

# **AWS State, Local, and Education Learning Days**

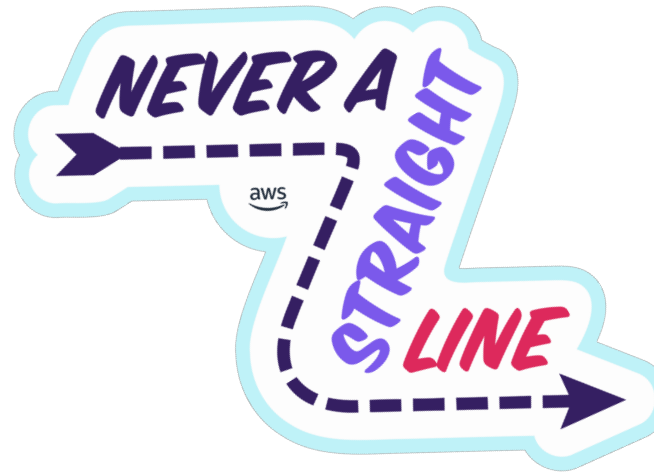
Greater Phoenix, Arizona



# Innovating for public sector

Public-private partnerships driving AI adoption

# Organizing for innovation



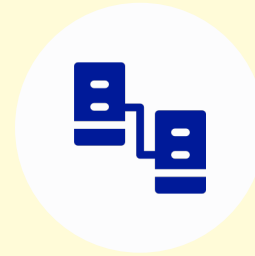
# Cloud Innovation Centers (CICs)



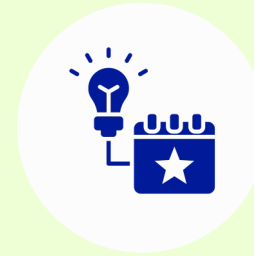
Leading innovation  
processes



Cloud  
expertise




Prototype  
development



Innovation  
events

**ASU** Artificial Intelligence  
Cloud Innovation Center  
Arizona State University

powered by 




**CAL POLY**  
Digital Transformation Hub

powered  
by 



University of  
**Pittsburgh**

Health Sciences and  
Sport Analytics

Cloud Innovation Center  
powered by 

# Student workers

- Undergraduate and graduate students
- Paid hourly
- Work with CIC for 1+ year
- **Roles**
  - Cloud developer
  - UI/UX
  - Marketing



# Sample of CIC customers



Oregon State University



Alameda County



BreastCancer.org



Brightpoint



City of San Diego



City of Chandler Police Department



CalFire



Orthodox Union



Disability Rights Texas



City of San Luis Obispo



Colorado State University



Phoenix Children's Hospital



St. Louis Zoo



University of Pittsburgh



The Ohio State University



WorldBank



U.S. Department of Agriculture (USDA)



Wisconsin State Laboratory of Hygiene



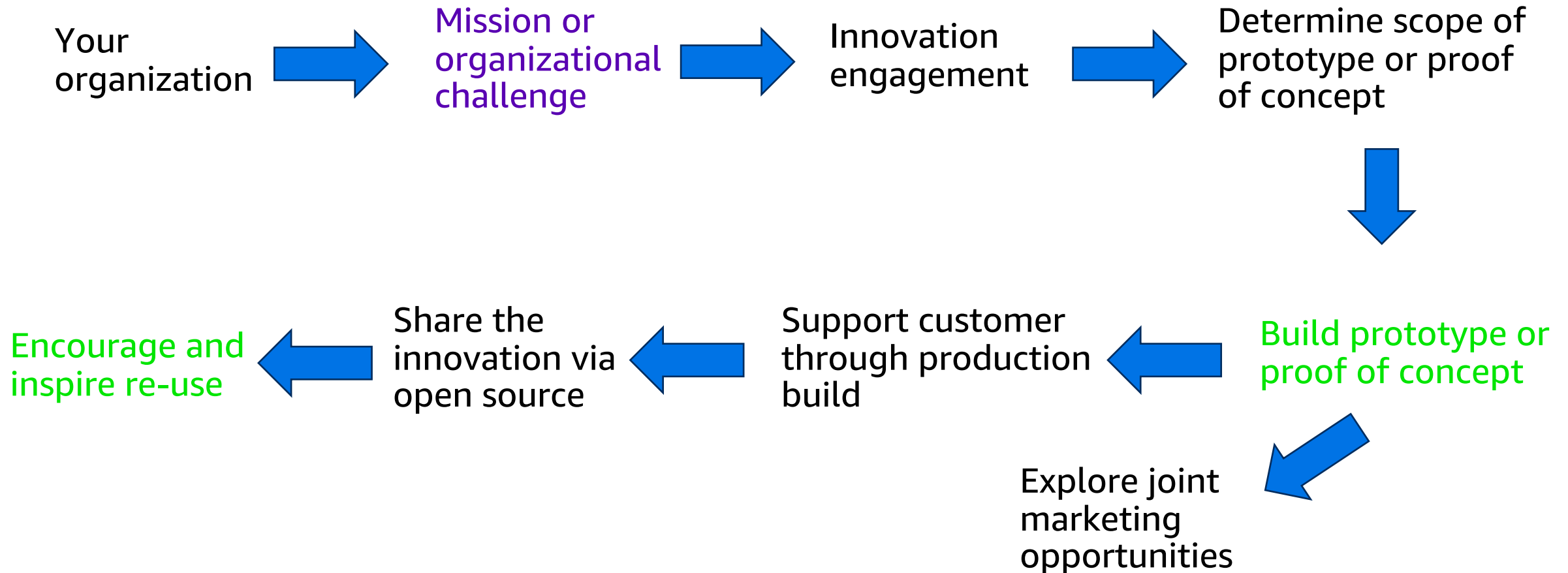
Catholic Charities



Virginia Department of General Services  
Division of Consolidated Laboratory Services



# Developing prototypes in 6-10 weeks



# PDF Remediation: The Ohio State University

**Problem statement:** Many public sector organizations have document collections containing hundreds of thousands of PDF documents, many of which do not meet the Web Content Accessibility Guidelines (WCAG) 2.1 Level AA standards, making it difficult or impossible for individuals relying on assistive technologies to access those documents.

## Solution

Our team combined AWS services + Adobe Auto Tag API to create a comprehensive solution to remediate PDF documents.

## Other applications

AWS also has an open-source PDF-to-HTML solution.



# PDF Accessibility Remediation

## About this solution:

This solution was created by the Arizona State University Artificial Intelligence Cloud Innovation Center (AI CIC), powered by Amazon Web Services (AWS), to tackle a significant challenge in the digital era: improving the accessibility of digital document collections.

With the Department of Justice's April 2024 updates to how the Americans with Disabilities Act (ADA) will be regulated, the AI CIC developed a scalable open-source solution that quickly and efficiently brings PDF documents into compliance with WCAG 2.1 Level AA standards. For bulk processing, 10 pages would cost approximately \$0.013 for AWS service costs + Adobe API costs.

To test out this open-source solution, [click the button to the right](#) to briefly create an account, upload your document, and receive your remediated PDF in return.

Provided by:  **Artificial Intelligence Cloud Innovation Center** Arizona State University  powered by **aws**

READY TO TRANSFORM YOUR PDF?

Login and About this Solution

### Document Requirements

- Each user is limited to **3 PDF document uploads**.
- Documents cannot exceed **10 pages**.
- Documents must be smaller than **25 MB**.
- Do not upload documents containing **sensitive information**.
- This solution only remediates **PDF documents**. Other document types will not be accepted.
- This solution does not remediate for **fillable forms and color selection/contrast for people with color blindness**.

### Support Resources

This solution is available open source and can be added to your AWS account for usage and testing. Review documentation and access the GitHub repo at:

[GitHub Repo](#)

# www.remediate-pdf.com

PDF Accessibility Remediation

Used: 0 / 5

Home

## Remediate a PDF document

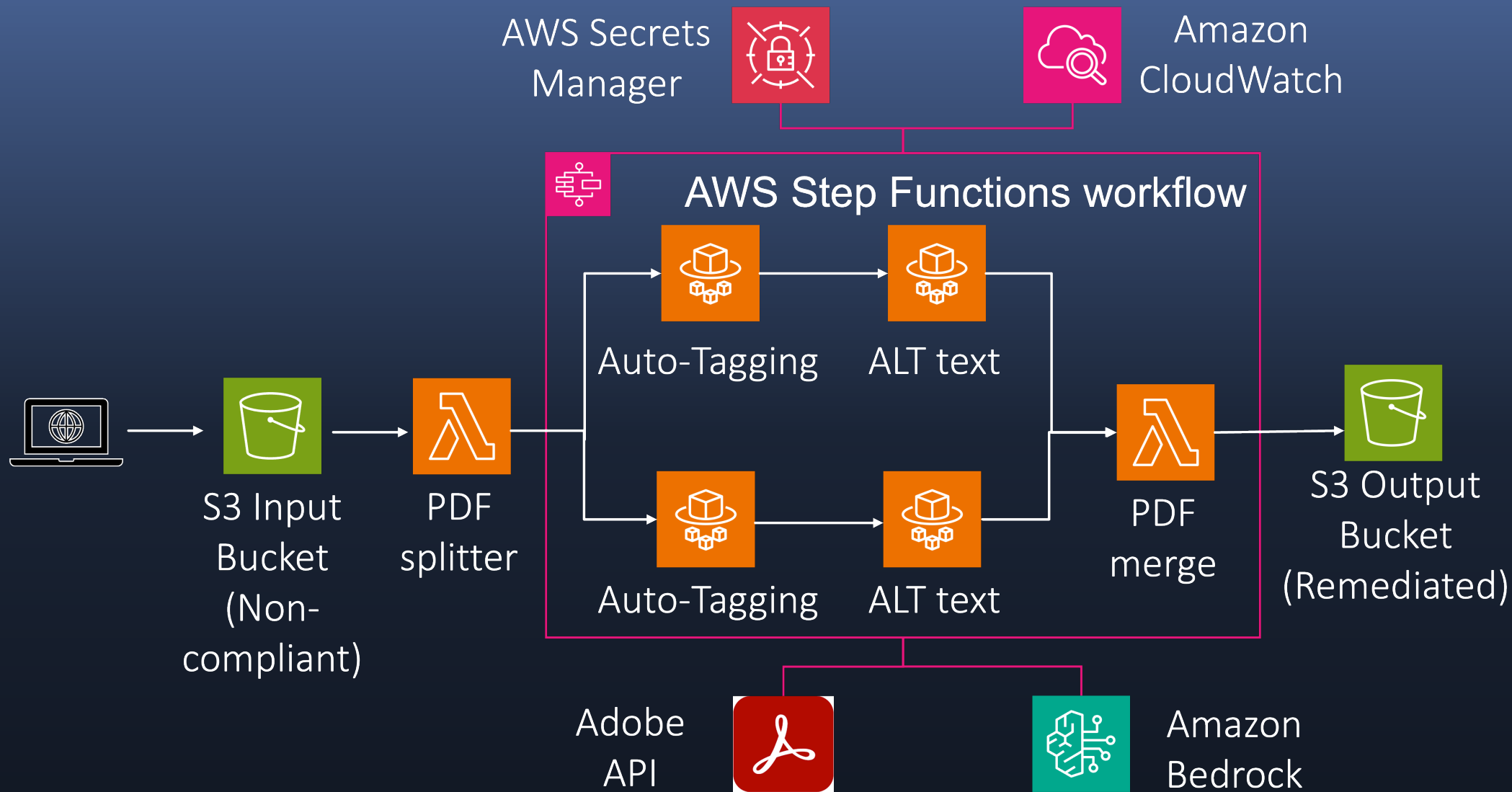
Drag & drop your PDF file below, or click to select it.

Upload Your PDF ⓘ

Choose File No file chosen

Please Upload A PDF

No file uploaded yet.



# Assessor Assistant: State of CA

**Problem statement:** Understanding property tax regulations in California is complicated and confusing for most homeowners. This conversational AI assistant uses natural language processing and semantic search to provide accurate, cited answers from sources like the California Assessor's Handbook, Tax Codes, and Letters to Assessor documents. The chatbot also features an intelligent exemption form finder that guides citizens through tailored yes/no questions, recommending appropriate exemption forms.

## Solution

This solution significantly enhances citizen interactions, reduces assessor workloads, and streamlines training, transforming regulatory navigation.

## Other applications

Complex information ecosystems that are hard or nuanced for people to navigate.

Chat

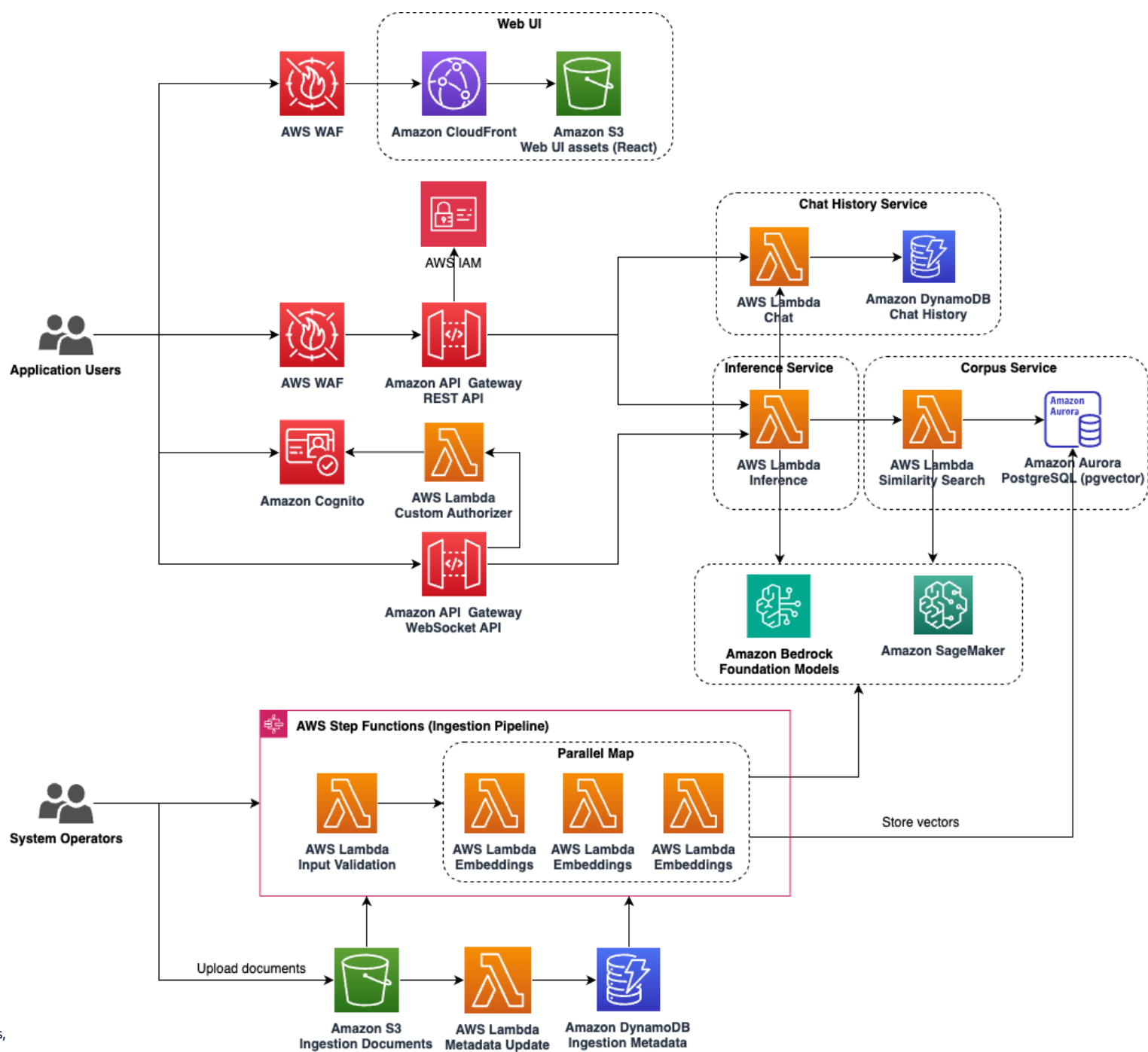
## Chat [Info](#)

Content creation chats

**Chats** [+ Create Chat](#)

< 1 >

**No chats**  
No chats to display.



# Blueberry Bot: Oregon State University

**Problem statement:** Additionally, there is often a natural lag between the completion of research and the publication or communication of results. As a result, the most up-to-date insights may not always be immediately available in responses to growers. The current system also lacks a feedback loop to track common questions and integrate answers into a shared knowledge base, making it harder to streamline support and ensure consistent dissemination of new information.

## Solution

Seamlessly connect people to the information they need w/ a commitment to accuracy. When the bot encounters questions beyond its current knowledge base, it seamlessly transitions to a smart email routing system, connecting growers directly with Dr. Yang for personalized expertise.

## Other applications

Knowledge capture of a long-time employee; healthcare professionals accessing the latest medical protocols, legal teams querying vast case law databases, or engineers referencing technical specifications. Anywhere that disparate bodies of information exist that need to be tapped to answer questions



### About us

Powered by AI-driven insights, Blueberry Bot provides real-time guidance on best farming practices, pest control, and sustainable harvesting techniques.

### FAQs

What is meant by Maximum Residue Limit?

Tell me about Postharvest Handling

Give me the best practice for pest management.

What is the best way to grow blueberries in Central Oregon?

## Blueberry AI Assistant



Welcome user! In order to provide the most accurate responses, can you please tell me where you are growing blueberries?

Oregon



Thank you for sharing that information! How can I help you today?

