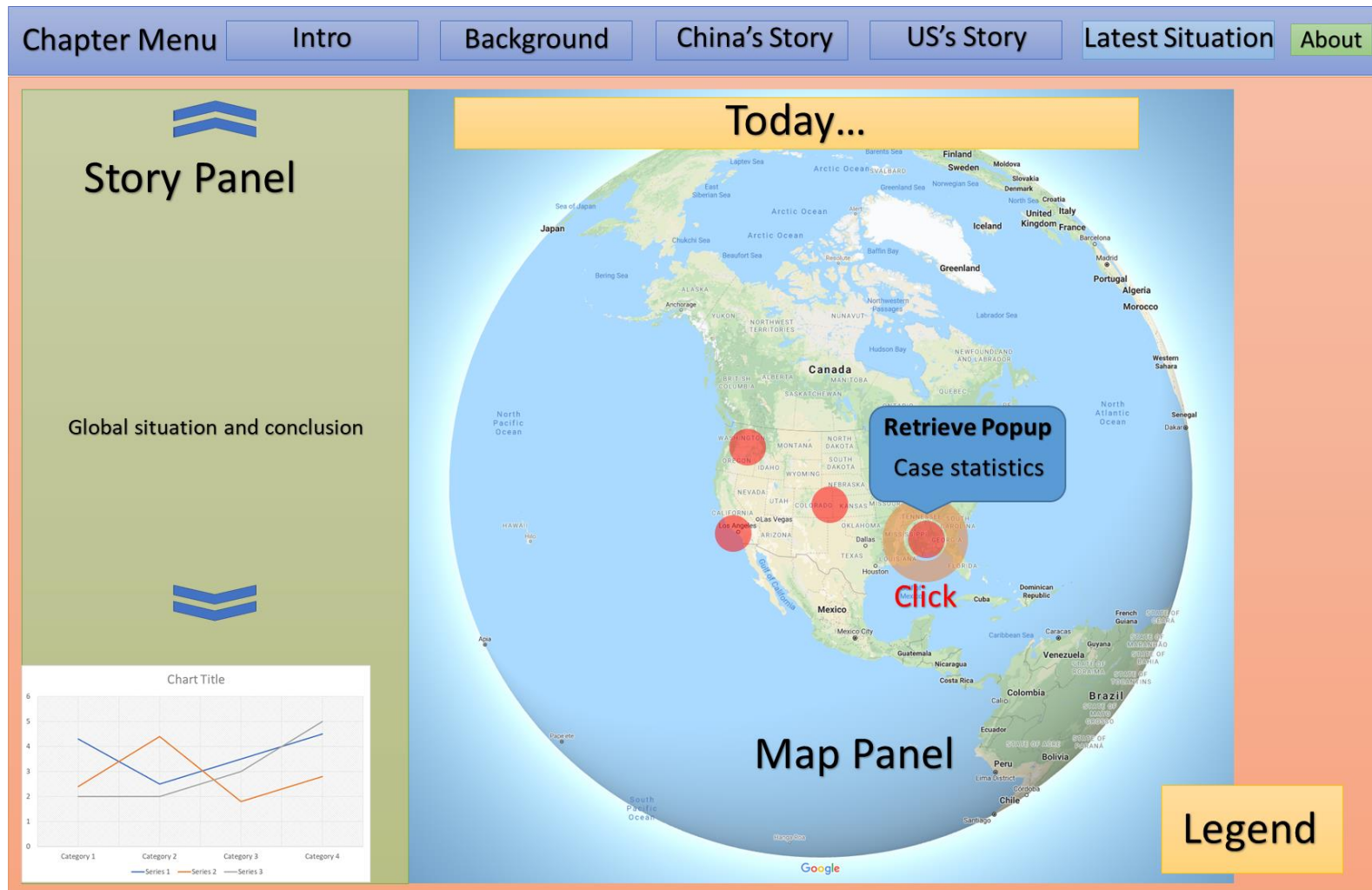


**Design 6**

About. Users click the About button and see an About information dialogue (closable).