Lab 2 - Figma

Graphical User Interfaces*

In this lab, we cover key concepts for making low or high-fidelity protoypes using Figma. On completion of this tutorial you will have a greater understanding of:

- How use the drawing tools e.g. shapes and lines.
- How to use masking and subtract tools to combine shapes.
- How to connect together frames to create interactive prototypes.

We will be working throughout on a (rough) sketch of an interactive app, reminiscent of the image below, showing the technology market gap in 2020. Whilst this app will not follow many of the GUI design principles you learn about in class, it contains enough ideas to learn the key basics of Figma – more detail and careful thought into the design is needed for your coursework submissions.

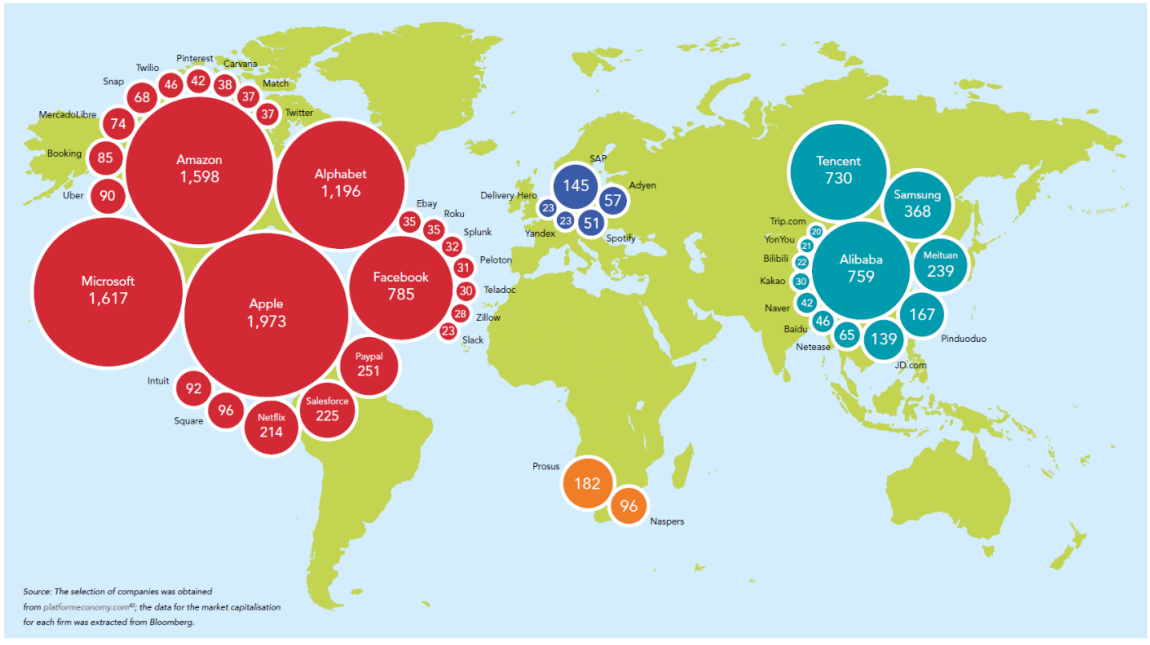


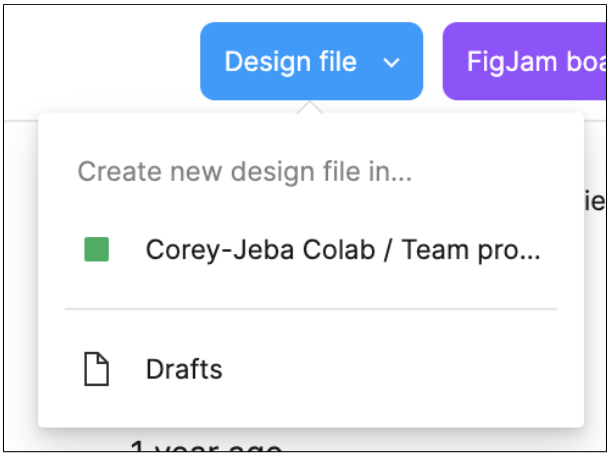
Figure 1: Big Tech market capitalization (above US$ 20 billion) in December 2020 (Source: SOMO Report 2020 by Fernandez et al.)

*Written by Corey Ford 2023/24 for Queen Mary University of London (c.j.ford@qmul.ac.uk)

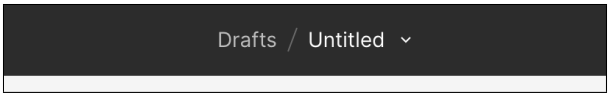
1 Getting Started

To get started with Figma go to `https://figma.com`. Then click on "Get started for free in the top right corner". if you have a Google account you can use this, otherwise you can create a new account.

One logged in, go to the blue "Design file" button in the top right. Then choose, "Drafts" to create a new file.

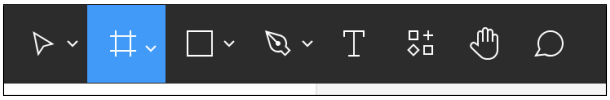


You can rename the file by clicking on "untitled" in the top centre of your screen.