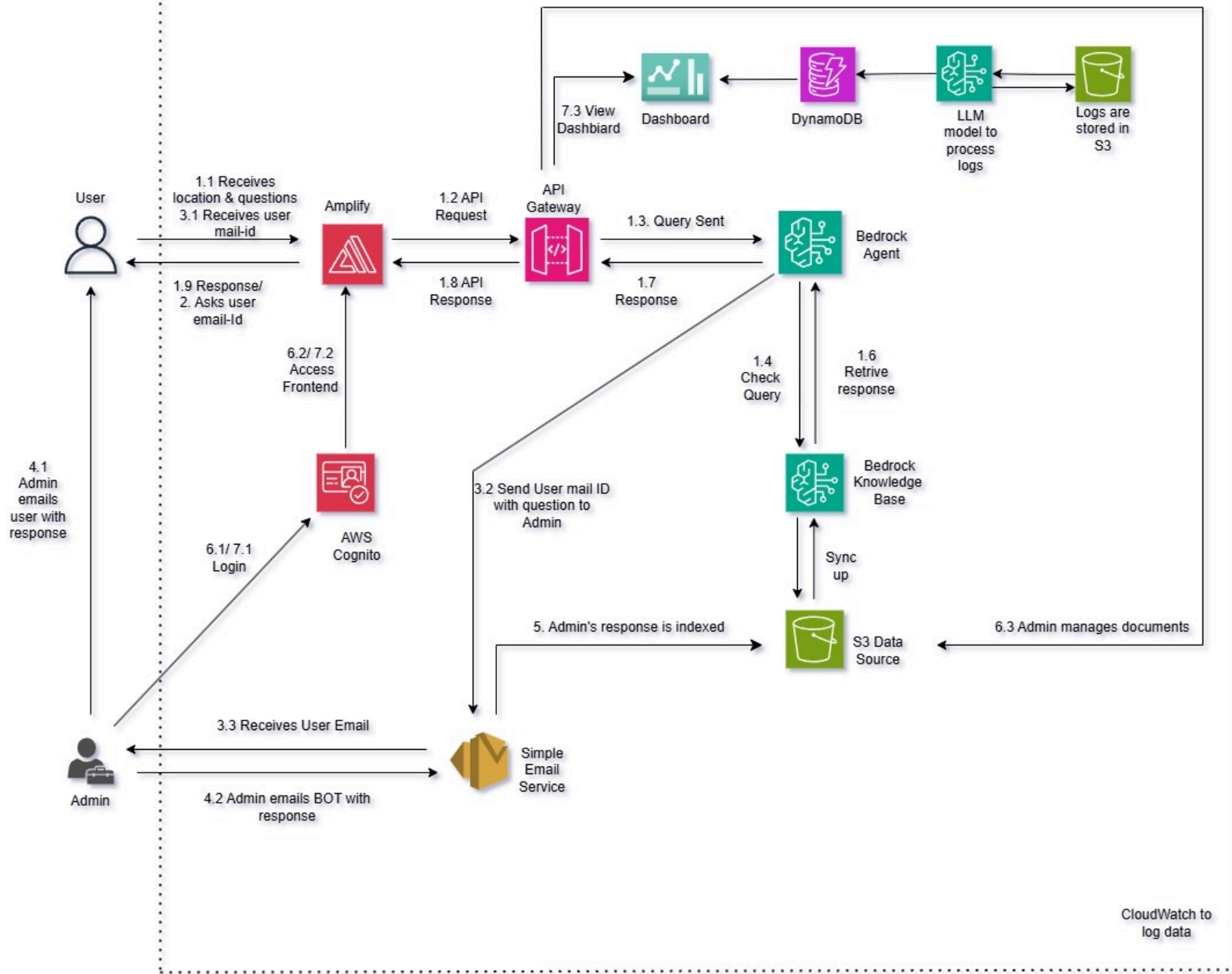
What is the blueberry shock virus?



The blueberry shock virus (BIShV) is a viral disease that affects highbush blueberry plants. It was first identified in 2004 in a single 'Bluetta' plant. The virus causes shock symptoms such as the death of flowers and foliage. Plants may recover from the virus in subsequent years and produce a normal fruit load, even though they remain infected. The virus spreads gradually through susceptible plants, as depicted in an animation showing its nine-year spread through a half-acre of blueberry plants.

Type a Query...





# So many solutions



## Permitting reviews

City of Scottsdale  
+  
Cloudwick

## Public feedback

City of Chandler Police  
Department

## FOIA / PRR redaction

Another amazing Arizona  
city 😊

## Video analysis

Arizona State University

# Call-to-action

- Come to our booth + meet the team
- See the solutions our team has built
- Think about your problem statement





# Thank you!

**Colleen Schwab**

Global Innovation Strategist  
AWS

[cmschwab@amazon.com](mailto:cmschwab@amazon.com)

Please complete the survey  
for this session



**Executive Track**

AI Innovation



# Additional resources

QR Code

**Title (Linked)**

Brief description

QR Code

**Title (Linked)**

Brief description

QR Code

**Title (Linked)**

Brief description



















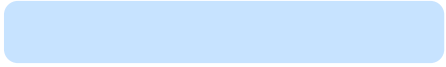




















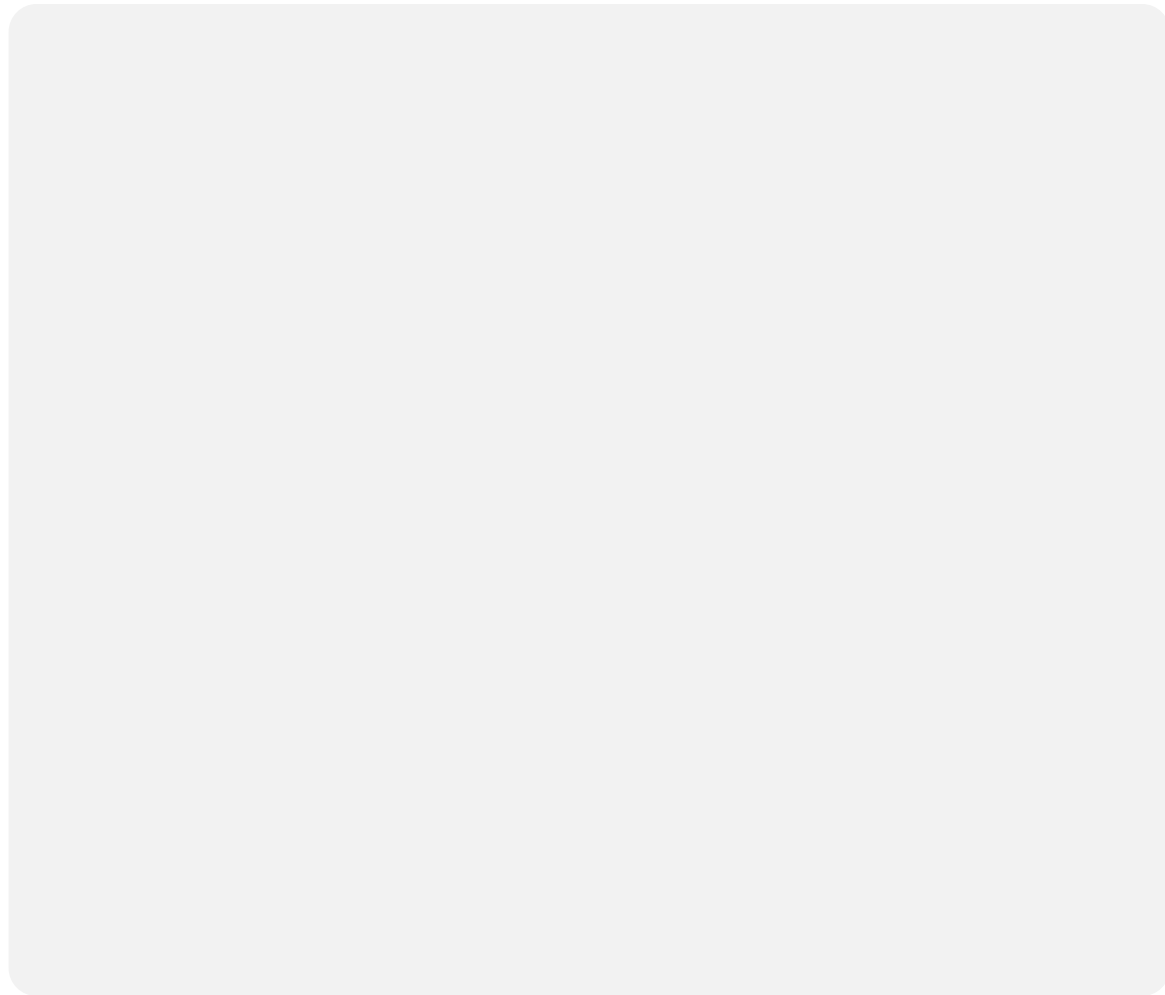
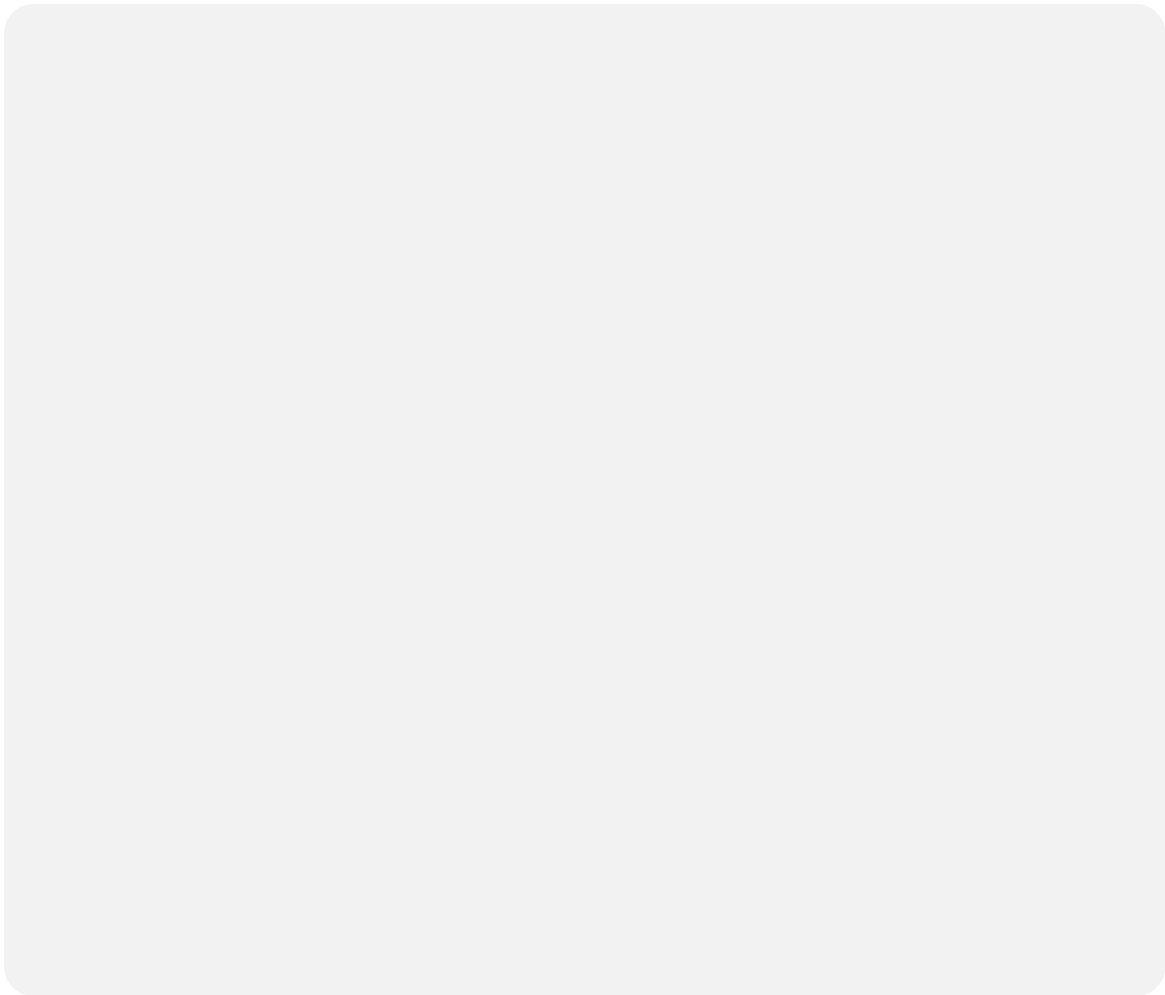






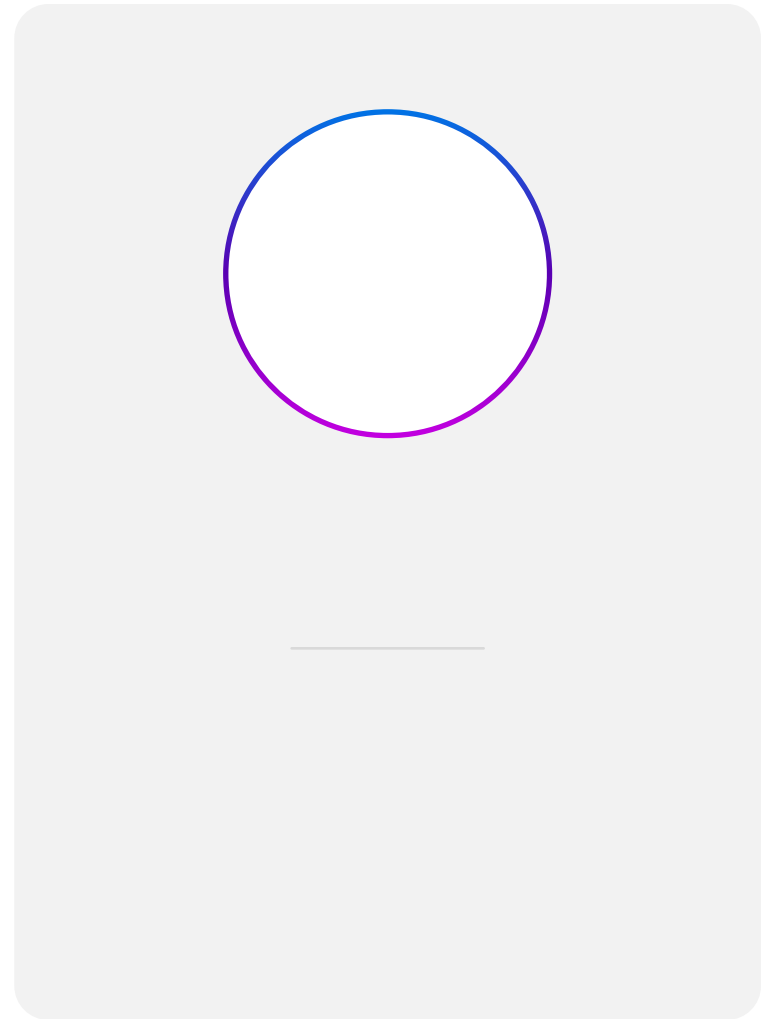
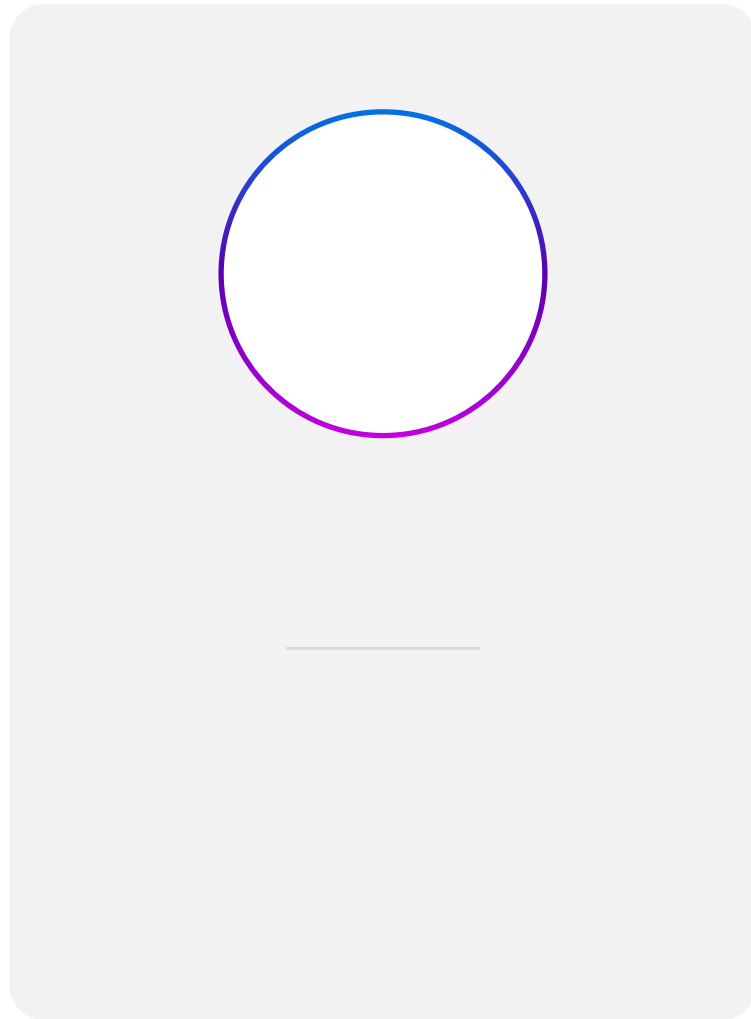
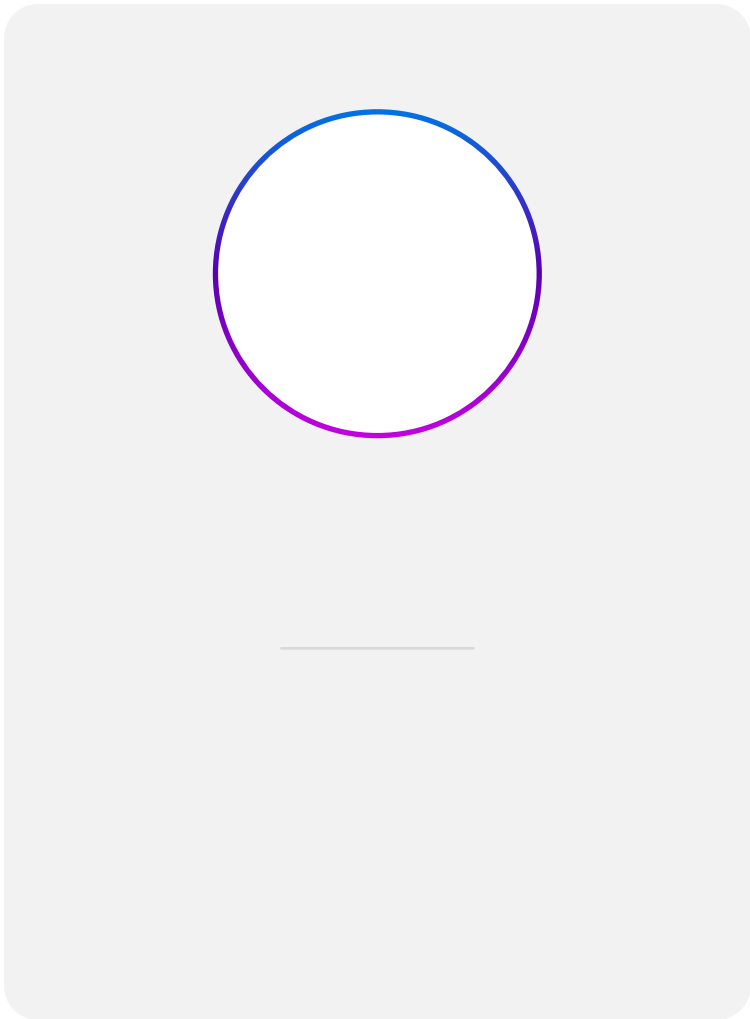


