

The Future of Android is **Accessible**

Aldo Socarras

Follow along!



bit.ly/occ23-accessible-android

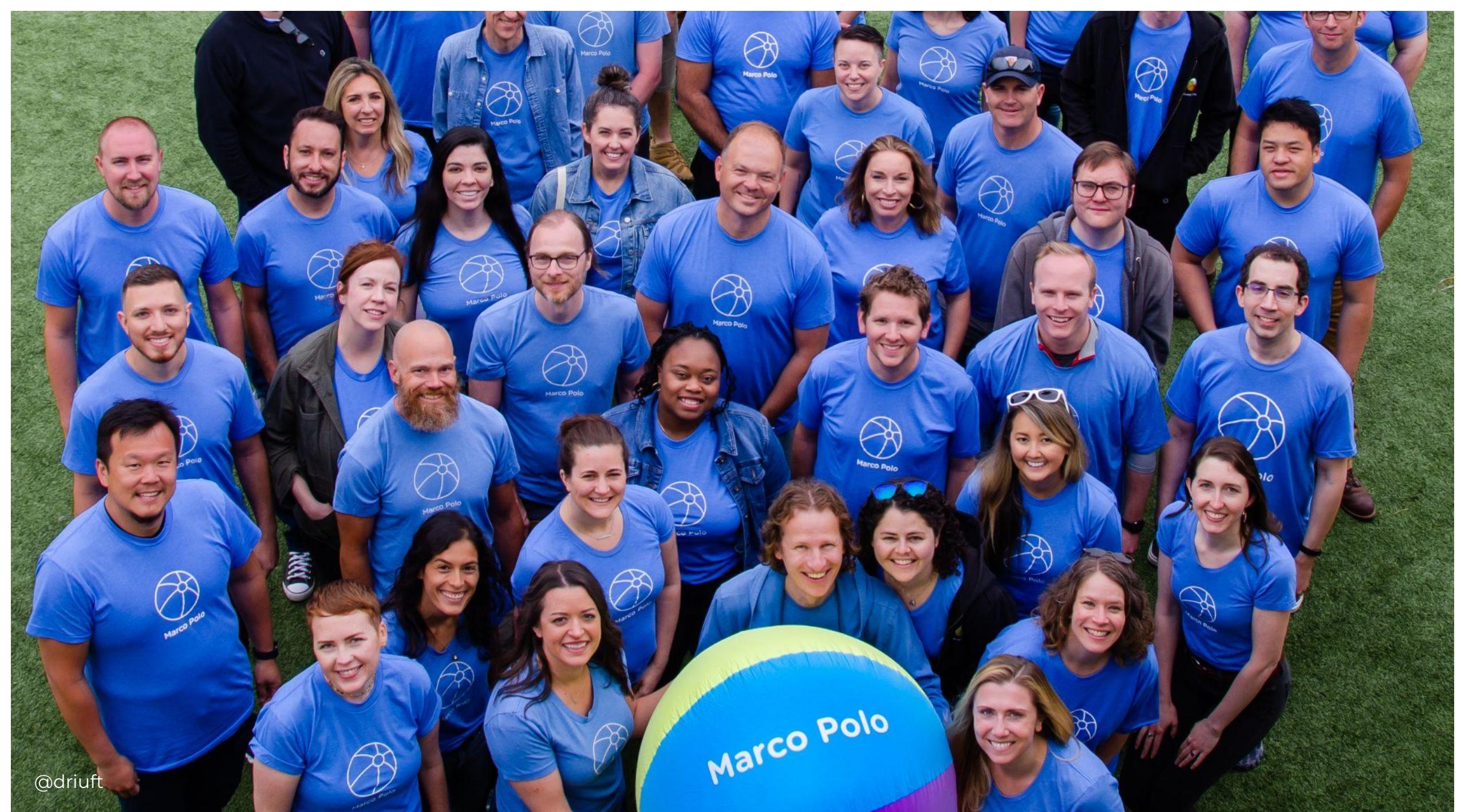


Aldo Socarras

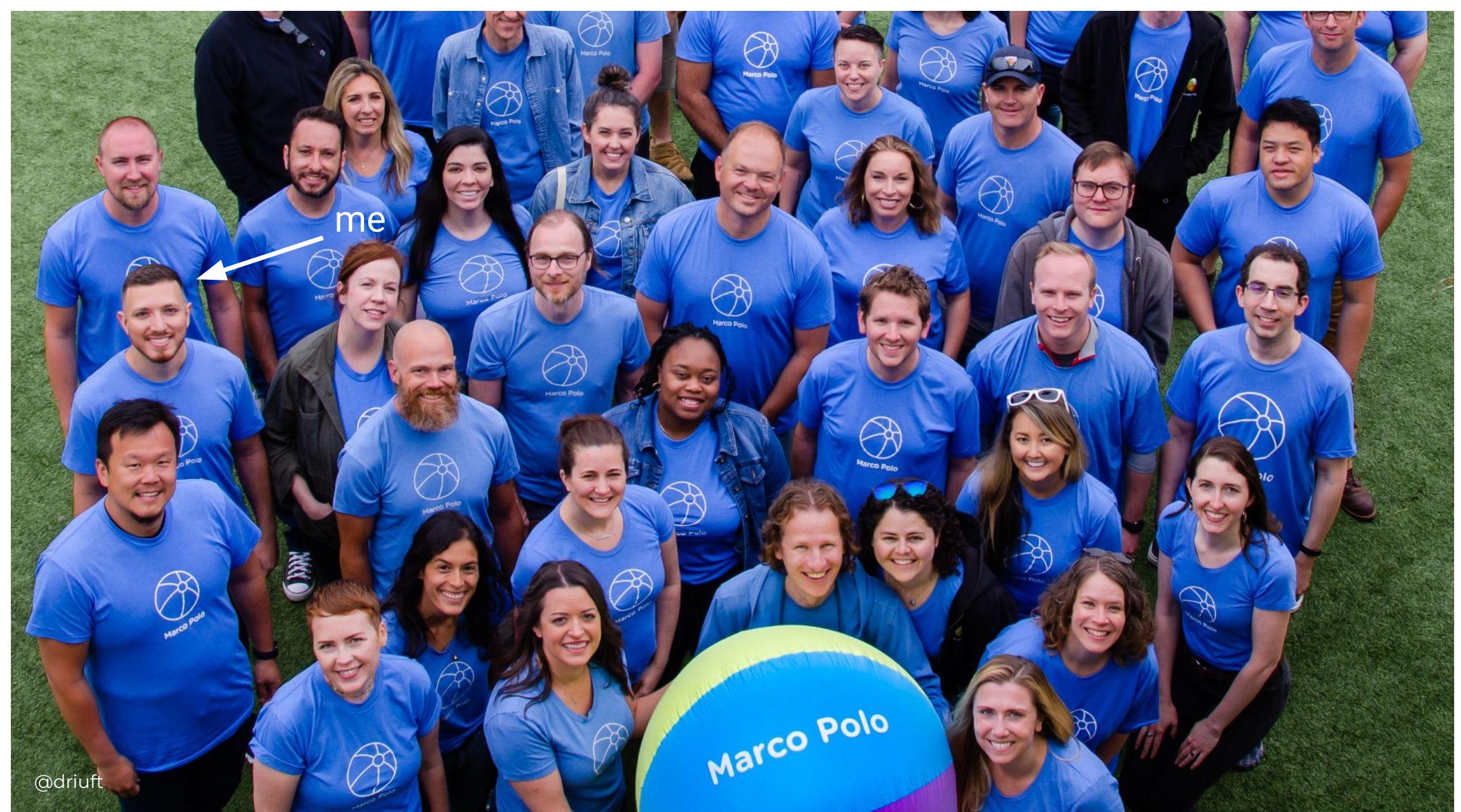
Android Developer based in Miami 🌴

@driuft





@driuft



@driuft

CODEPATH*ORG

HEAR FROM CODEPATH ALUMS



ALDO SOCARRAS

Android Engineer, Marco Polo
Florida International University

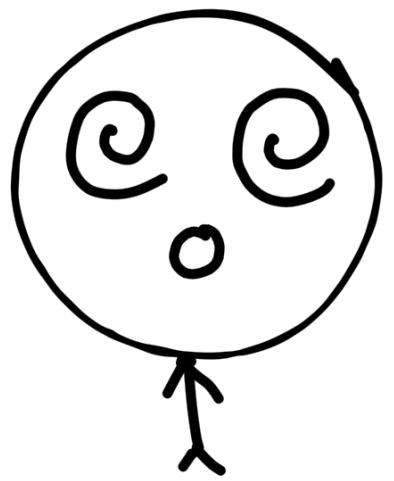
"My goal has always been to make a positive impact in the world through technology, and CodePath has given me the support and platform to do just that. Within a year, I have combined my passion for teaching and my love for mobile development while working alongside some of the most outstanding engineers in the industry. I completed the Android Development course this past Spring. Since then, I have built an award-winning mobile application, reached Top 10 in one of the country's largest hackathons, and worked at Meta (Facebook) as an Android Intern Lead by helping to instruct and facilitate the diverse Facebook University Program for incoming interns. In addition, I am currently working as an Android Tutor for Google's pilot program, which aims to increase Black representation in tech. I can say, without a doubt, that I have become a better engineer thanks to CodePath."