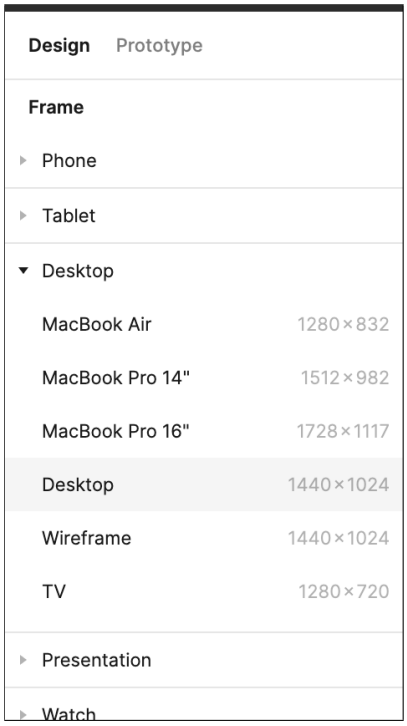


1.1 TASK: Frames

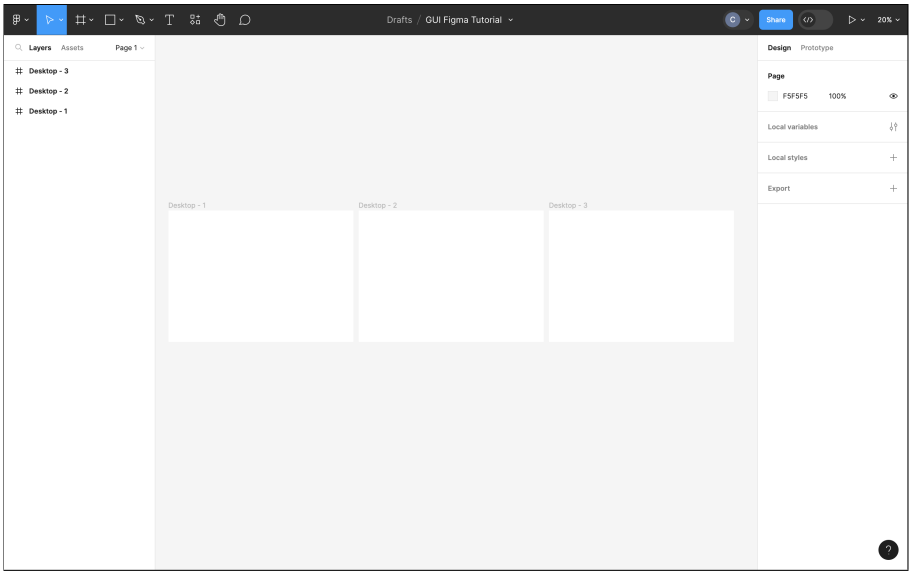
Each page of your app which you prototype in Figma will need a frame. Add this by pressing the grid icon in the top right toolbar.



The right hand side then gives options of different frame sizes for numerous devices. In this tutorial we will create frames for a Desktop application (1440x1024). Click this in the menu.



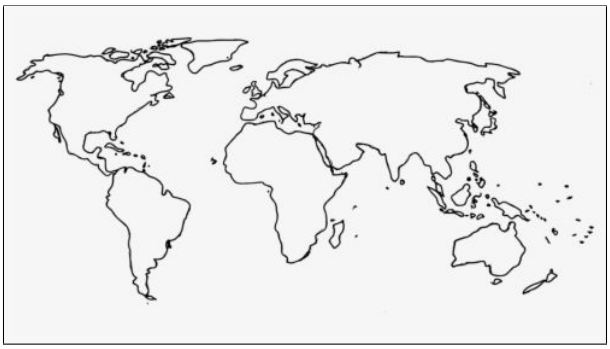
This will create a new frame into our page. Add two more frames of the same size next to eachother. You can zoom out of the main workspace using the plus and minus keys. You should see something like below.



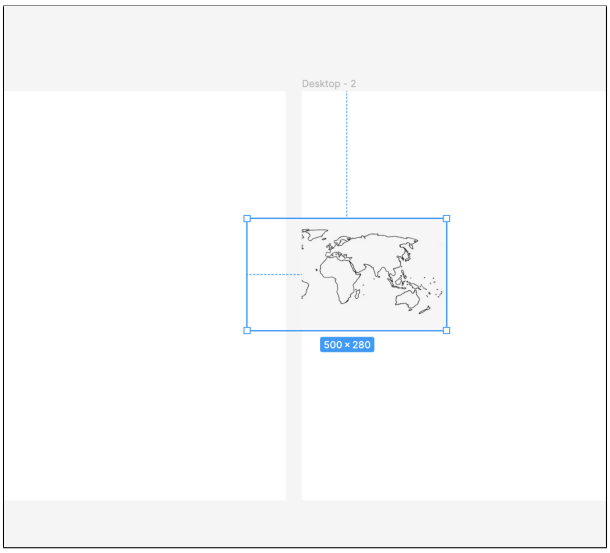
1.2 TASK: Adding Images

With a frame selected, on the right hand side we can see the various properties which we can modify for the frame. We encourage you to explore these at your own pace when designing your GUI applications.