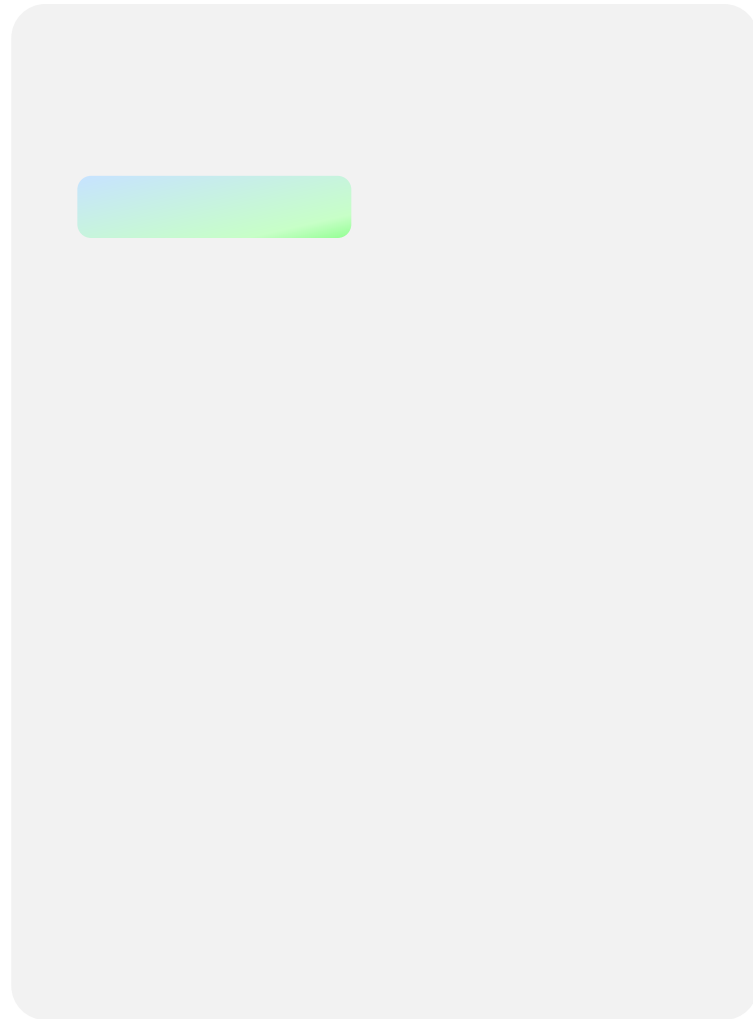
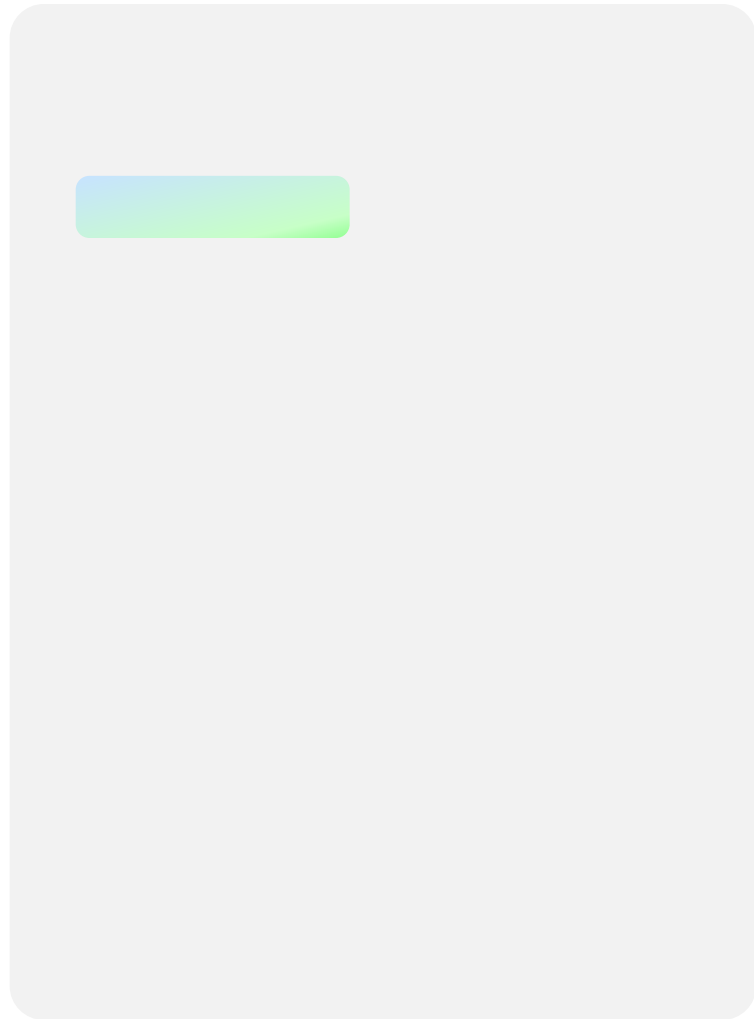
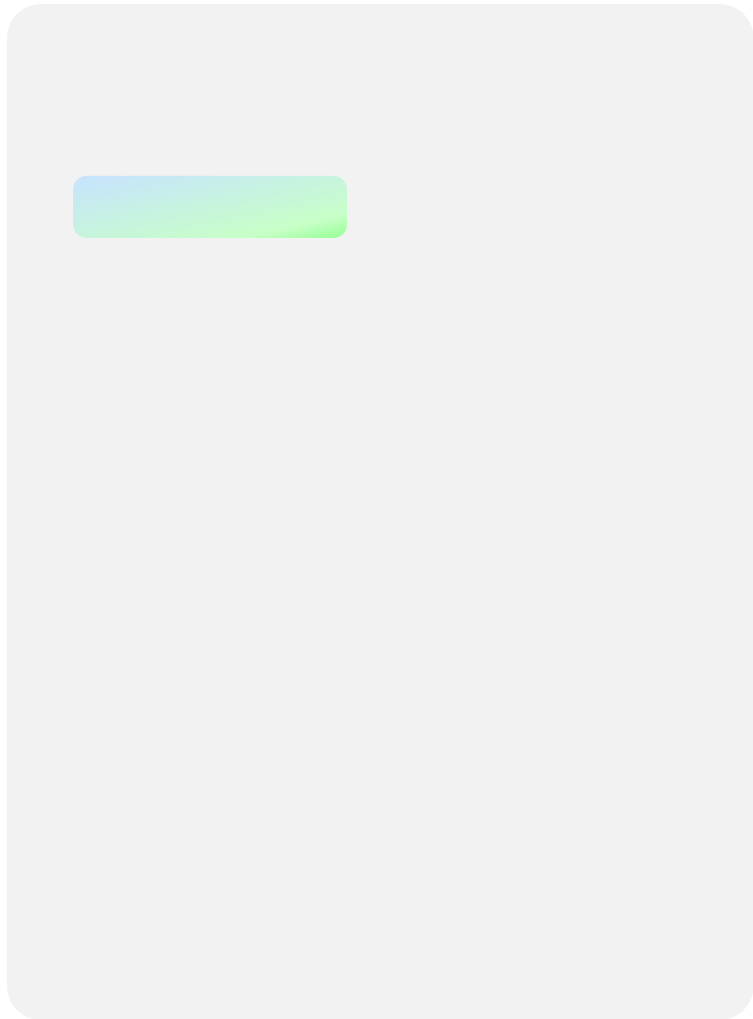


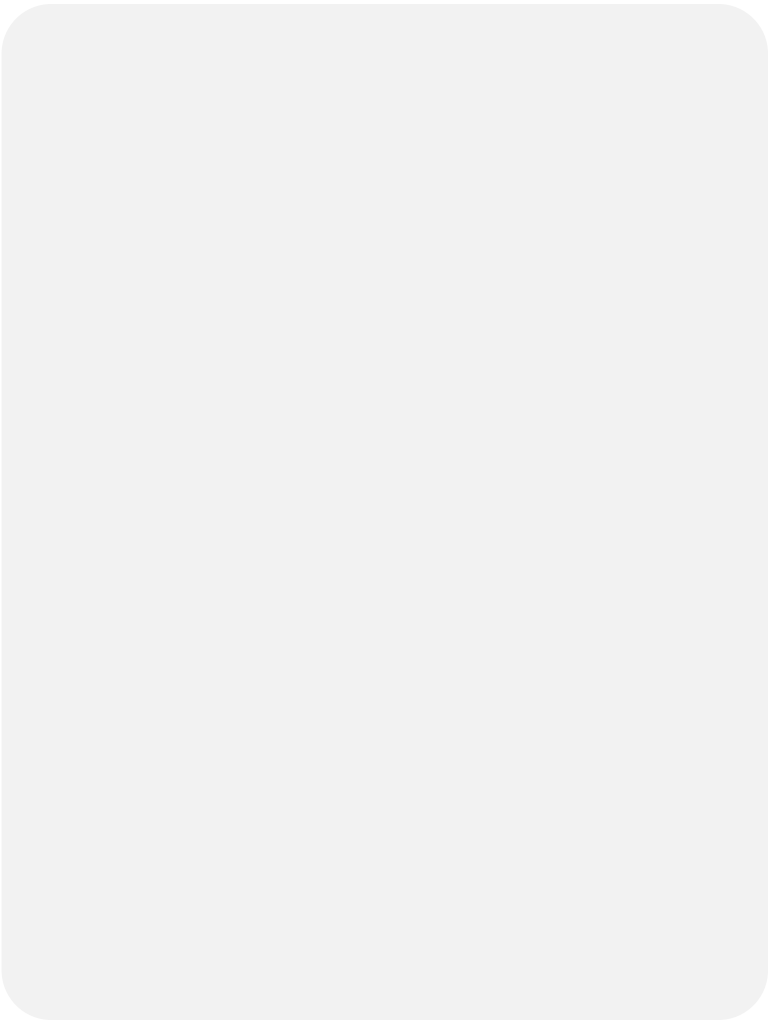
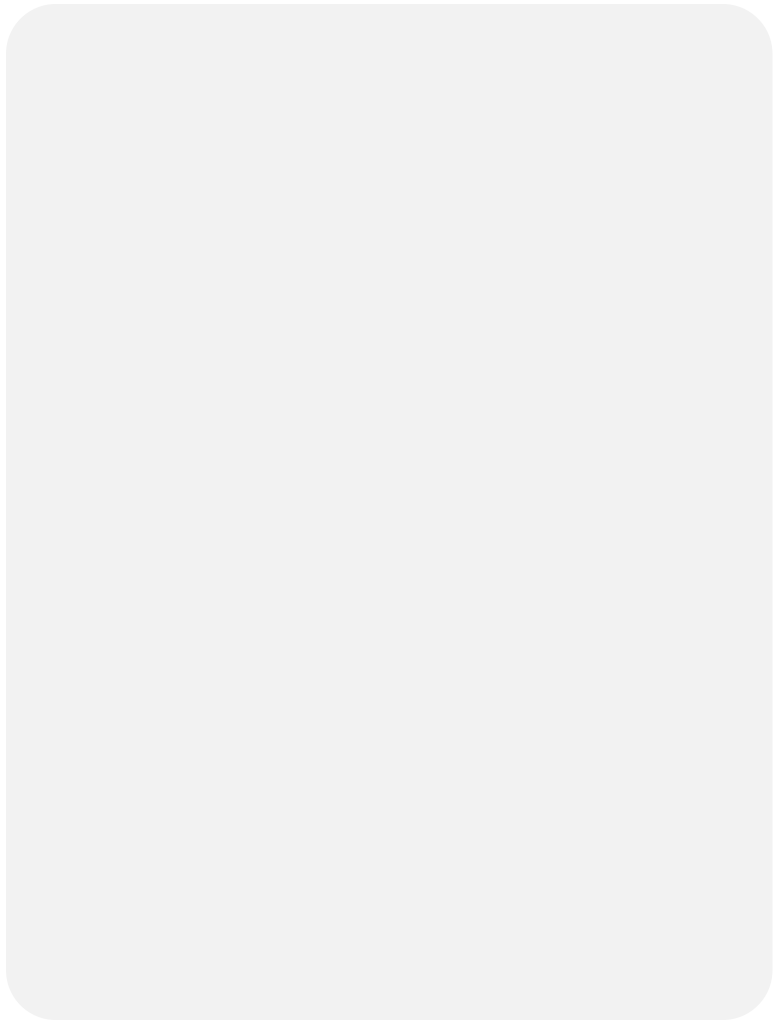
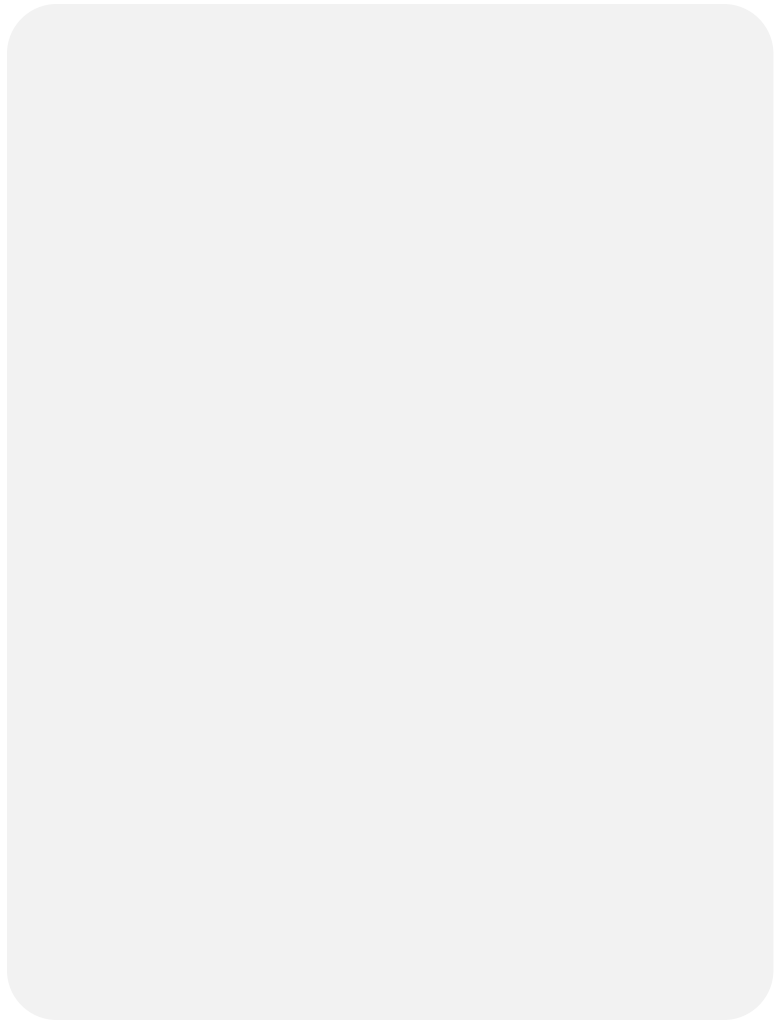