An aerial photograph of the Miami Beach coastline. The image shows a long stretch of sandy beach meeting the turquoise ocean on the left. A dense cluster of high-rise residential and hotel buildings lines the beachfront, extending towards the horizon. The sky is clear and blue.

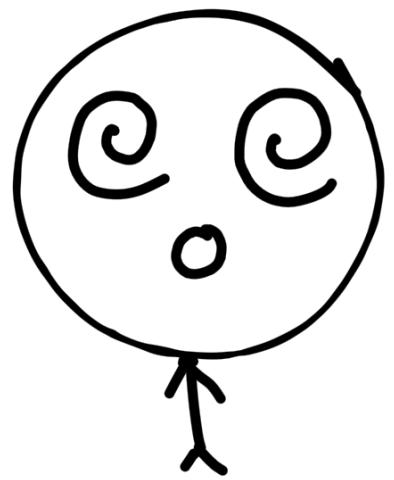
MIAMI



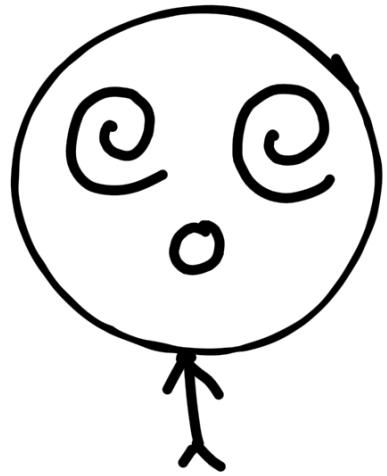