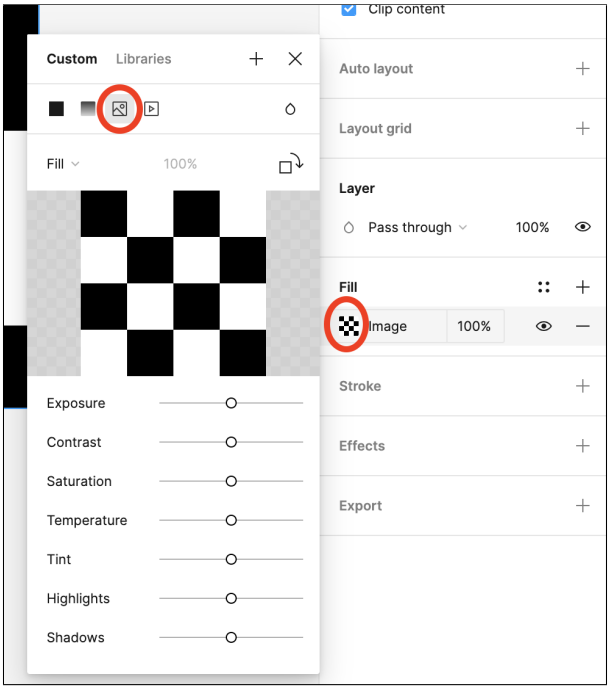
For the example in this tutorial we are going to add the image below to the frame (download here, or copy paste from this PDF).



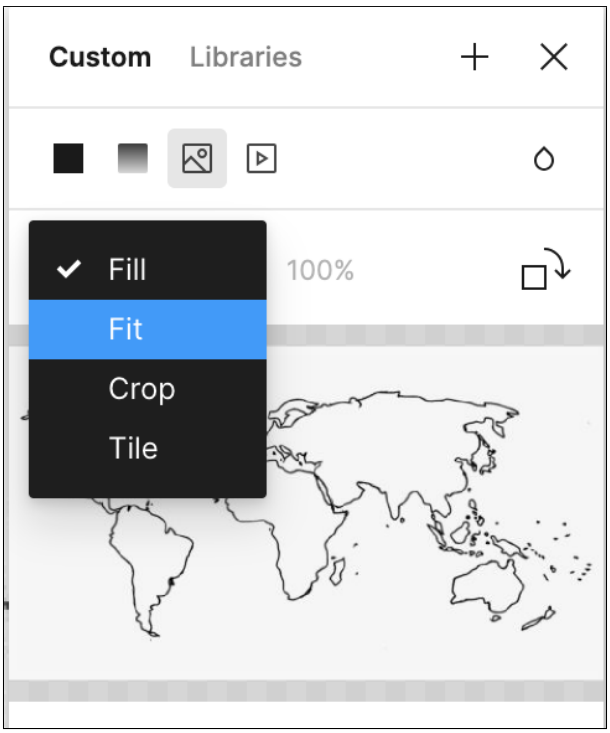
If we just paste or drag this into Figma, the image will belong to a frame. Note that dragging the image to the right hand side of a frame crops the image – images do not overlap over frames.



We will instead fill one of our current frames with this image. To do this select a frame. Then go to "Fill" in the right hand panel. Click the square next to "Image" and then choose the third icon in the pop-out menu.



Click the check board image and choose our world map photo. We can then select fit from the dropdown menu, so that our map image fits the canvas.

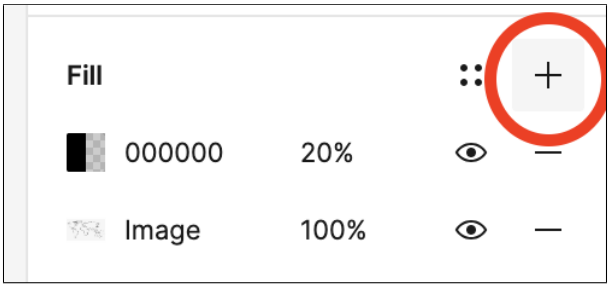


TASK: Do the above for all three desktop images. You should end up with a result as shown below.

1.3 TASK: Colour Images

It can be abit tricky to see each of these frames, so let's add a tinted colour to the different maps.

In the fill dialouge on the right you can press the plus button to add another layer.



Try to create the image below adding colours and transparency to each of the maps.

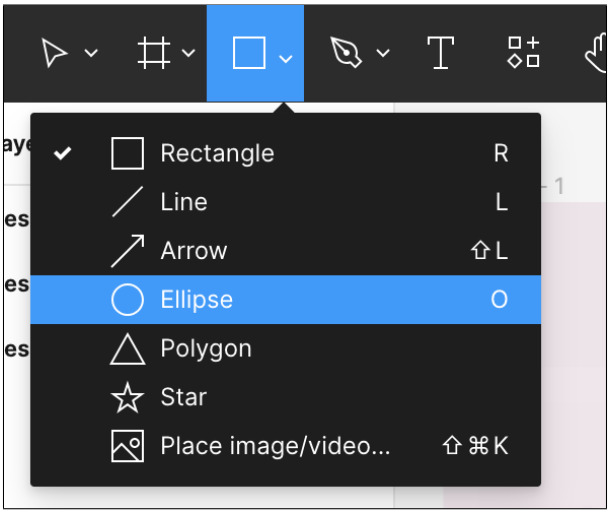
TIP: Sticking to a consistent colour palette, from website such as https://coolors.co/ , can help your app look more professional.