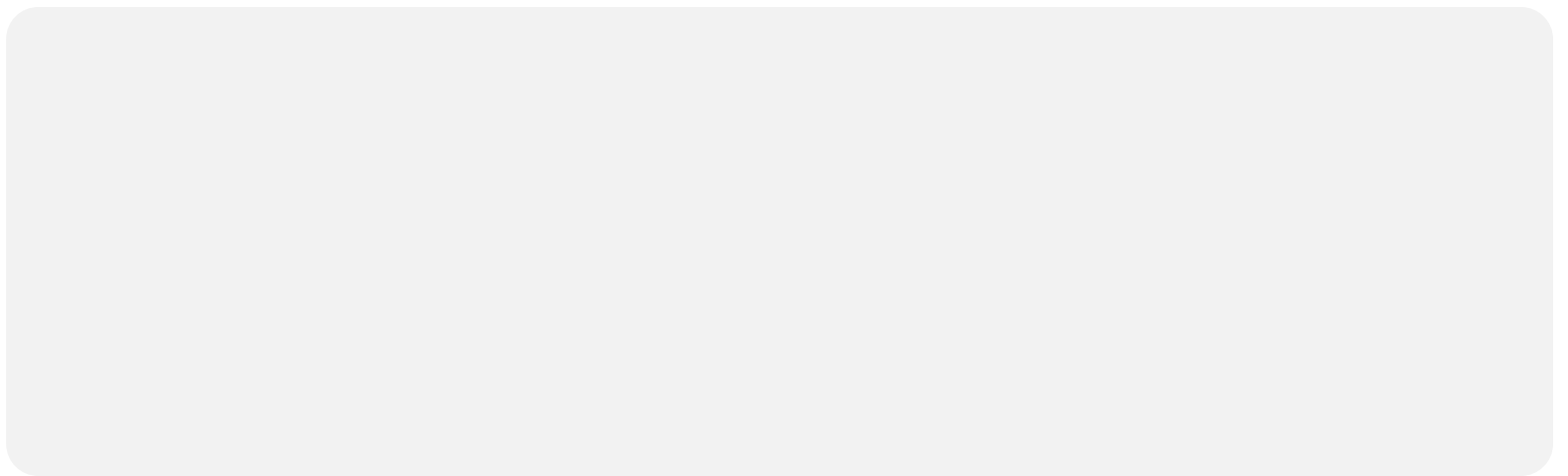
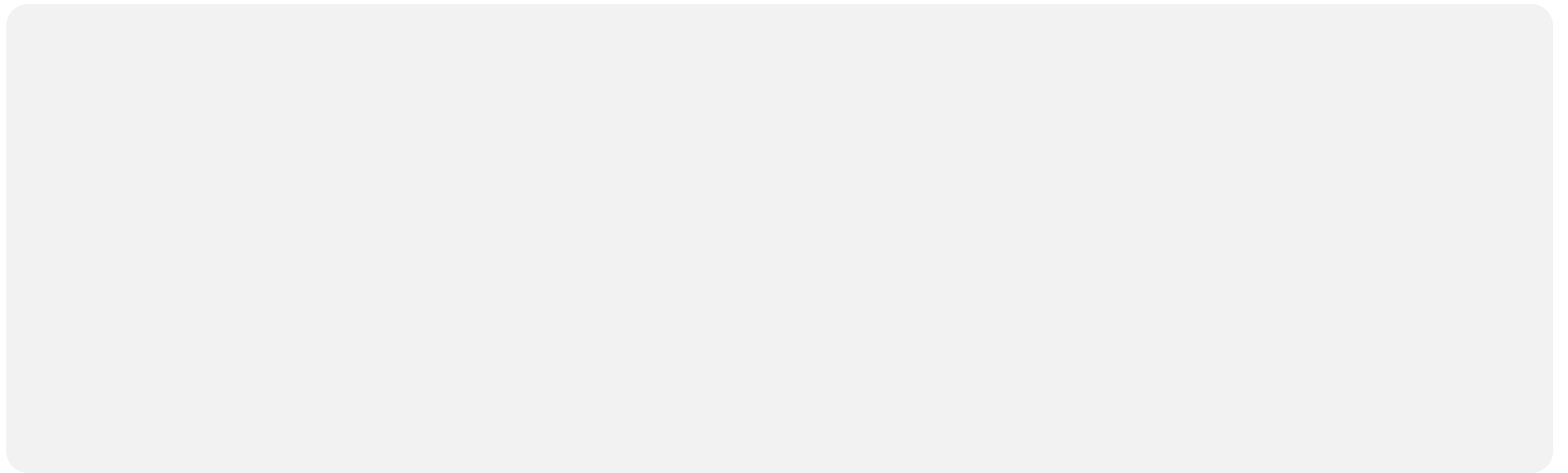
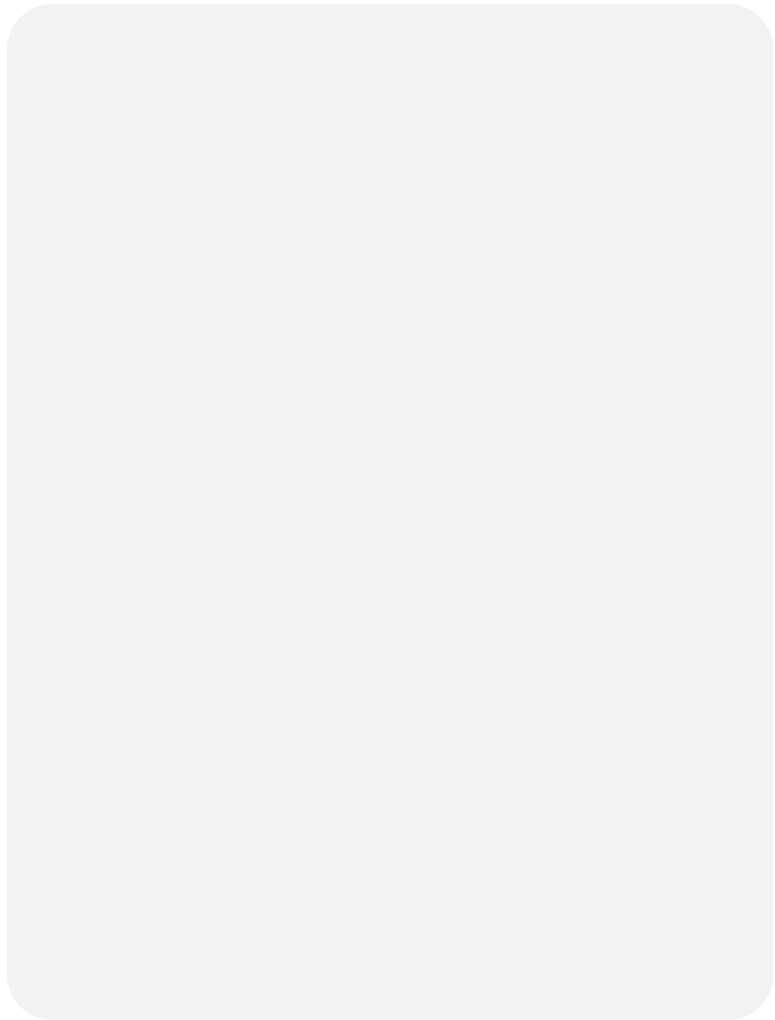


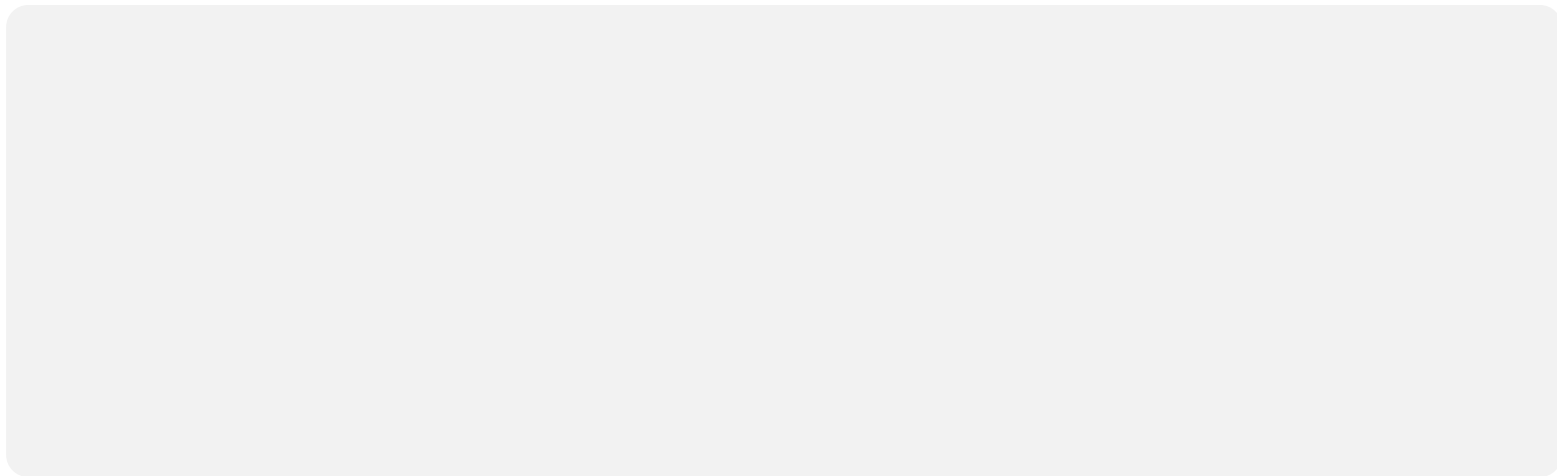
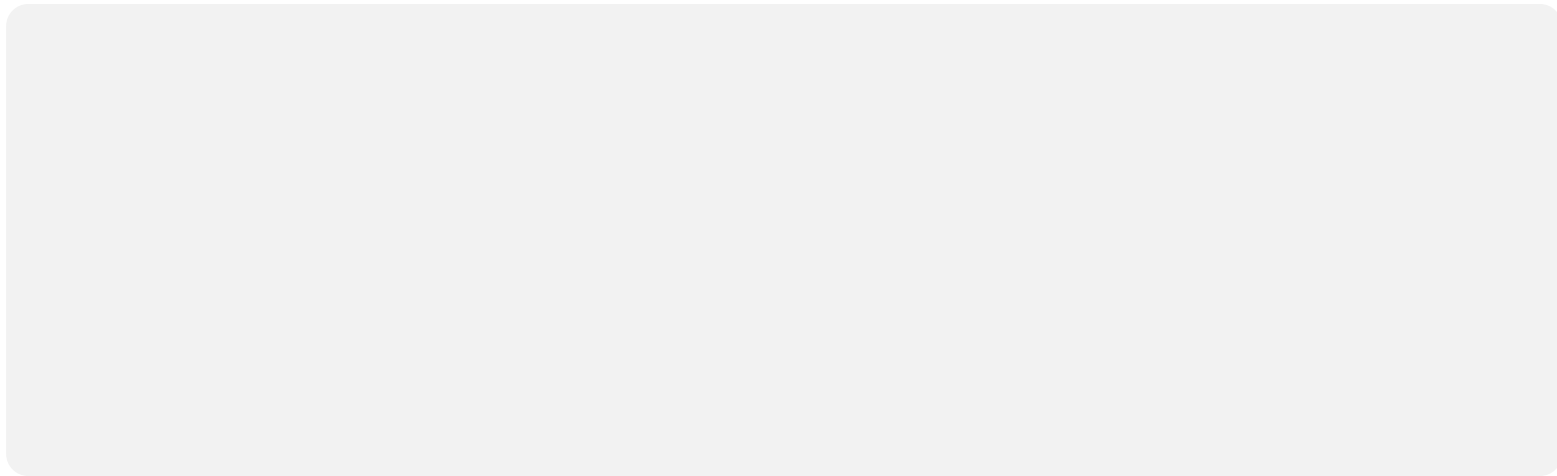
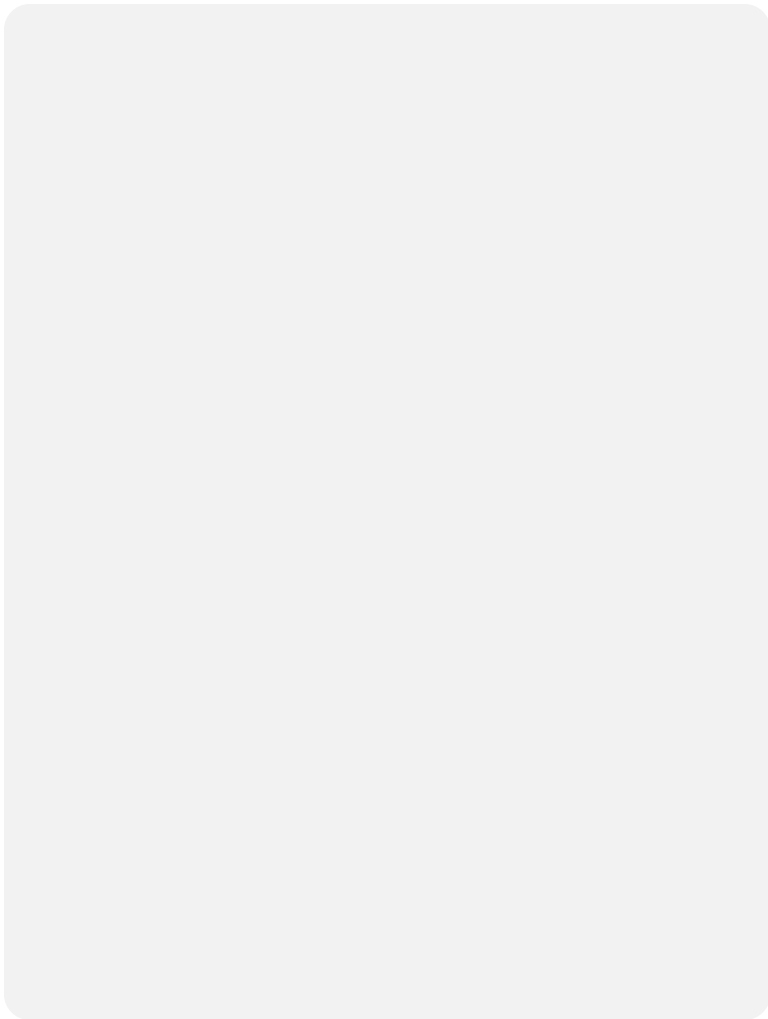


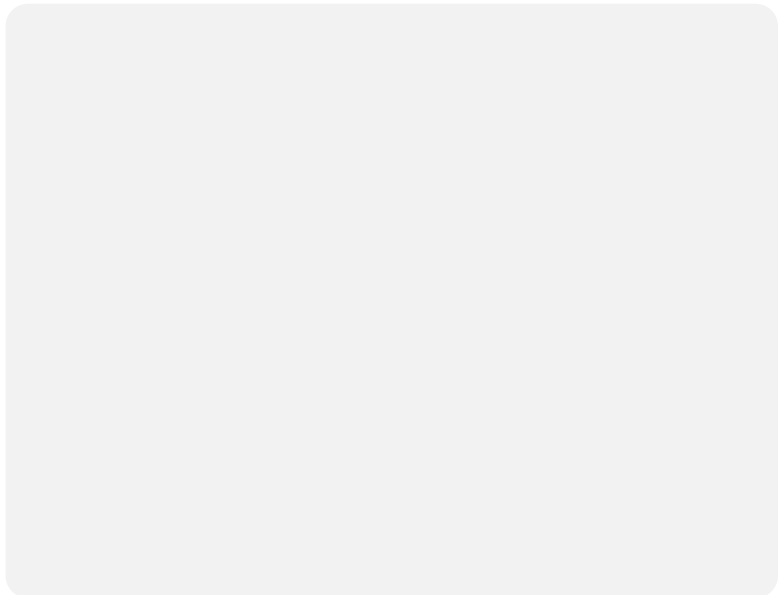
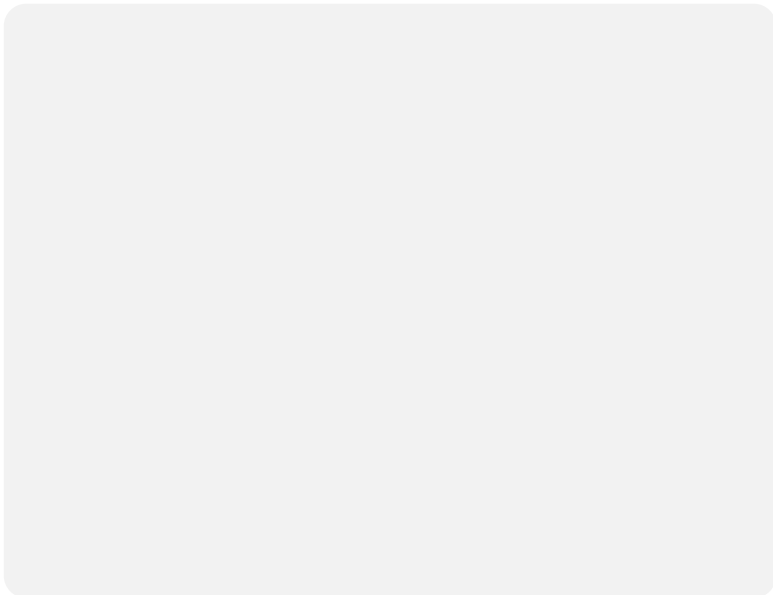
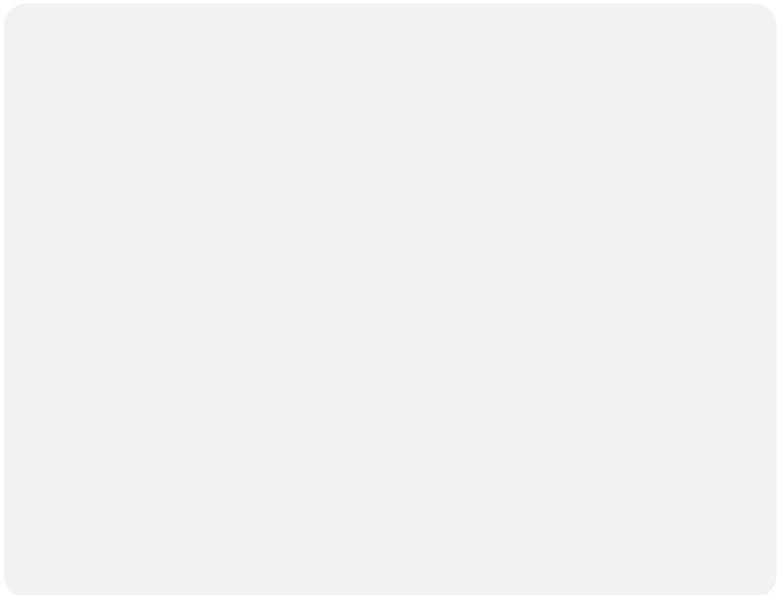
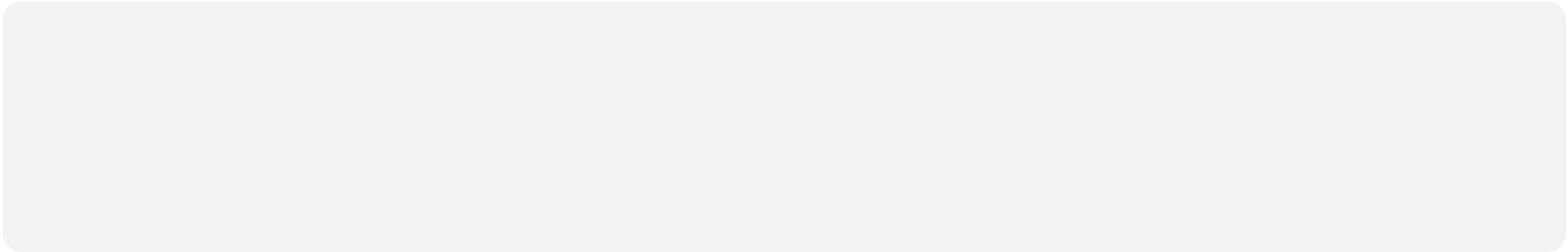