CUBA

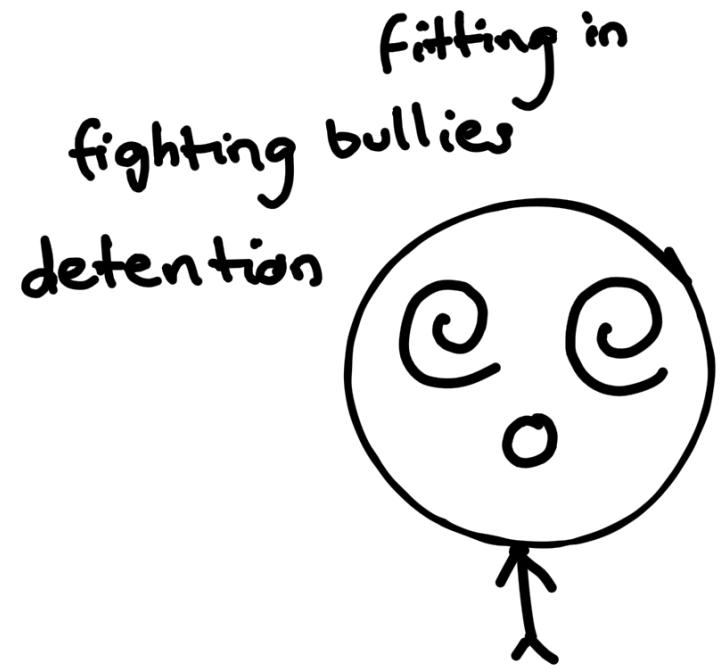


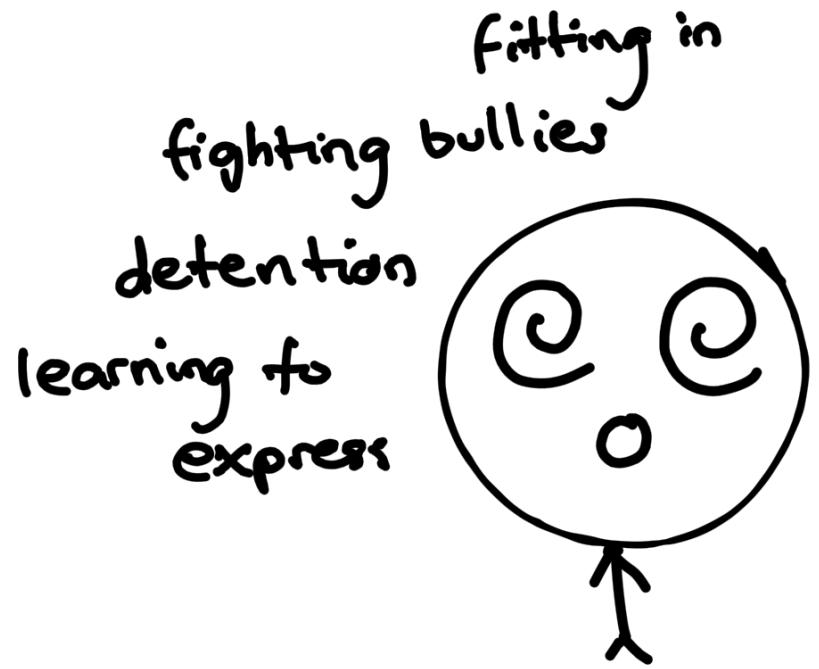
fitting in

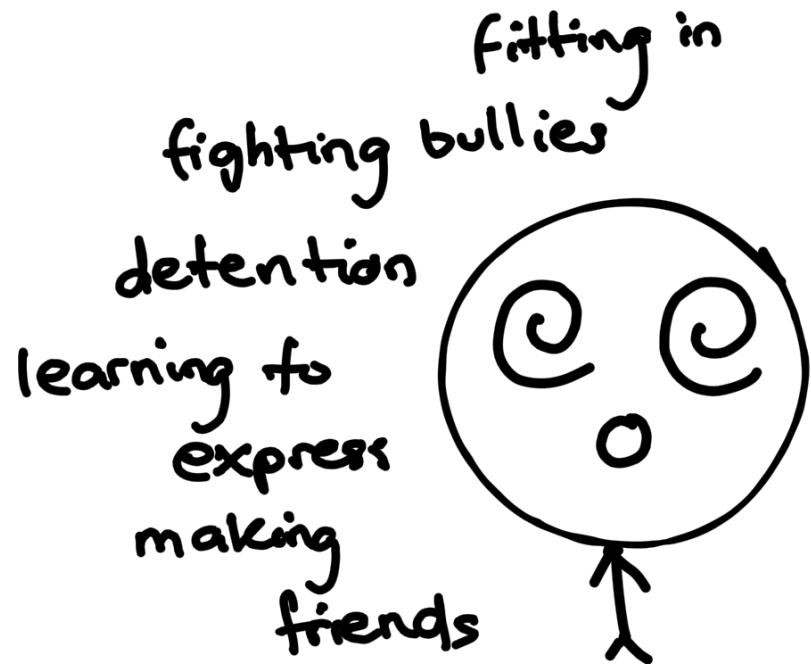


fitting in
fighting bullies