2 Drawing Shapes

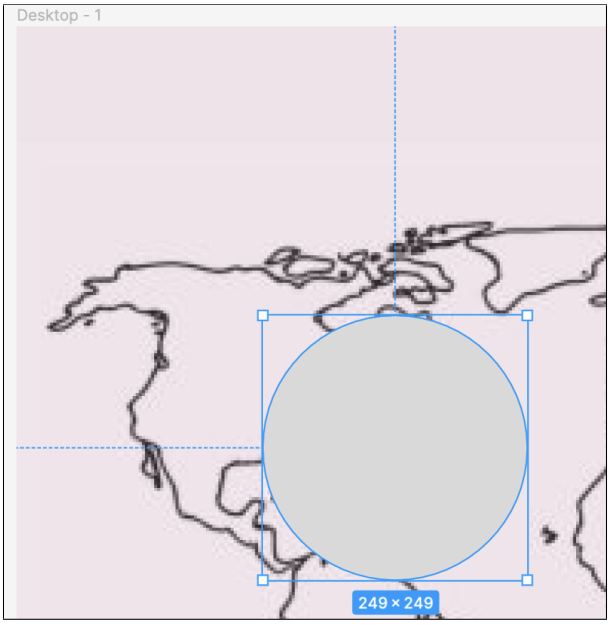
We have access to numerous drawing, line and text tools in Figma, which we can manipulate to create different shapes.

TIP: In using these tools we often enter different modes, which can makes interactions confusing when clicking. If panicked, pressing the esc key will bring us back into the default mode.

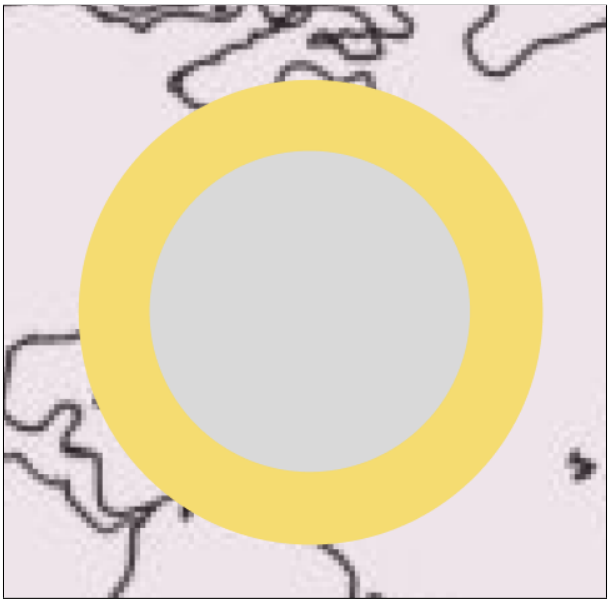
Let's zoom into desktop one and draw a circle shape by selecting the ellipse tool from the top menu.



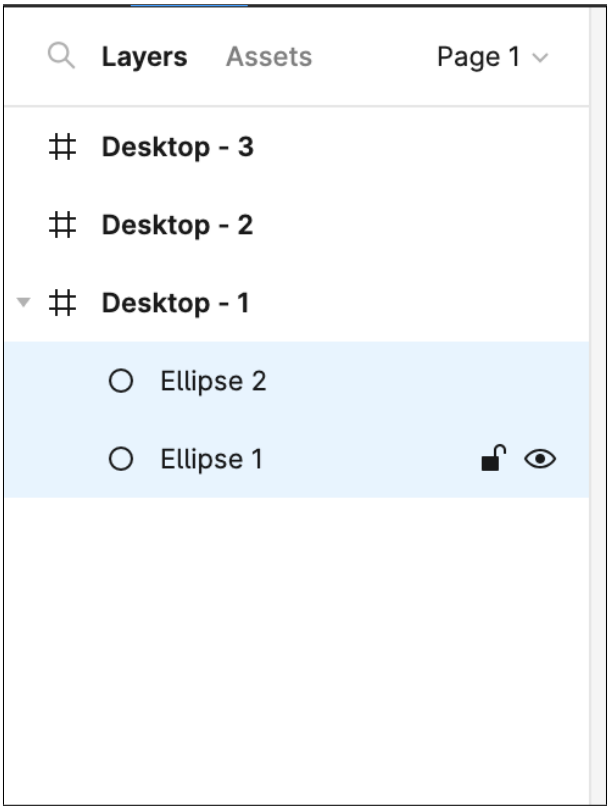
Clicking and dragging whilst holding down the shift key ensures that the ellipse is drawn in a circle shape.



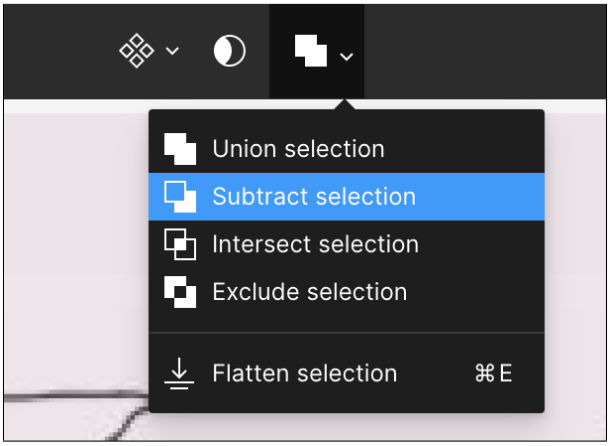
Let's change the colour to make the circle stand out more and then draw another circle ontop, as shown below.