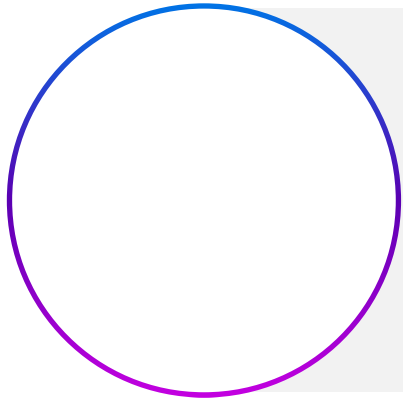


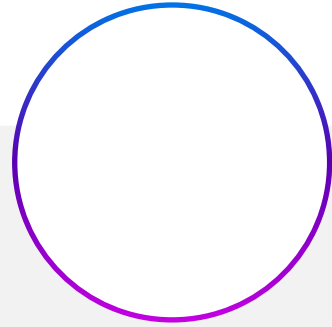
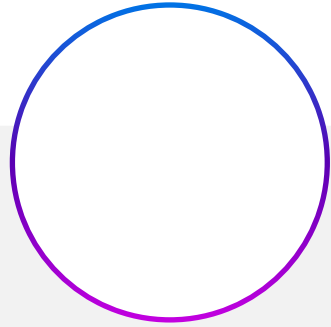
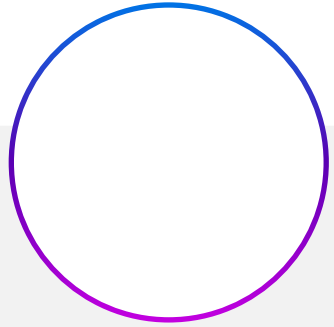


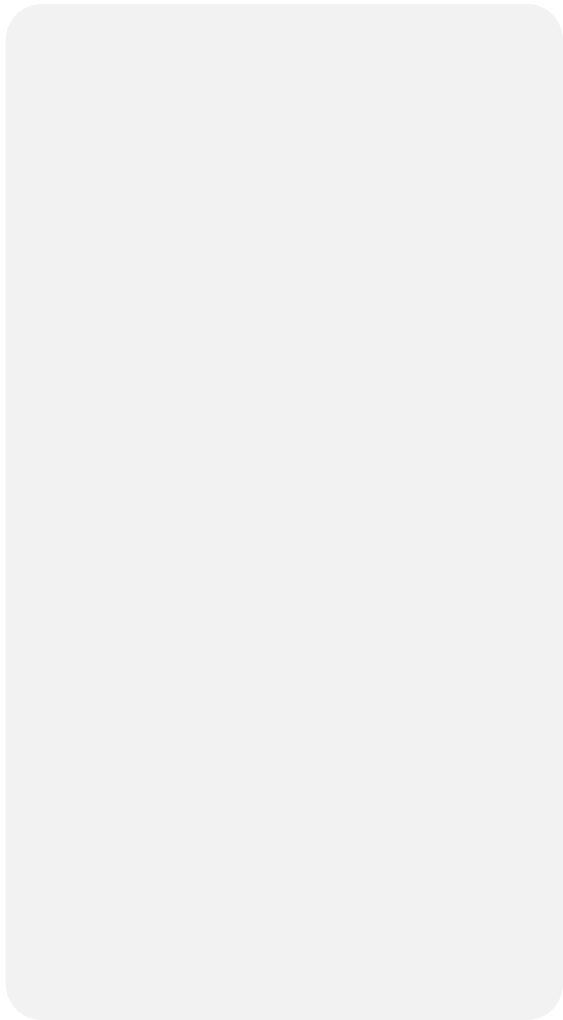
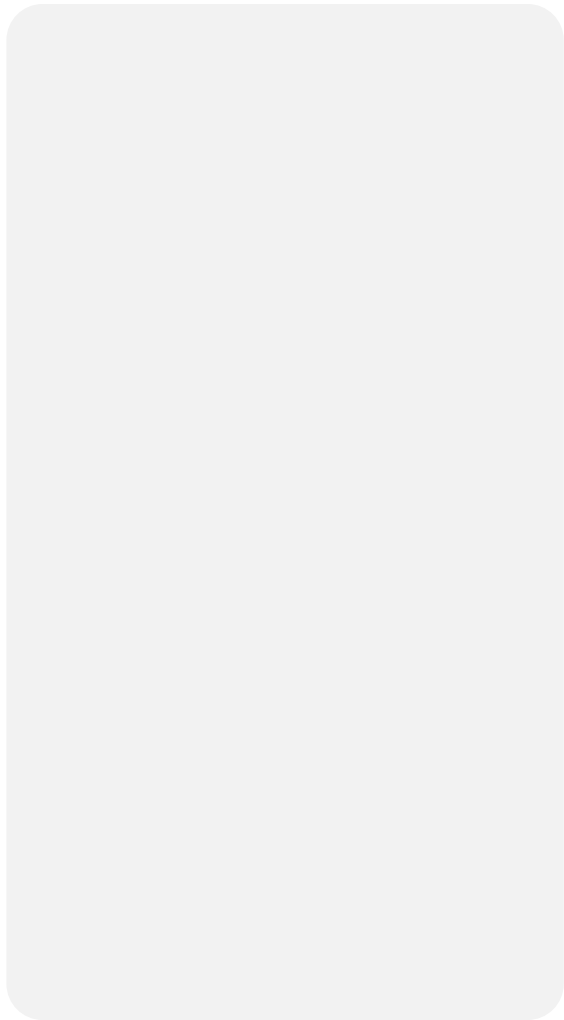
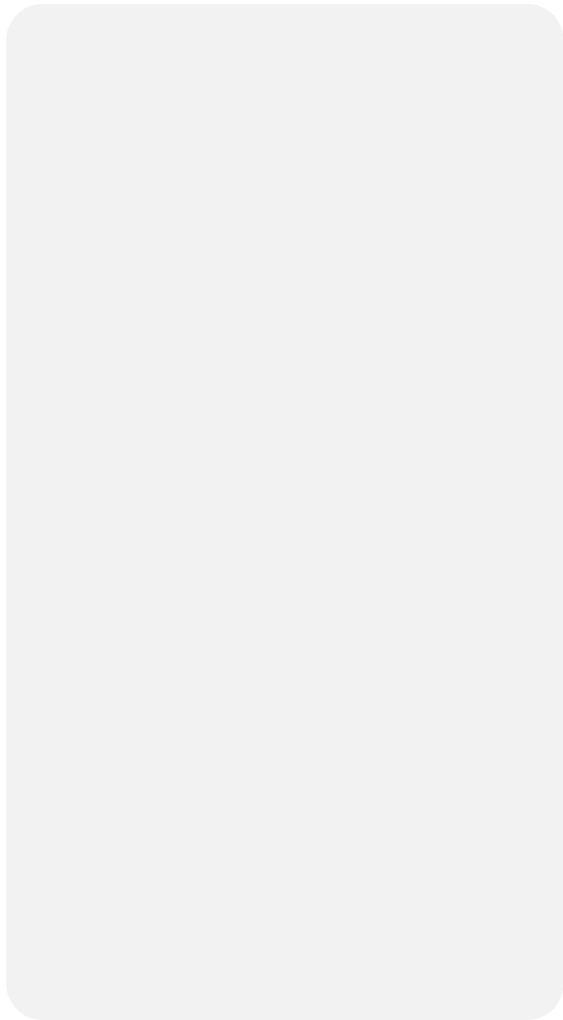
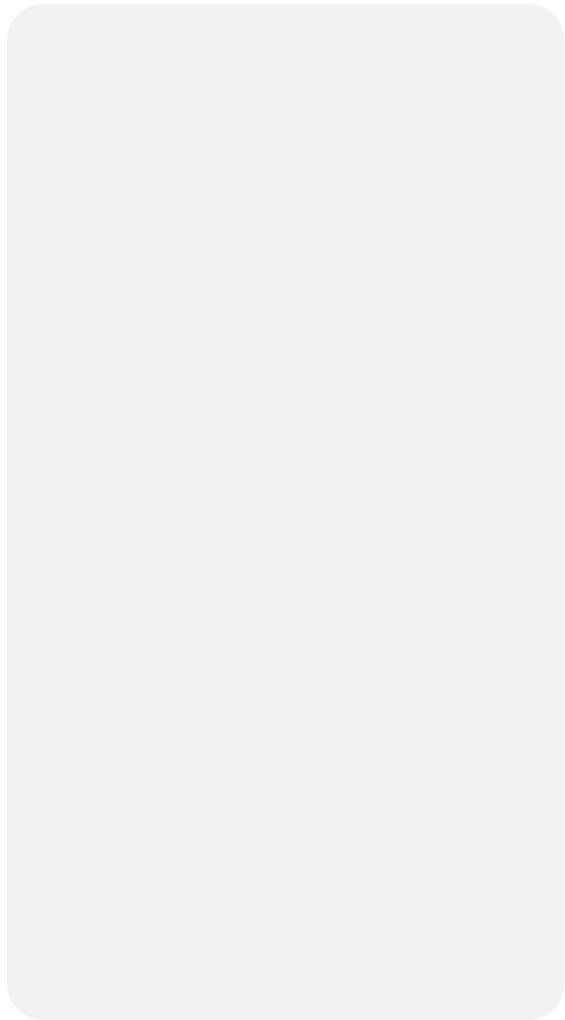


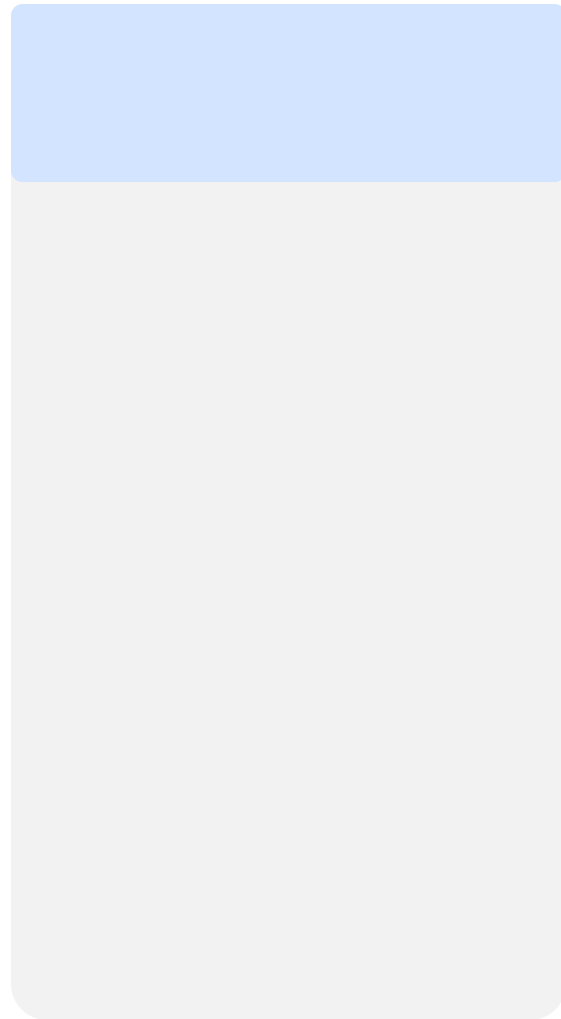
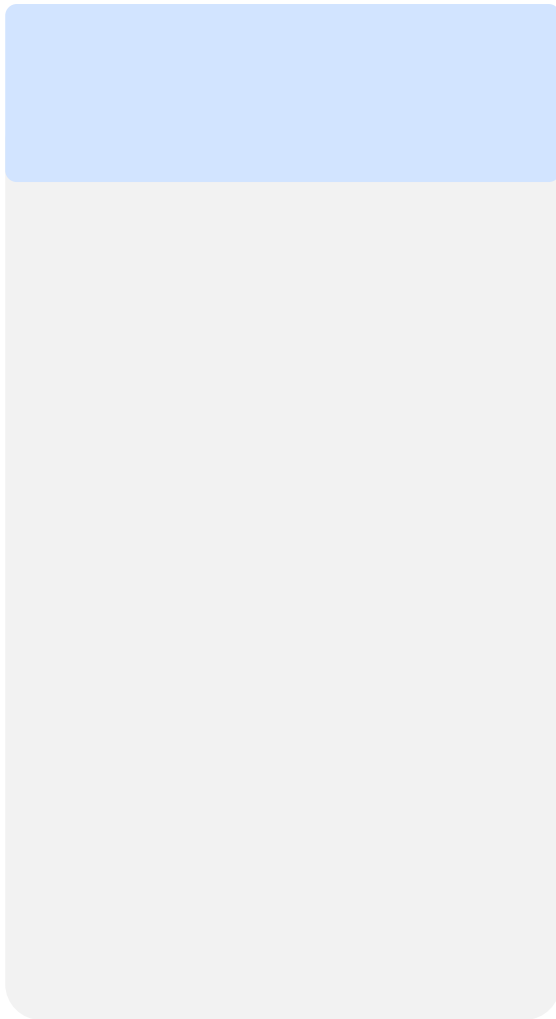
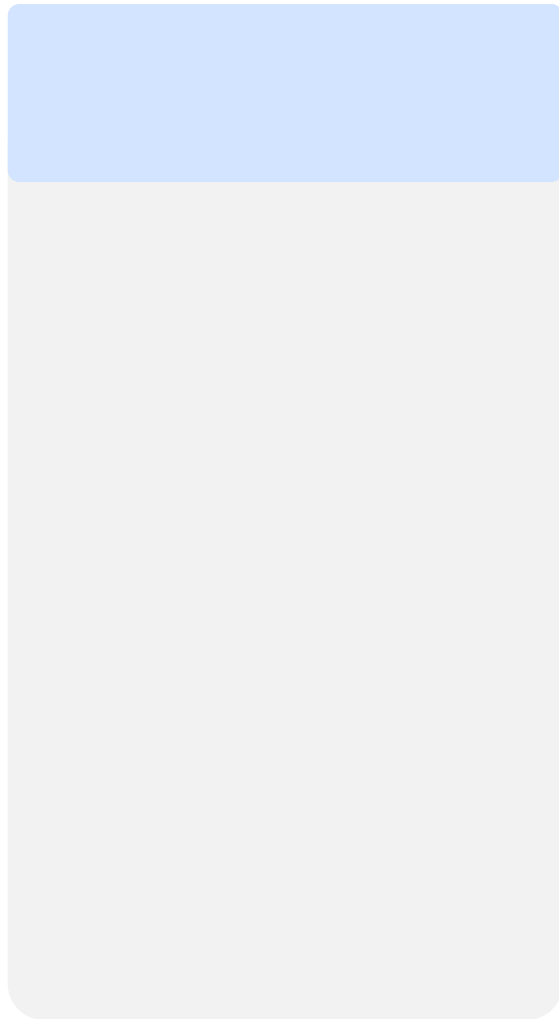
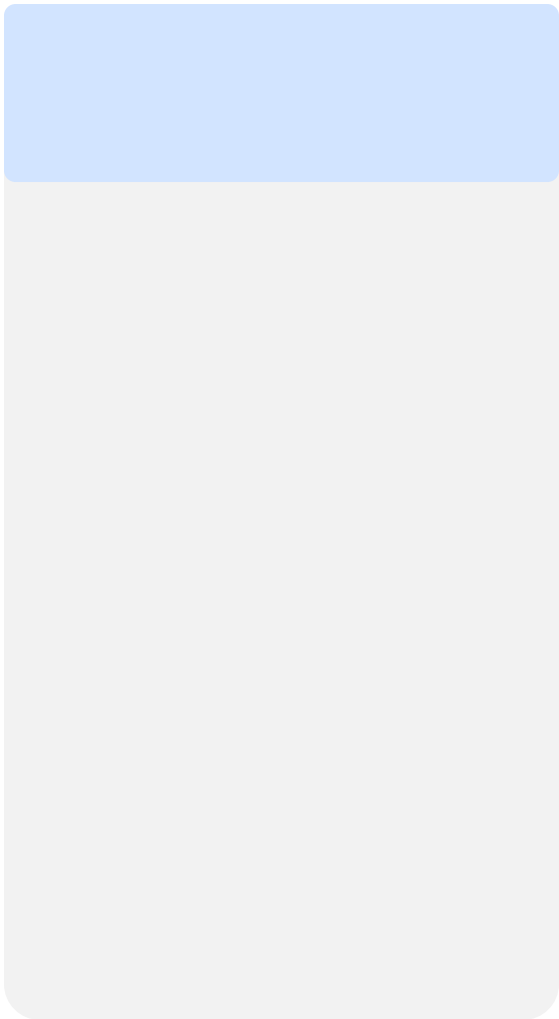


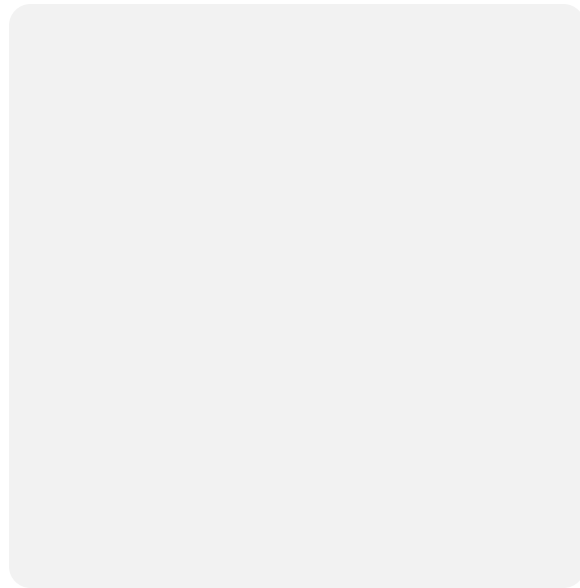
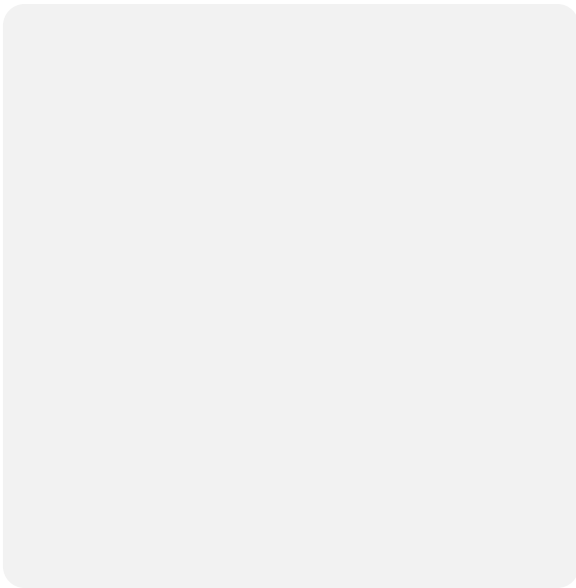
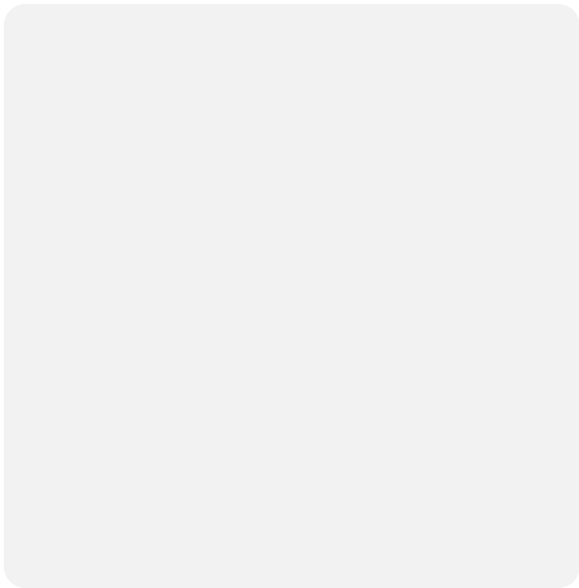
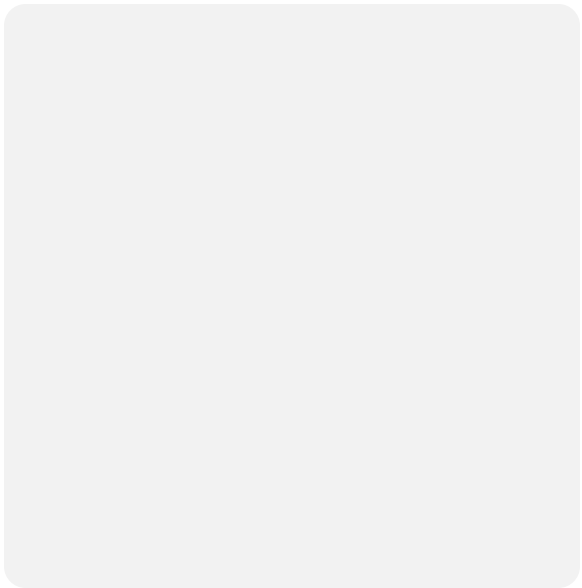