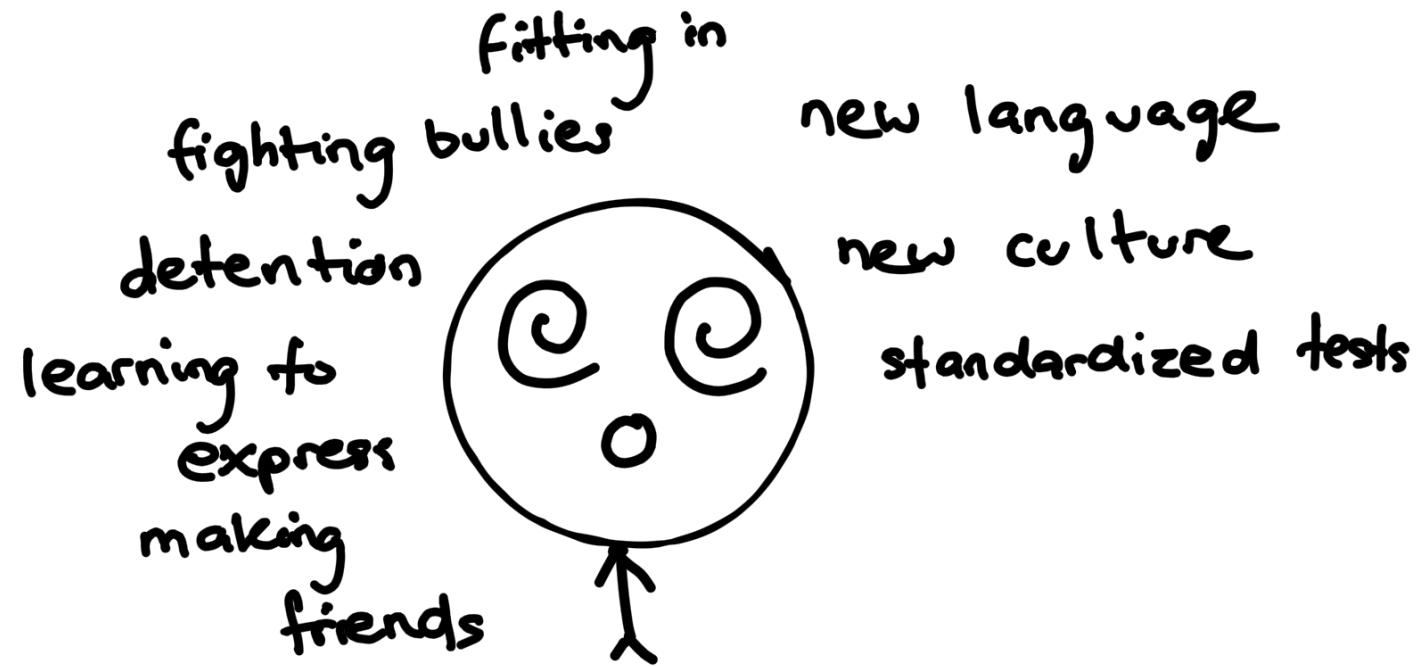


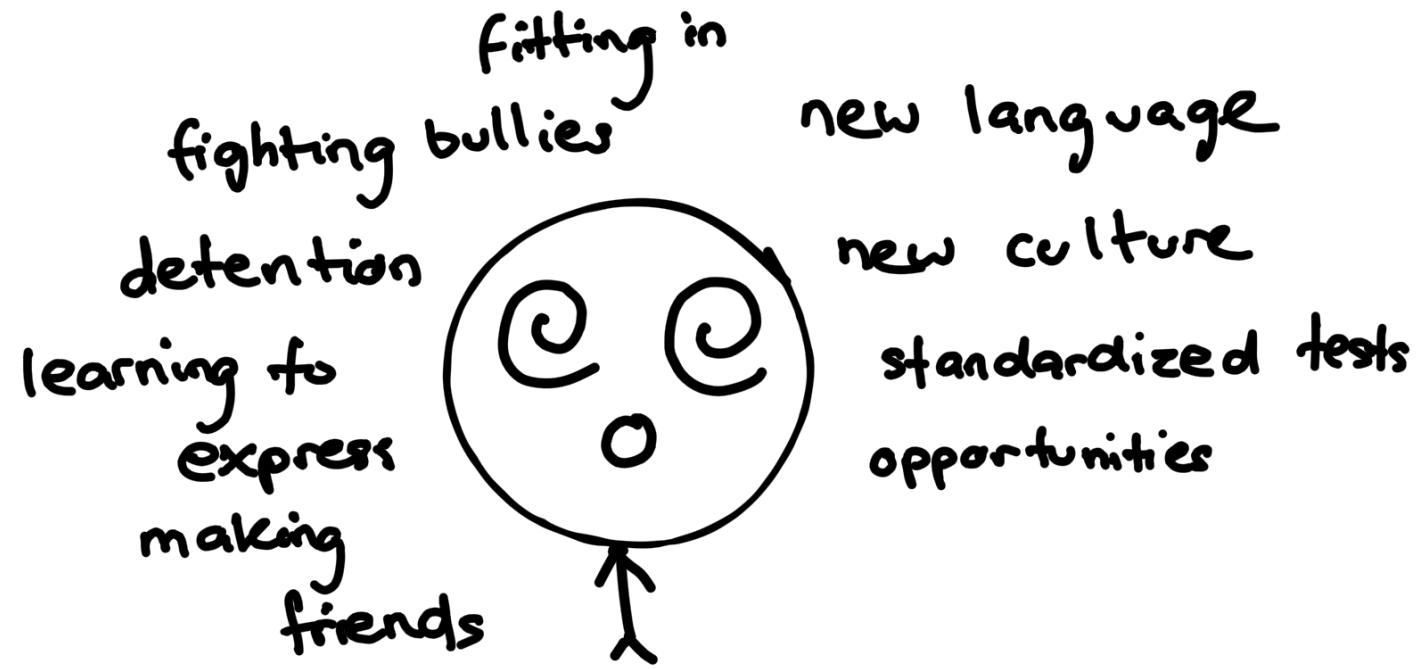


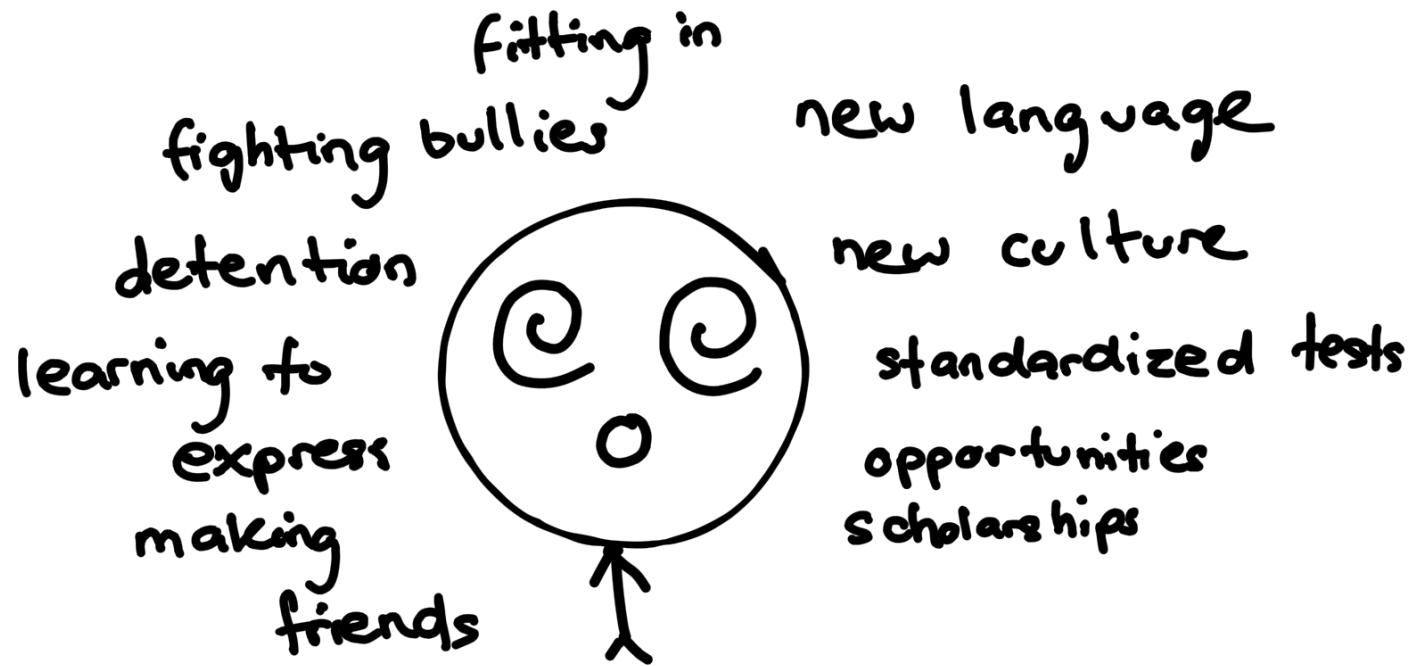


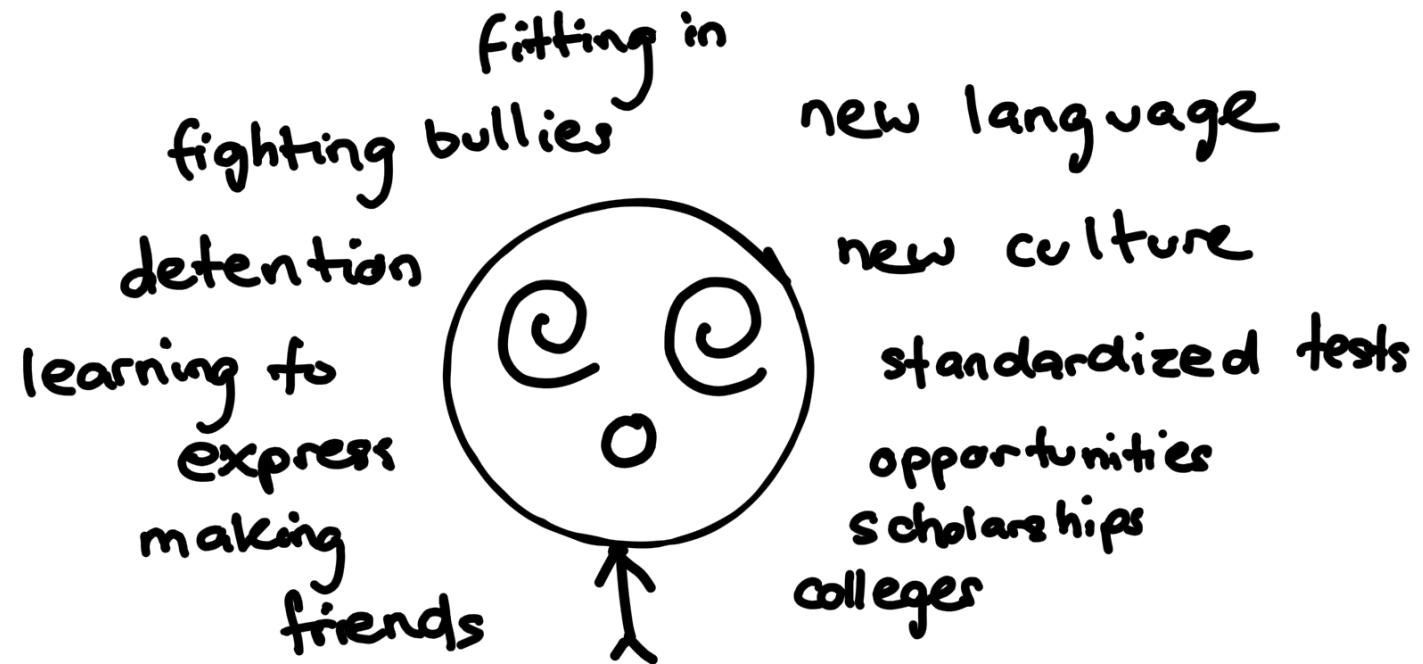


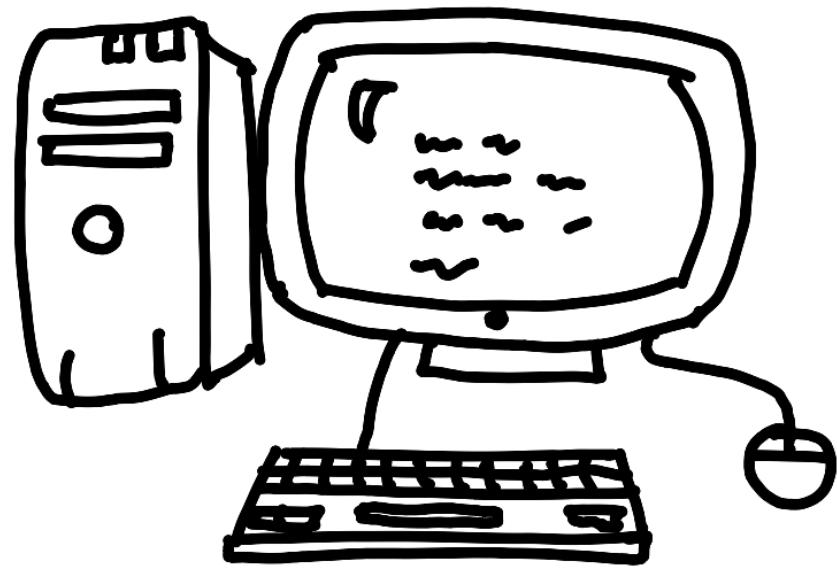