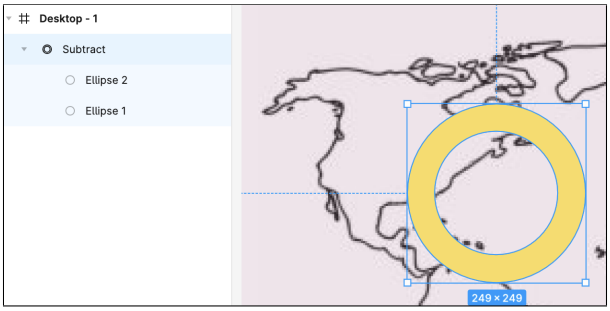


Now, select both circles by holding down shift and clicking on them. You can also do this by holding down shift and clicking the objects in the left hand panel.

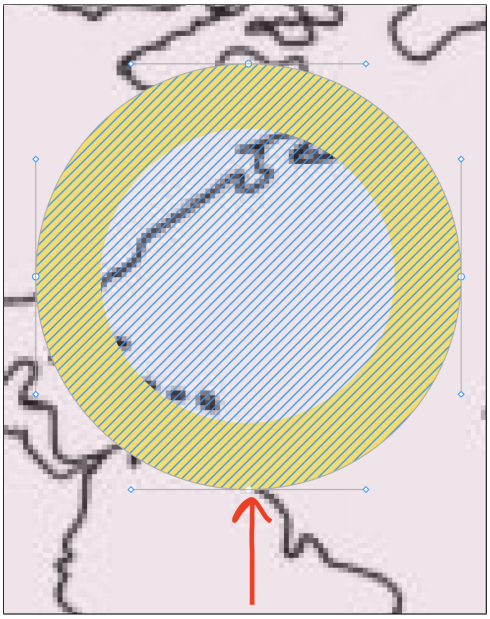


With both selected, we can go to **subtract selection**, by clicking the icon shown in the centre of the top panel. This will create a donut shape (shown overleaf). Note that the items are now also grouped in the left panel, under "subtract".

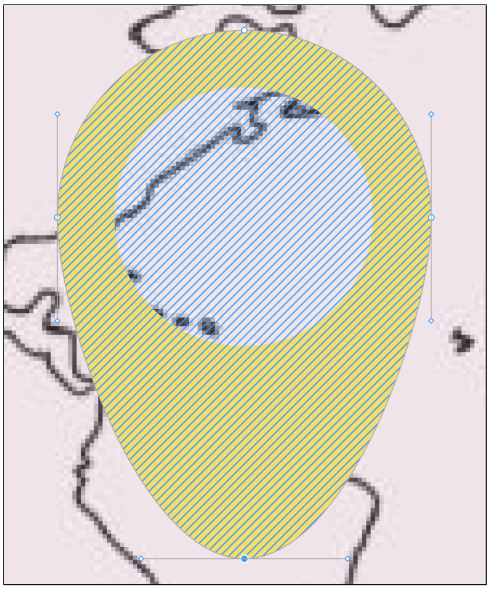




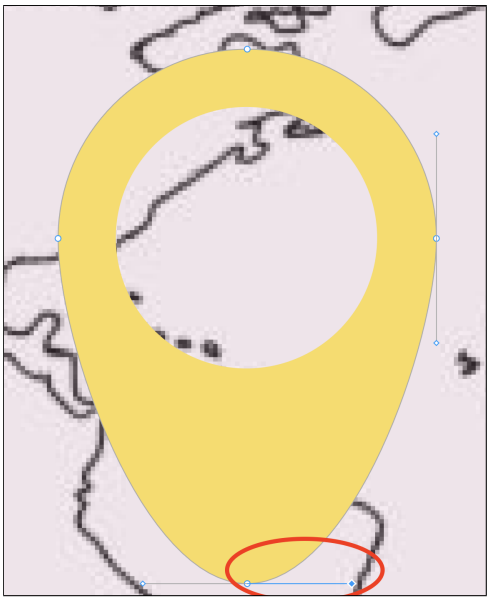
If you continually click into an object you can start to transform its properties. E.g. clicking on the donut shape rapidly 5 times, you can see its "grid" (e.g.the horizontal blue lines).