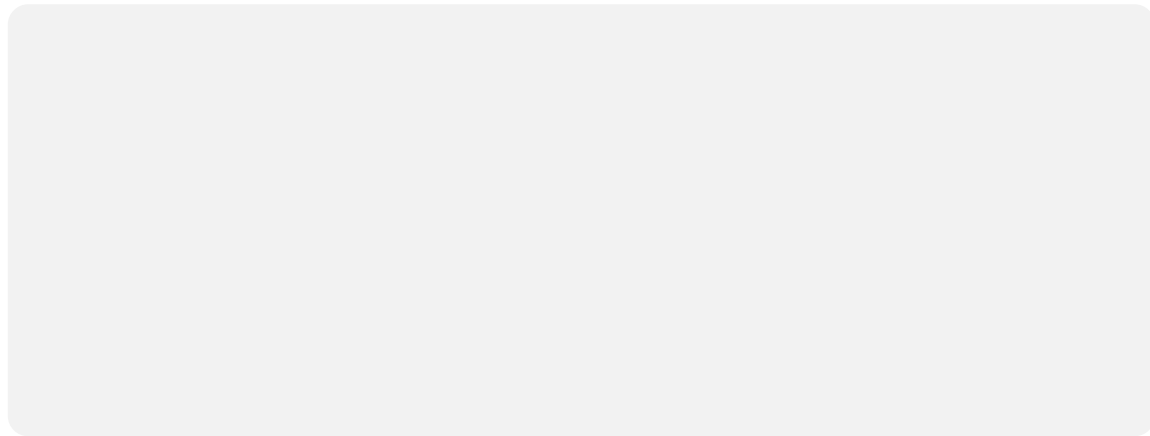
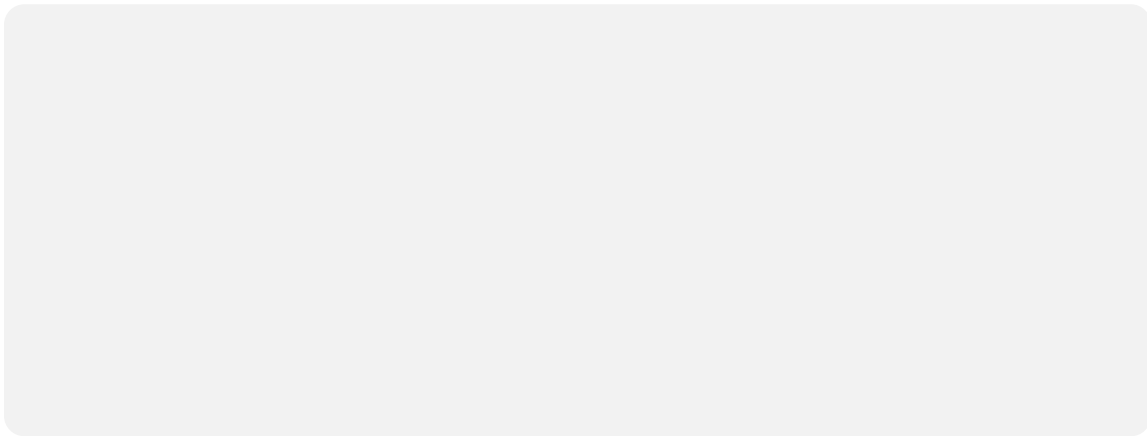
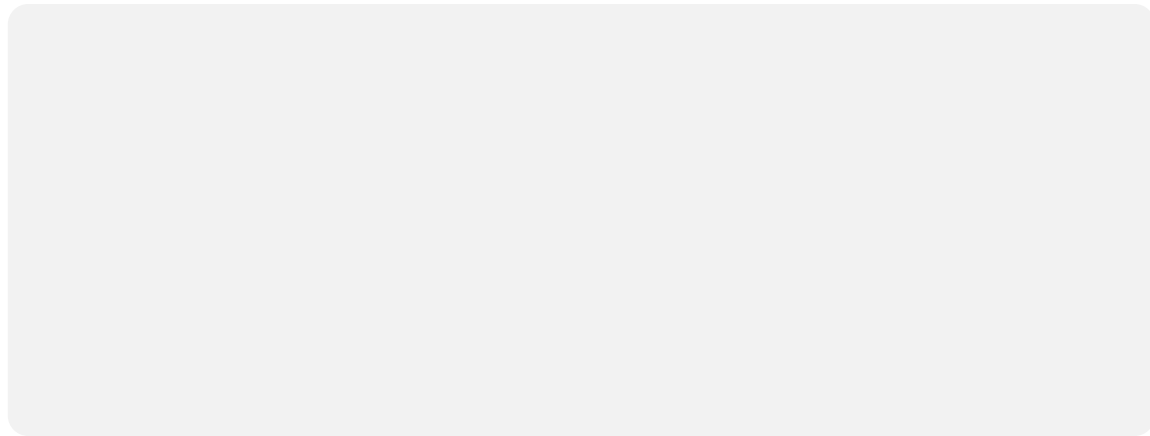
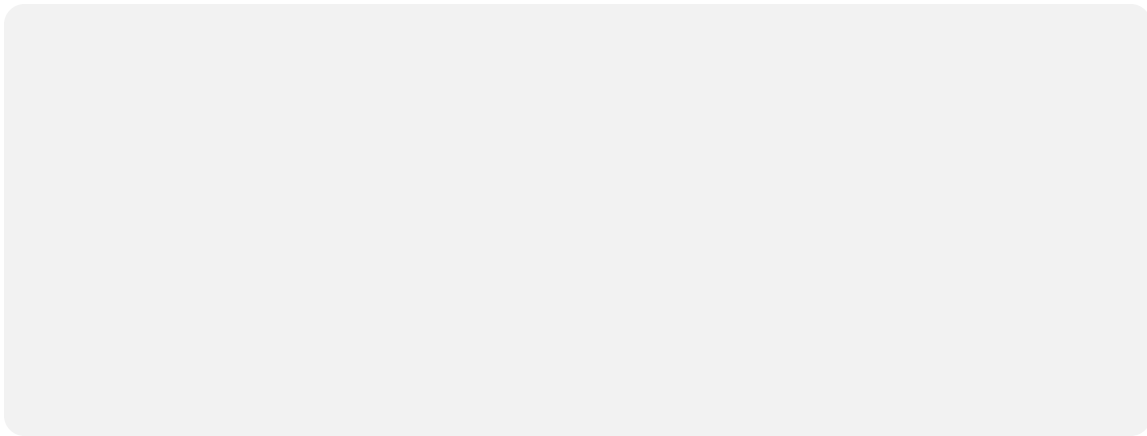




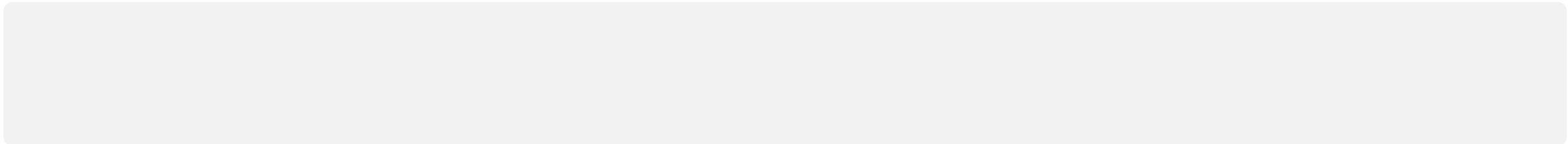
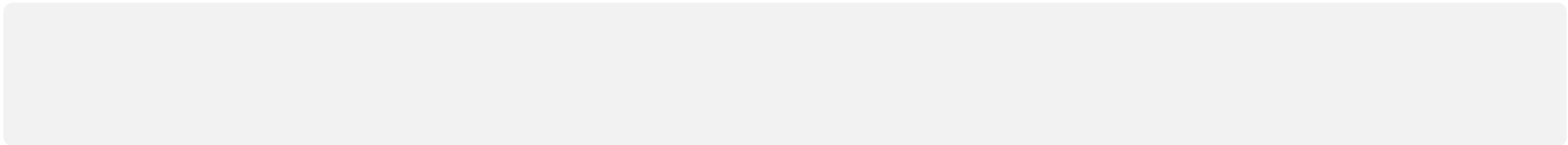
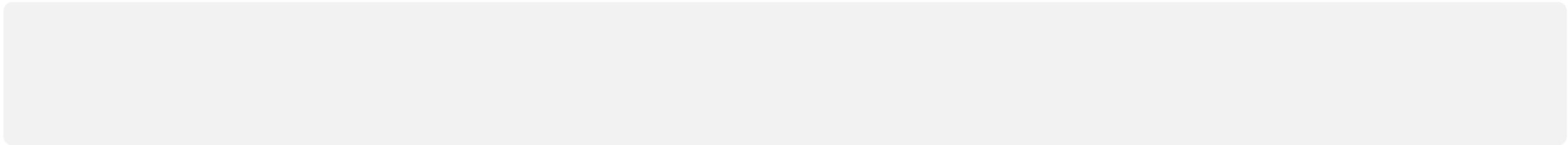
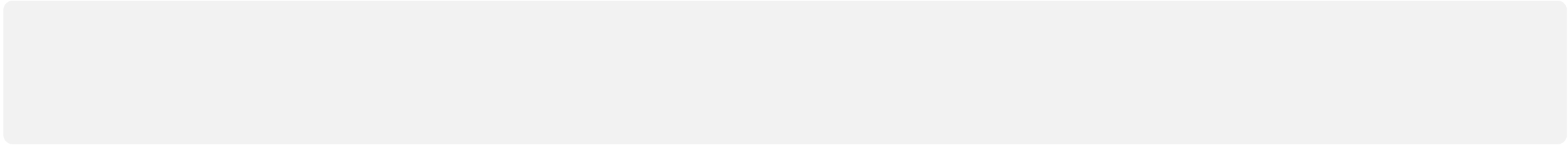


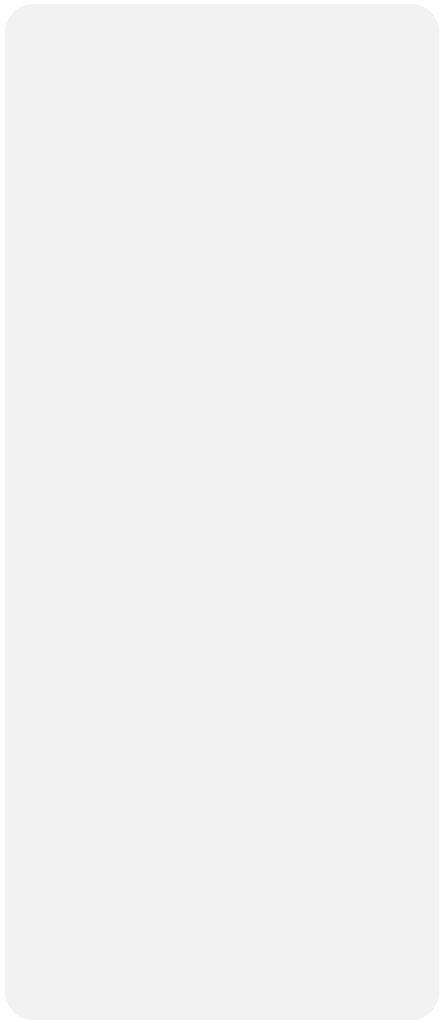
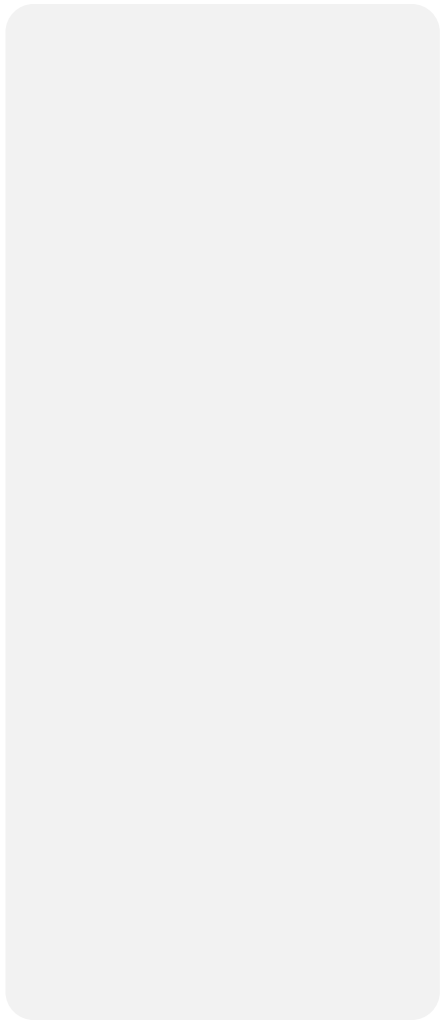
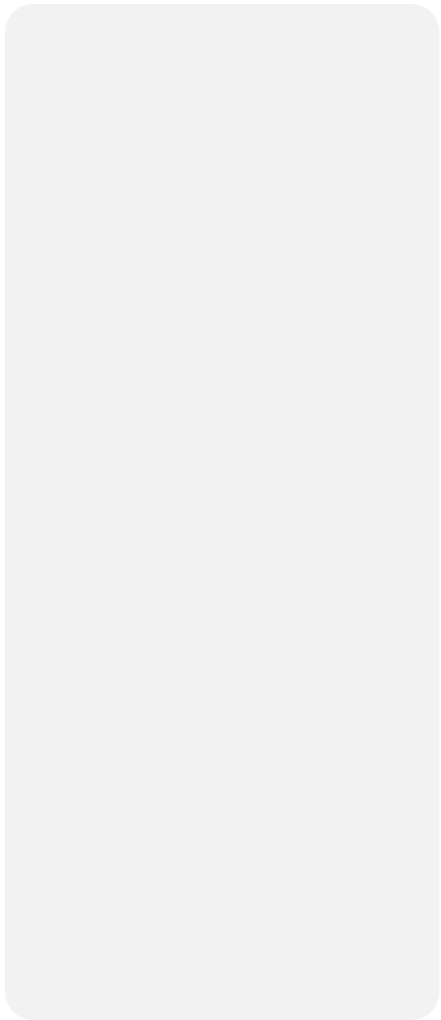
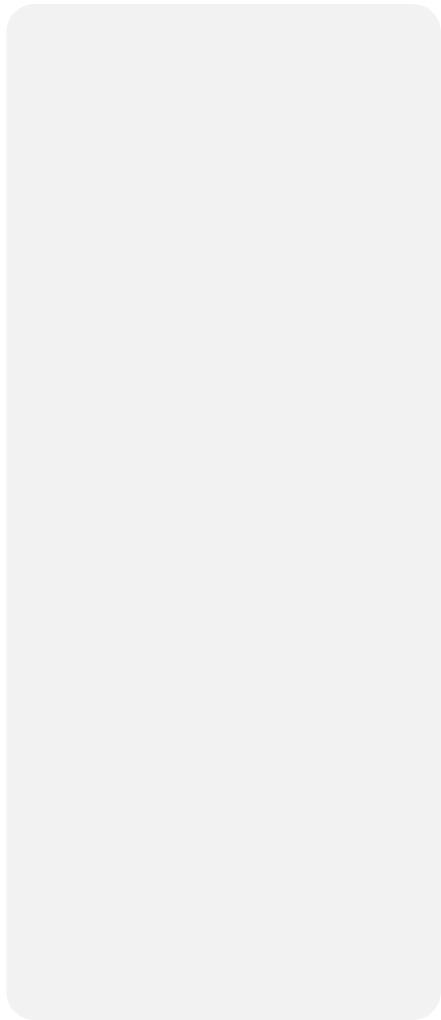
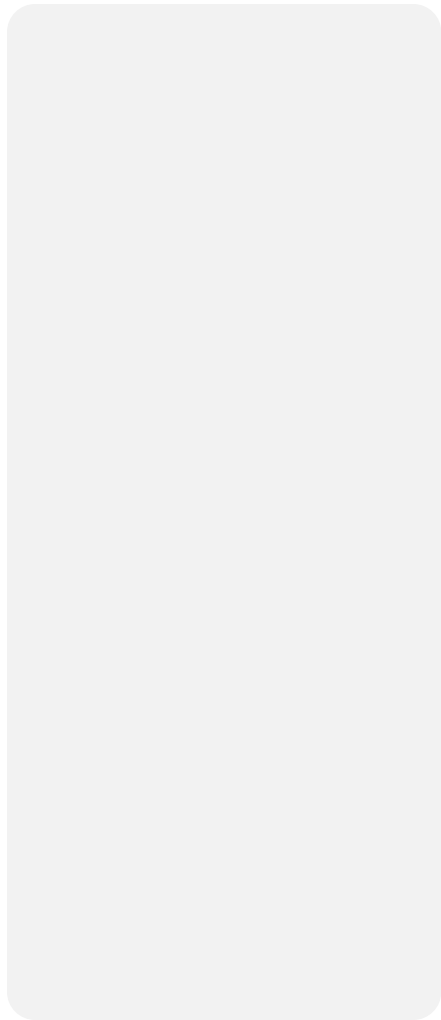