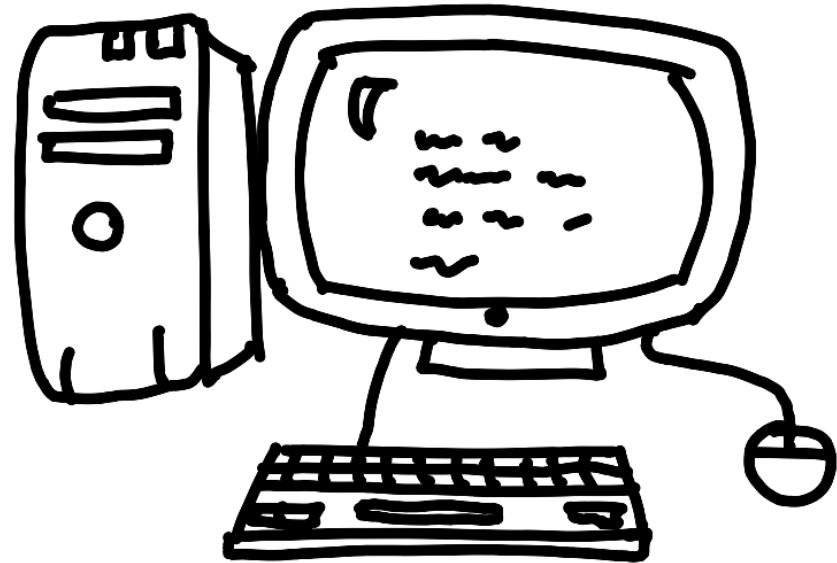


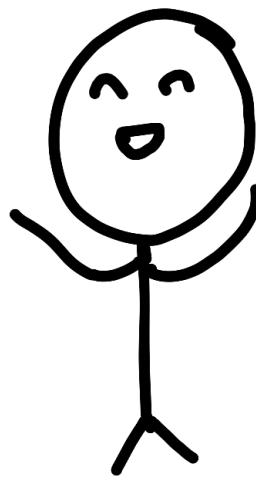






shared family computer





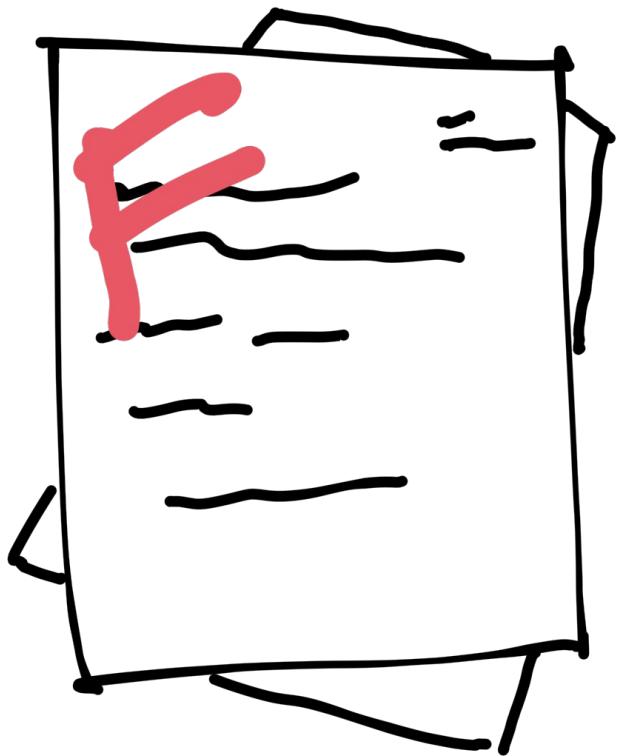