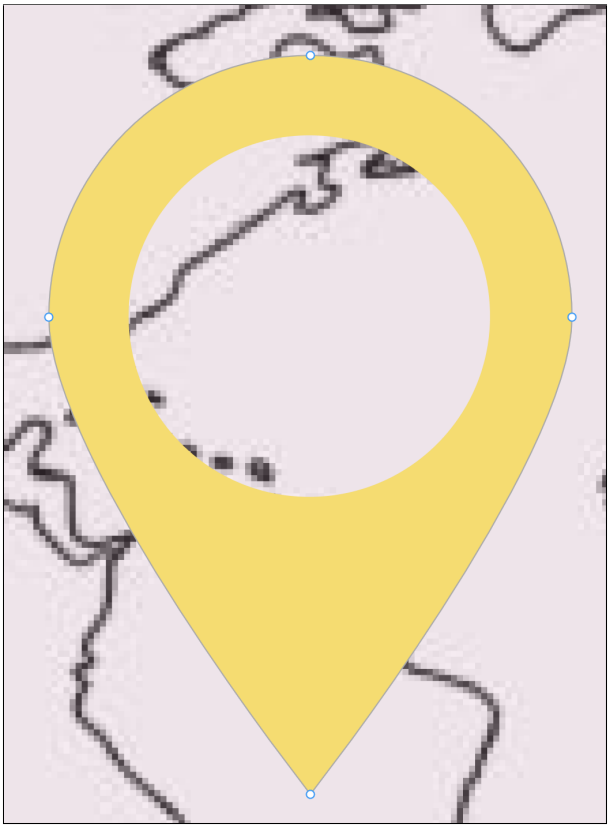
With the grid activated, click and drag the bottom of the shape (shown by the arrow in the figure above) to extend it's base. It should look something like the figure below.



We can then click on the anchoring lines circled in the figure below. Delete this. Then do the same to the blue line to the right of it.



We have now created an icon as shown below. Note that we have to press esc to go back to our usual moving mode, or we can press done in the top right top panel.



2.1 TASK: Map ICONS

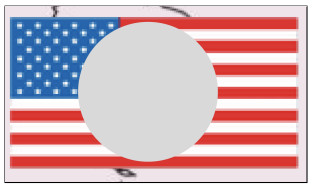
Create the icon as described above. Then, using copy paste, position these across the desktop applications to create the image below.

2.2 Flags

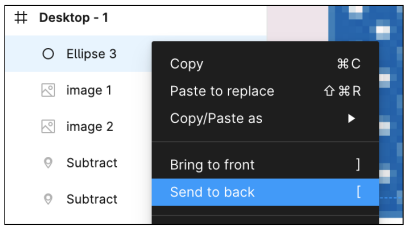
We will now create circular flags. These will represent buttons which we can press to move between our different frames.

Firstly, copy paste in the USA and China flags from `https://www.worldometers.info/geography/flags-of-the-world/`.

Taking the USA flag, we can drag a circle ontop of it.

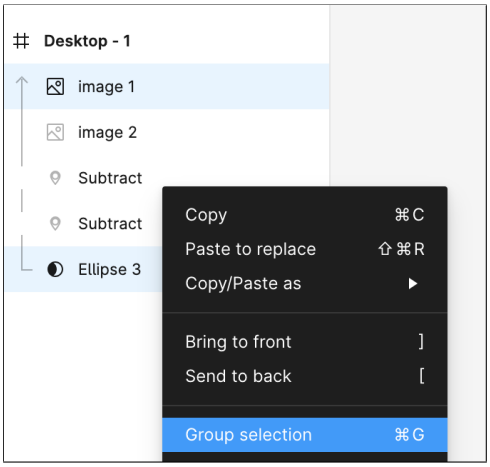


We are going to use this as a mask. This means that the ellipse needs to be behind the image. Thus, on the left panel, right clip on the ellipse and choose send to back.



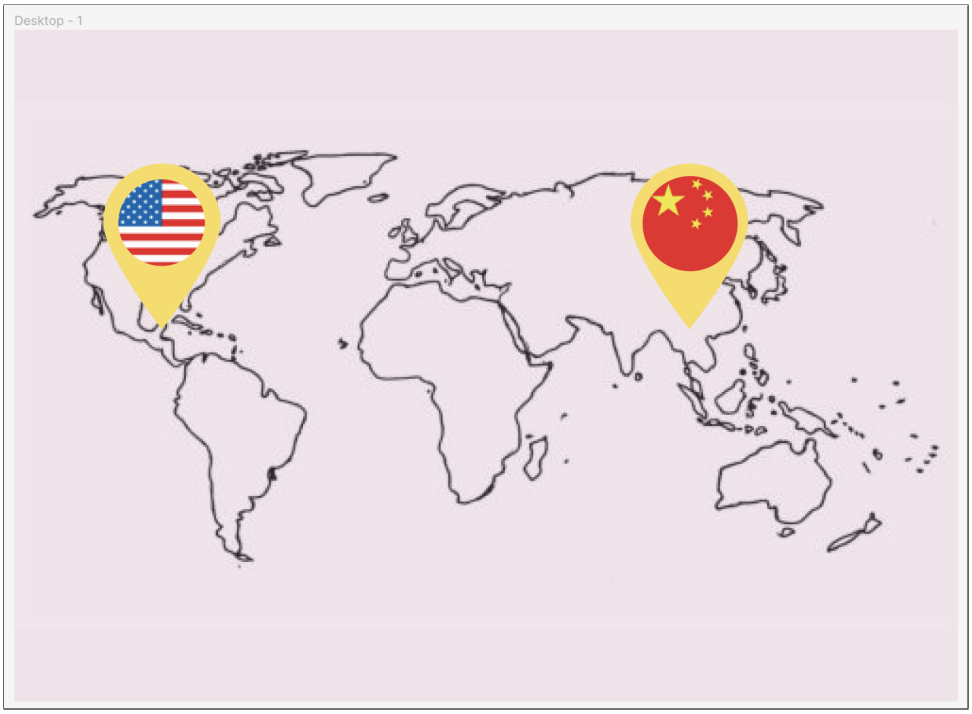
We can then select the **'use as mask'** button at the middle of the top toolbar.