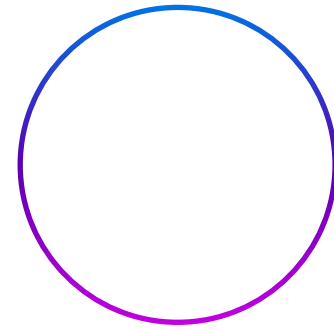
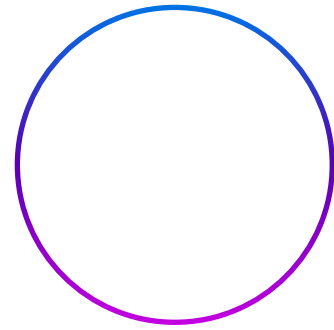
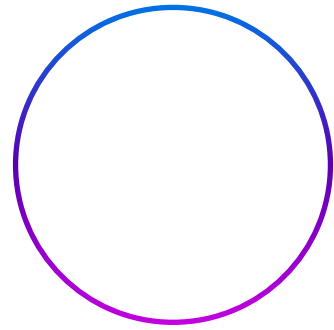
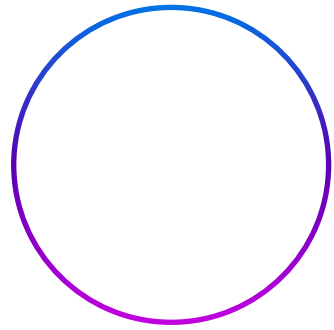
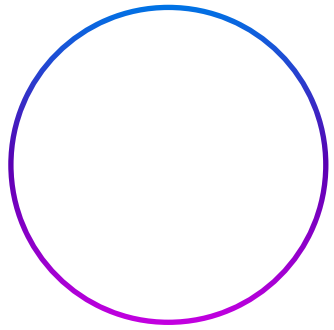






















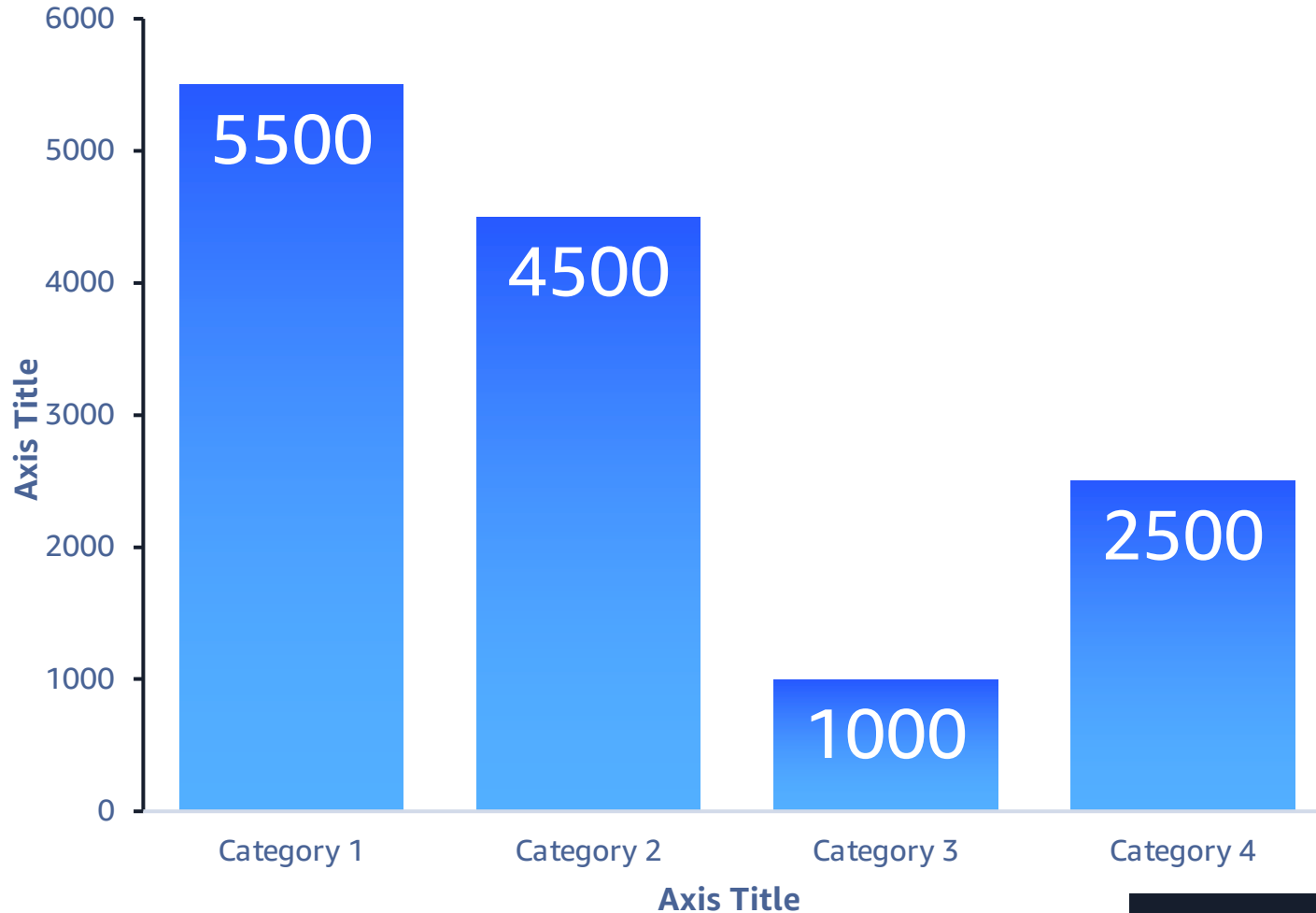




# Comparison

## To update the chart:

Select the graph then choose the menu option on the far right of the tool bar at the top "Chart Design" > "Edit Data". Bar height, spacing, and some axis labels will automatically adjust. See more info [in this Microsoft article](#).



## Main point

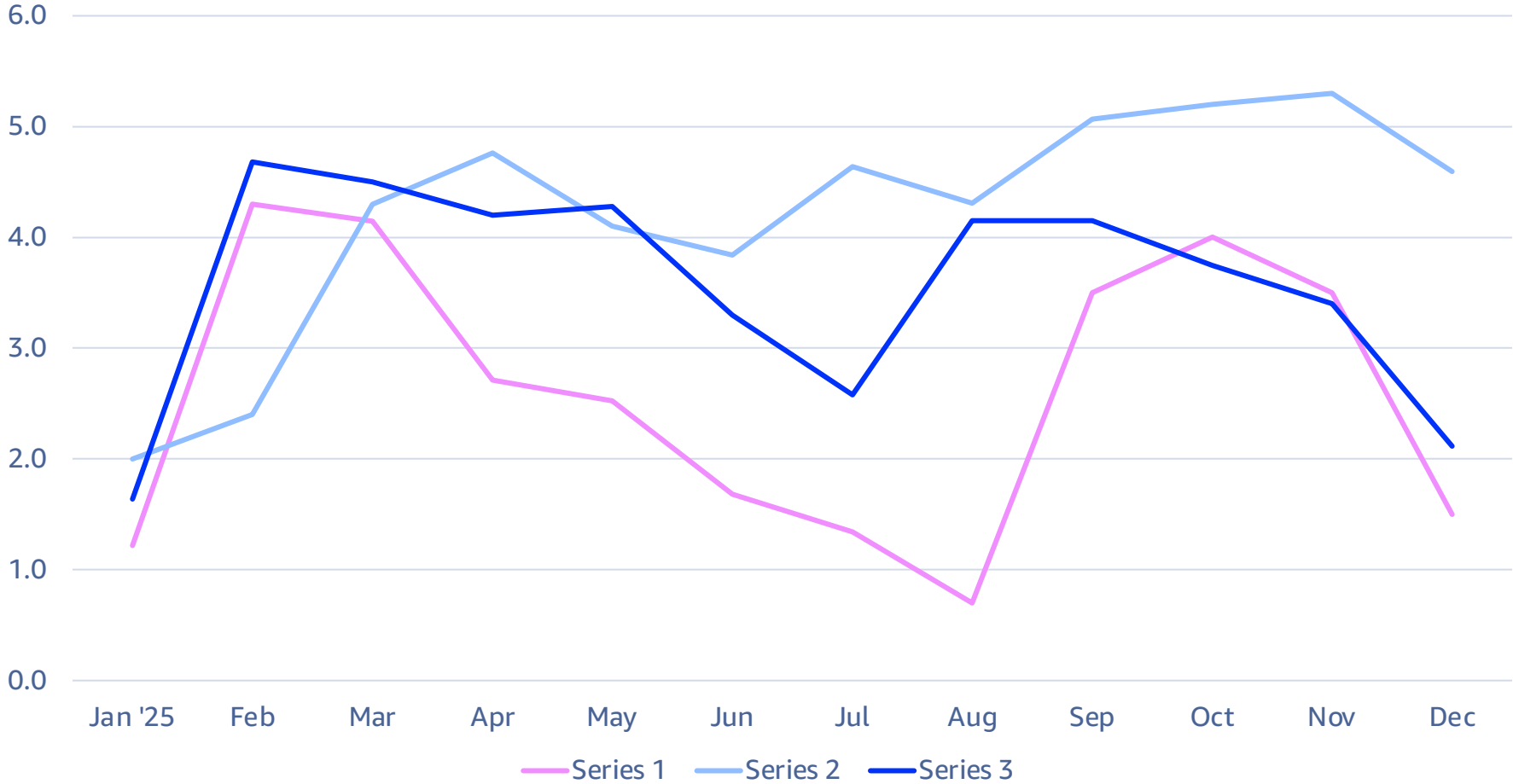
Full-sentence description of relationship between data points. Description may be multiple sentences in length.

237%

Note: You will have to decrease the font size of the above percentage if you are going over three digits.

# Trends

**To update the chart:**  
Select the graph then choose the menu option on the far right of the tool bar at the top "Chart Design" > "Edit Data". See more info [in this Microsoft article](#).



**Main point**  
Full-sentence description of data points.



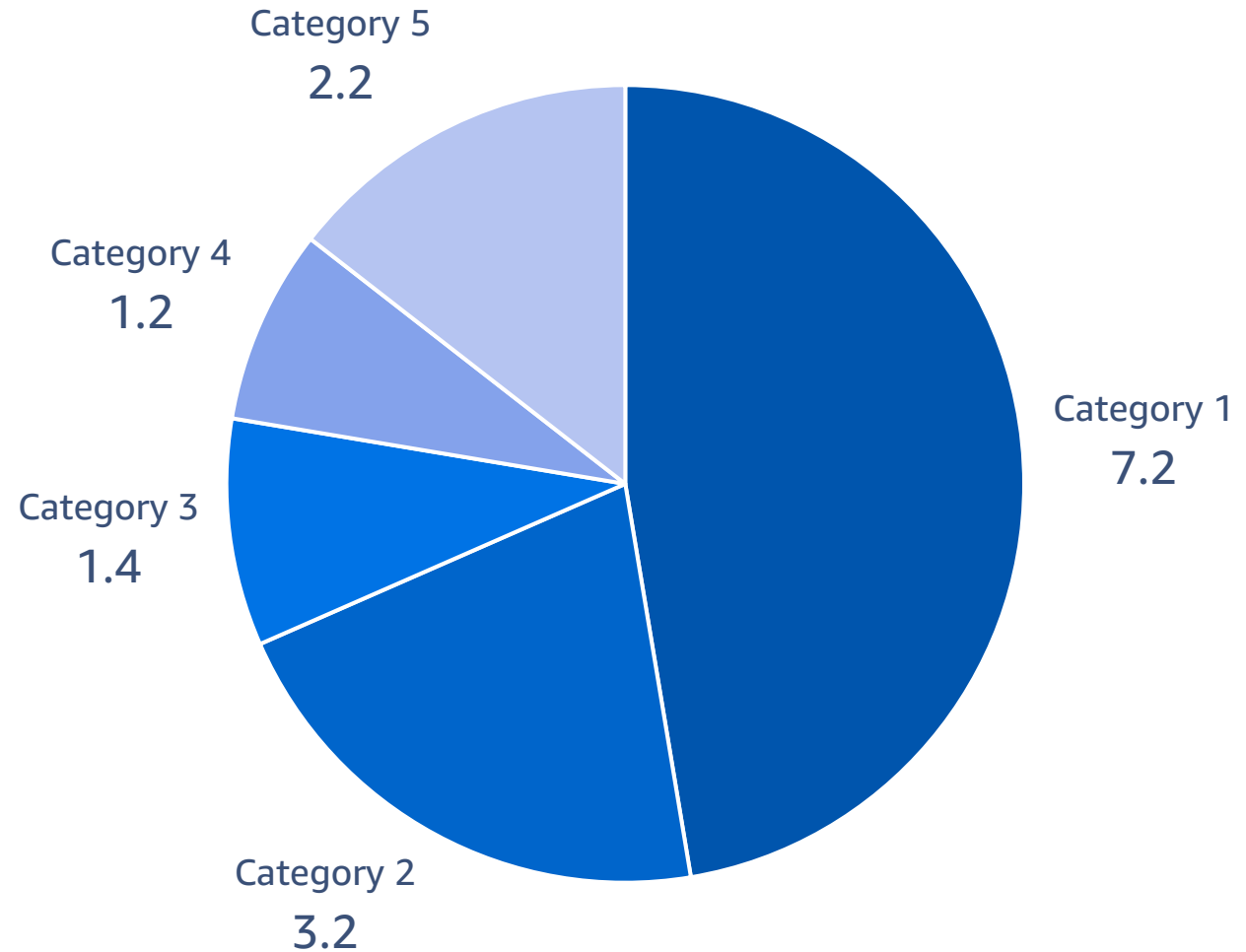
# Parts of a Whole

## To update the chart:

Select the pie graph, then choose the menu option on the far right of the tool bar "Chart Design" > "Edit Data". To change the color, double click the slice you want to change which will bring up a side bar on the right. Click the paint bucket > color > select what color you want to update it to. We recommend staying in the blue palette. The size, proportion, and labels of the slices will automatically adjust. See more info [in this Microsoft article](#).

## Main point

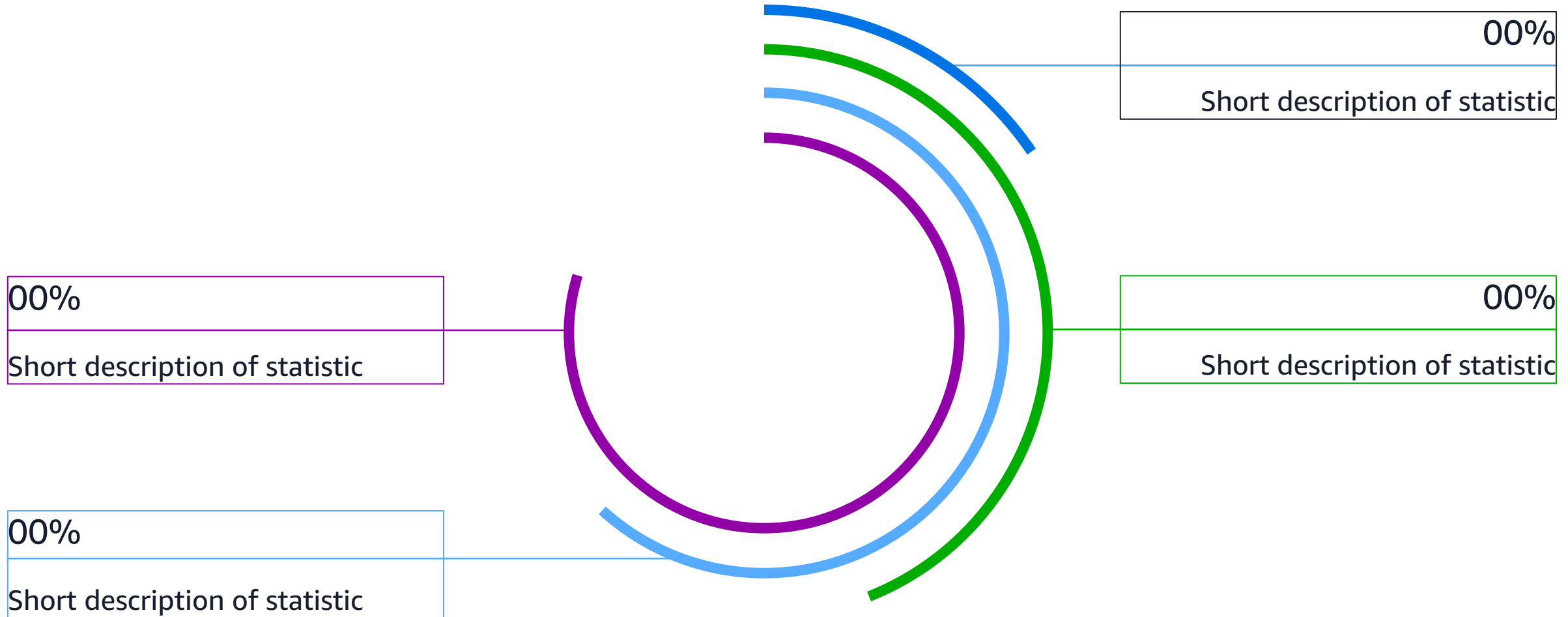
Full-sentence description of data points.



# Parts of a Whole

## To change the percentage depicted:

Select an arc and drag the yellow dot to make the arc longer or shorter (do NOT resize with the white handles/dots). Use visual judgement to approximate the percentage. **Note:** arcs should get longer as they approach the center (i.e., pink depicts a greater percentage than orange). You may need to reposition the data labels (click label, drag to reposition) to make sure they are connected to their corresponding arcs.