To ensure that we can then move the two items together, let's use the grouping feature. Select the image and the ellipse on the left panel (you can hold down the ctrl key - or cmd key on mac - to select two items not next to each other), right click, and select 'Group Selection'.



2.2.1 TASK: Flag buttons

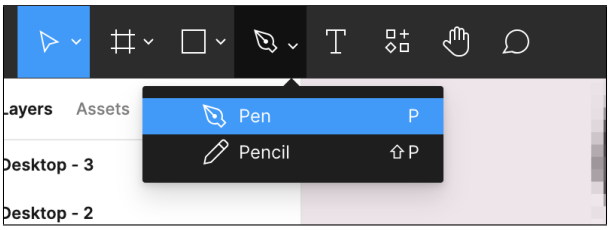
Recreate the image below:



2.3 Taskbar

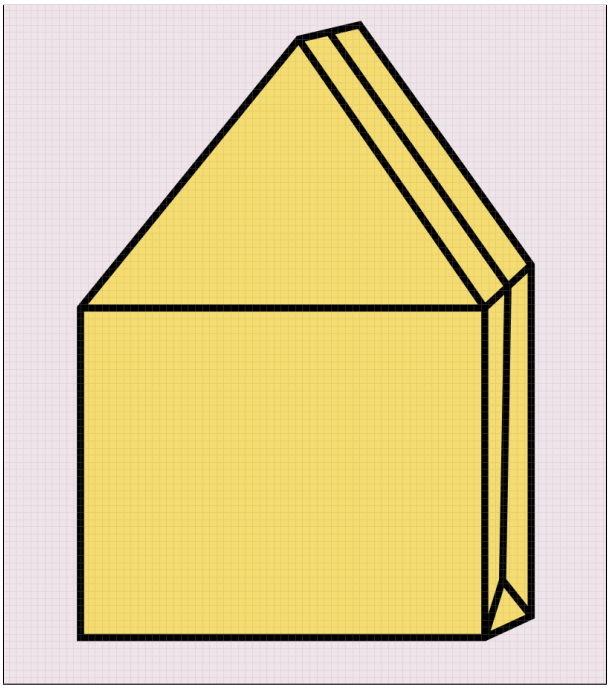
2.3.1 TASK: Home Icon

Select the pen tool from the top left of Figma.



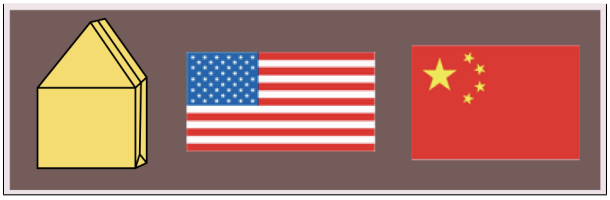
The pen tool draws a vector network, meaning you can click from point to point. It takes some practice, but means that you can draw complex shapes. You can even use the pen tool to add lines to existing shapes.

Try to draw the image below, which we will use as our home button icon.



2.3.2 TASK: Create a toolbar

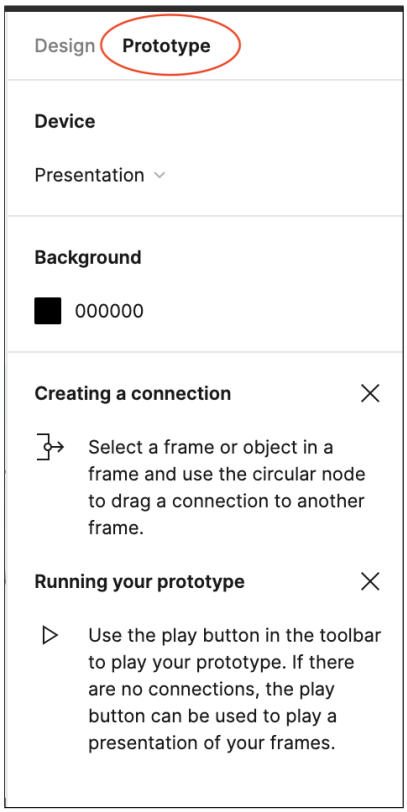
Using the skills we've learn so far, create the toolbar shown below. Copy this across each desktop frame.



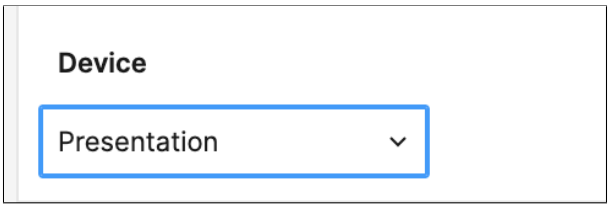
3 Prototyping

Figma allows us to move between panels to test out user flows. Indeed, we can link frames to other frames and objects.