# Comparisons

To center the category label above the data circle:

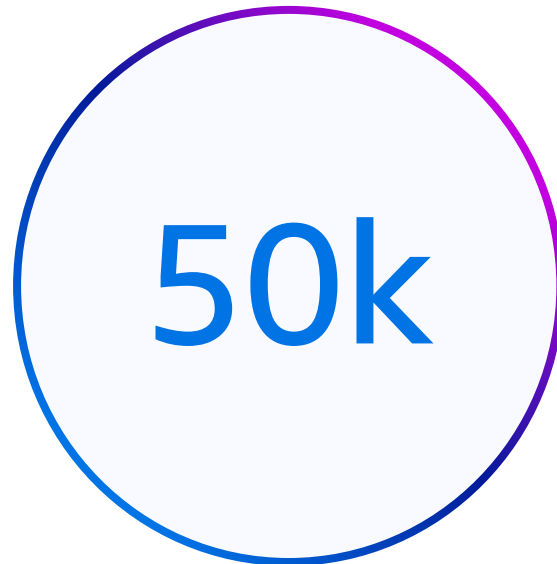
To [keep the "Category" labels centered](#), hold shift and select the circle you want to adjust and its corresponding category label. Then choose the menu option on the far right of the tool bar "Shape Format" > "Align" > "Align Center". To align all three circles on the same baseline: Hold shift and select all three circle. Then choose the menu option on the far right of the tool bar "Shape Format" > "Align" > "Align Bottom".

Full-sentence description of relationship between categories.

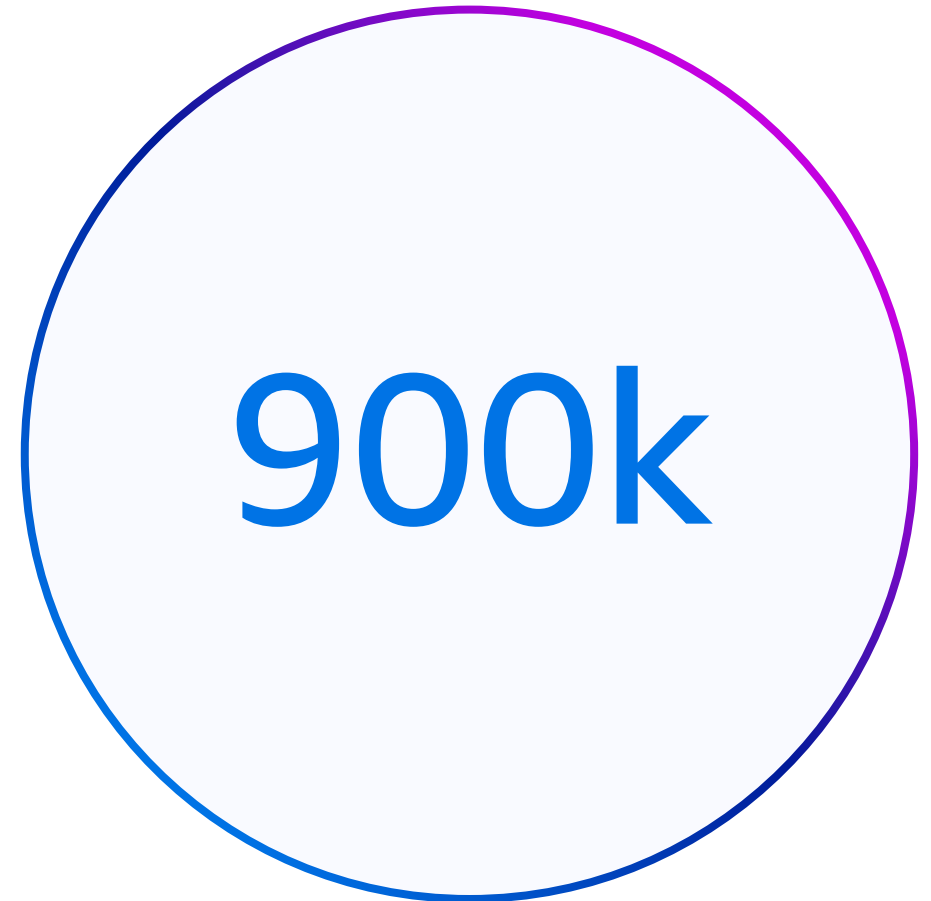
CATEGORY 1



CATEGORY 2



CATEGORY 3



# Comparisons

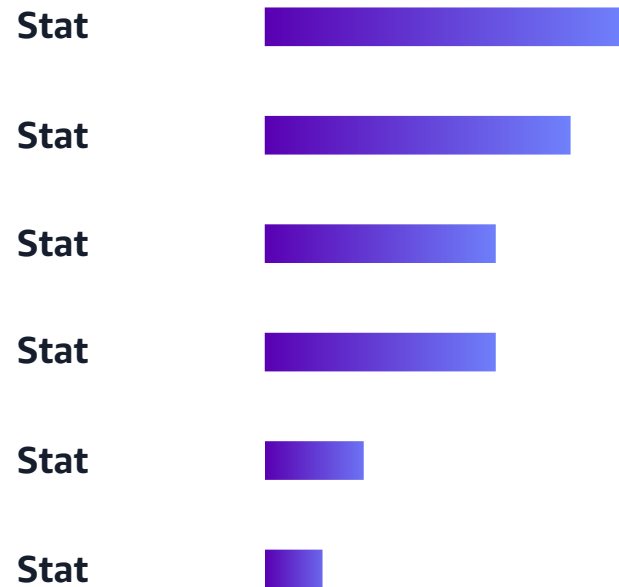
Full-sentence description of relationship between categories.

To resize bars:

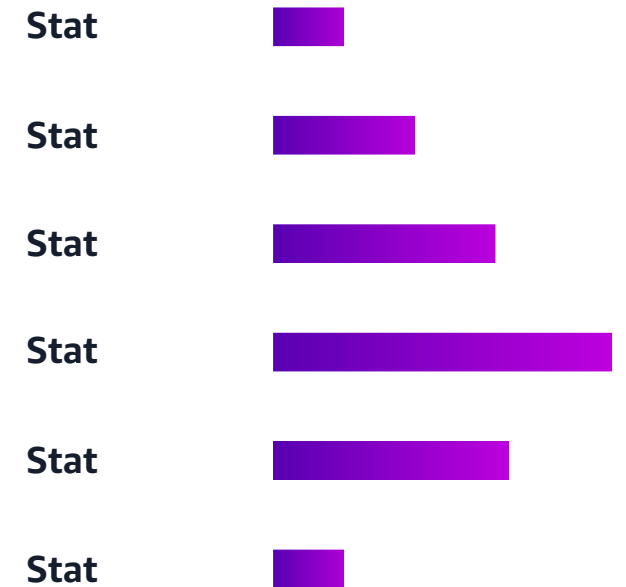
Click on one of the horizontal bars, hold shift, select the white dot, and drag to be the approximate relative proportion.

Note: holding down "Shift" when resizing keeps them flat horizontally.

## Category 1



## Category 2



# Comparisons

## How this graph works:

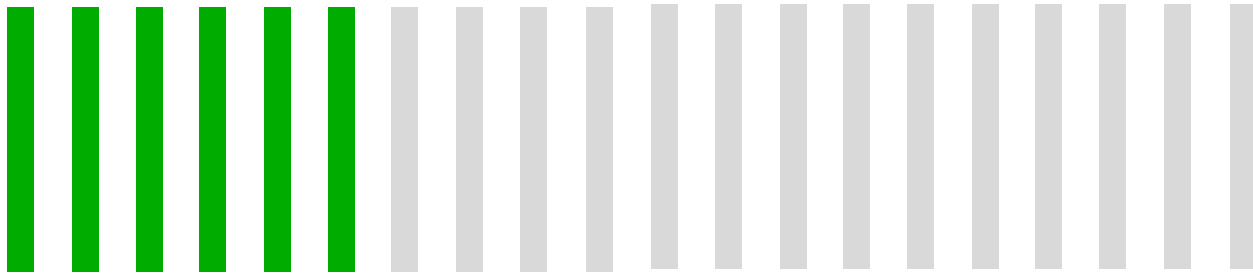
Both rows have 20 bars, each representing 5%. Round to the nearest 5% of your stat and fill in the appropriate number of bars with the orange or gold color.

## How to recolor bars:

Select the bar you want colored (if you want to color multiple, hold shift and click on all the bars you want to recolor) then choose the menu option on the far right of the tool bar "Shape Format" > "[Shape Fill](#)" [paint bucket](#), select appropriate color by selecting "Eyedropper" and select a point on one of the colored lines to get the same hue.



00% statistic description



00% statistic description

# Maps

## To resize, reposition, or duplicate circles:

Resize: Select circle and drag on white handles/dots to adjust size.

Reposition: Select circle and drag to new place on the map.

Duplicate: Click circle and then copy / paste. Click on newly pasted circle and reposition as needed. Make sure to only select the circle and not the map image when moving.

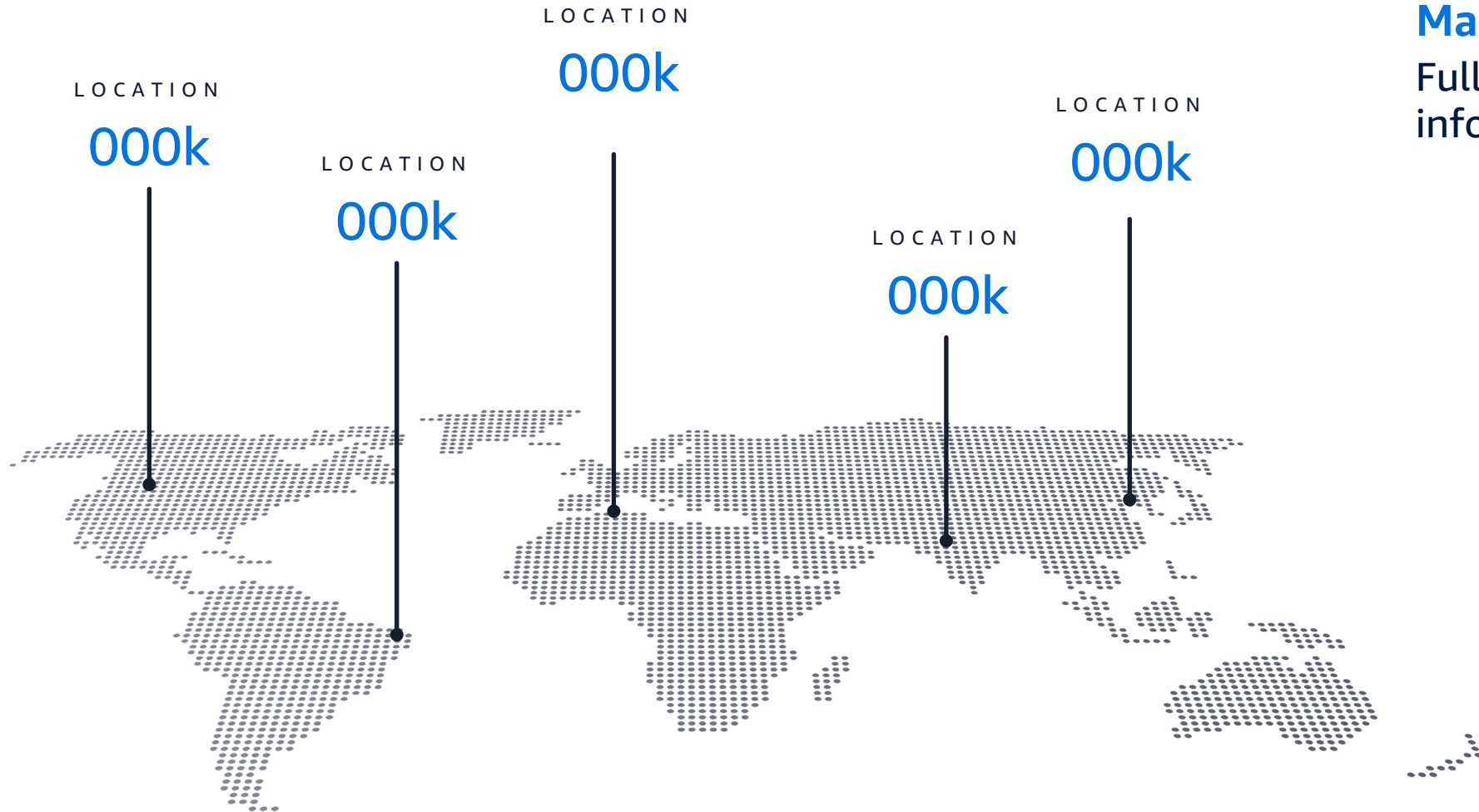
Do not move or recolor map.



# Maps

To update text and move markers as needed:

Hold shift and click on the white line and the text box above the line to move them together.  
The map is somewhat abstracted, so location need not be precise.



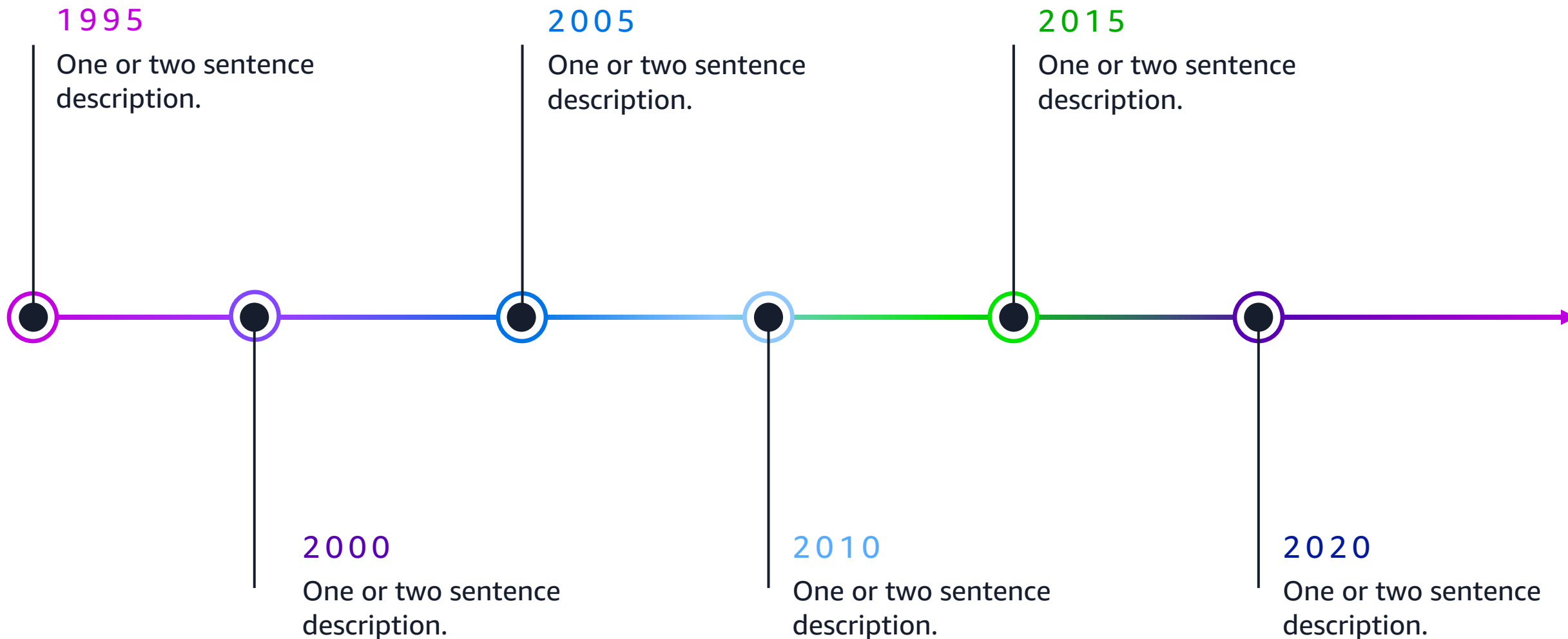
## Main point

Full-sentence description of information conveyed by map.

# Journey

## To shift date points:

Hold shift and select one of the white lines (which has a white dot with it) and the corresponding outline circle (colored) and then drag to a new position. To recolor the outline circle to match the new placement on the gradient line, select only the outline circle, choose the menu option on the far right of the tool bar "Shape Format" > "Shape Outline" > "Eyedropper" and select a point on the gradient line near the circle to match the color.



# Journey

## Have overlapping events?

To suggest a journey step to continue past a later step, you can adjust the length of the bars.

## To adjust the length of the bars:

Select the rectangle shape, click and drag white dot on the right to extend the length.

Journey step

Journey step

Journey step

Journey step

Journey step

# Typographic

## To update data numbers:

Select number text box and type in relevant data stat.

Depending on how many numbers you need to depict for each stat, you might need to decrease font size to fit.

00

Longer, full-sentence  
description of number  
or statistic

00%

One/two-word  
description

00M

Longer, full-sentence  
description of number or  
statistic

# Typographic

To update data number:

Select number text box and type in relevant data stat.

00k

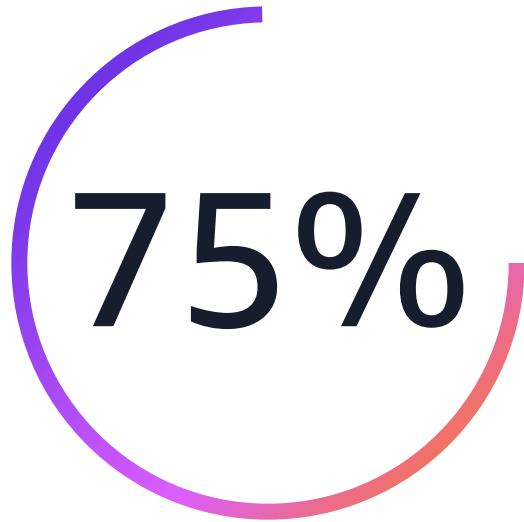
Description

# Typographic

To change the percentage depicted:

Select one of the gradient arcs and drag the yellow dot to make the arc longer or shorter (do NOT resize with the white handles/dot).

Use visual judgement to approximate the percentage.



Description of  
number or statistic



Description of  
number or statistic