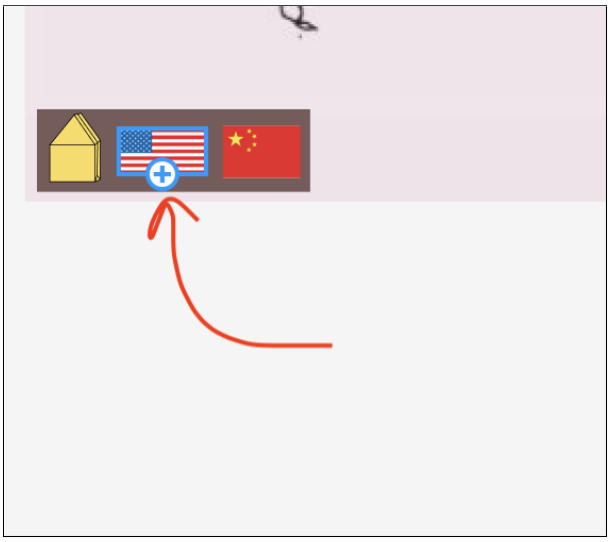
To start prototyping, go to the prototype tab on the right hand side of the screen.



For device, we will choose presentation, as we have used the desktop size. You can choose numerous different devices.

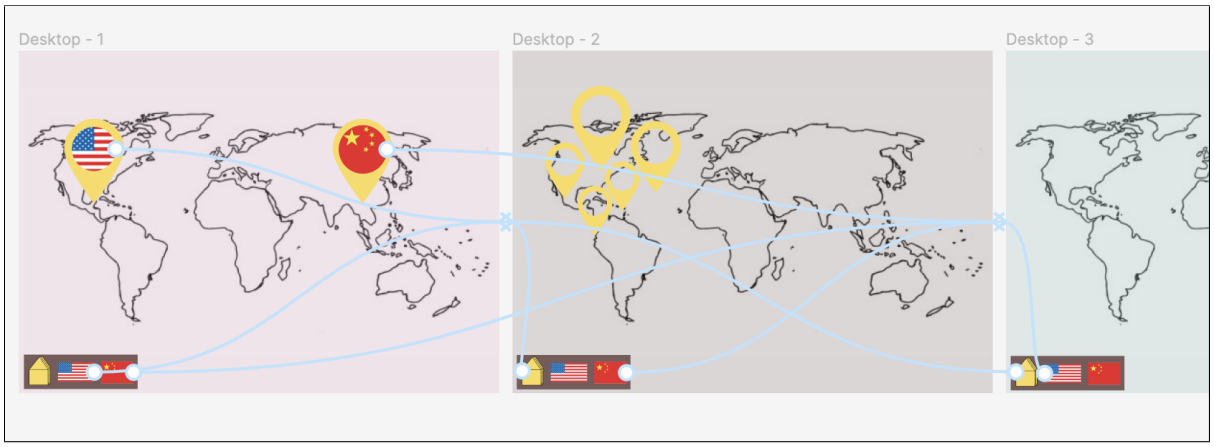


To make connections, hover over a component and click and drag from the plus button which emerges. So first off, we can connect the USA flag to our USA desktop screen.

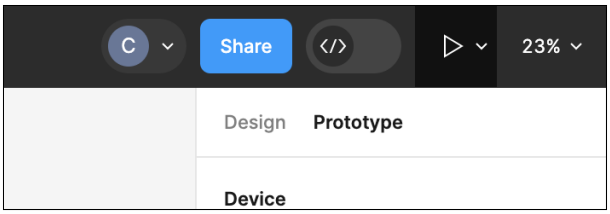


AN ASIDE: On the right hand side for that object now we can see options for the interactions. So, instead of on click you could change to on drag, or on key press. We will use on click for now and hook up out other buttons, but feel free to explore these options beyond the lab.

The full network is shown below.



Pressing play in the top right then allows you to test your prototype application.



3.1 Task: make the connections as described above.

4 Final App

If you have completed the tasks above you have experienced the basics for Figma, and gained some experience with the different drawing tools available. There is much more to Figma, beyond the scope of the Lab. You might wish to continue working on this project, here are some suggestions:

- Show the market share in the bubbles for the different countries.
- Add pop up information on mouse over.
- Improve the toolbar to adhere closer to GUI design principles.
- Add titles and explainers on how to interact with the application.
- Try out different colour palletes.
- Update to use high resolution assets.

5 Summary

This tutorial introduced key concepts for creating low or high-fidelity prototypes using Figma. We covered fundamental skills such as using drawing tools, masking, subtracting, and connecting frames to build interactive prototypes. We had created frames, added images, drawn shapes, and wired together our frames to create an interactive prototypes. The more you experiment with Figma better you will be at designing graphical user interfaces.

6 Prep for next week

Next week we will be looking at React. It would be helpful if you could ensure that the following tools are installed before the tutorial:

- Visual Studio Code
- Node (`https://nodejs.org/en`)
- Google Chrome (recommended)
- OPTIONAL: React Dev Tools (`https://chromewebstore.google.com/detail/react-developer-tools/fmkadmapgofadopljbjfkapdkoienihi`)

7 Reading

Aspiring user experience designers might wish to learn more about **micro interactions**, **smart animations**, **styles** and **components** in Figma.

Within Figma there are two example project files worth inspecting (you can find these in your account):

- **Prototyping in Figma**
- **Wireframing in Figma**

The **community** tab in Figma is also full of projects, many containing UX assets. Looking at how these projects are laid out and operate is a great way to think about how you could apply the same ideas to your work.

The following book is also recommended:

- Designing and Prototyping Interfaces with Figma by Fabio Staiano