@driuft

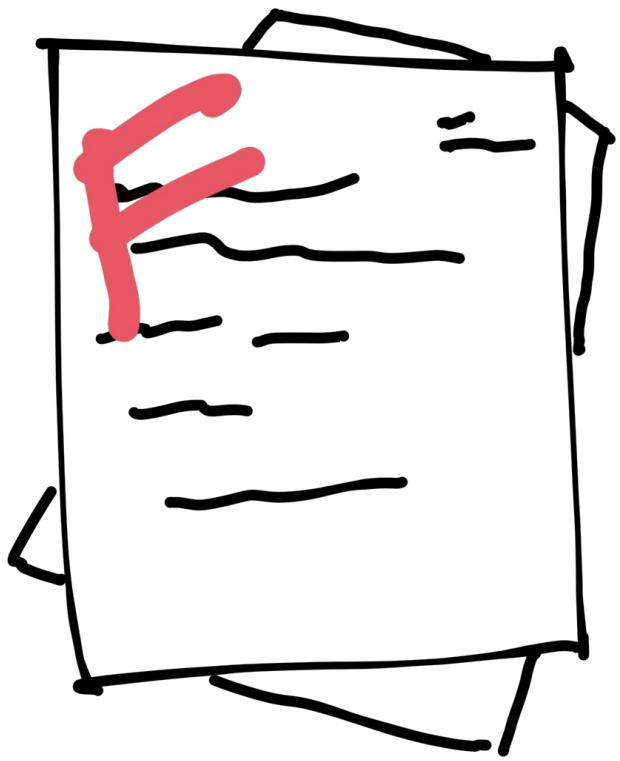




March 15







retail



retail



\$ retail



\$ retail





\$ retail

€ 50,-



\$ retail



,50%
-50%





\$ retail



,50%^o



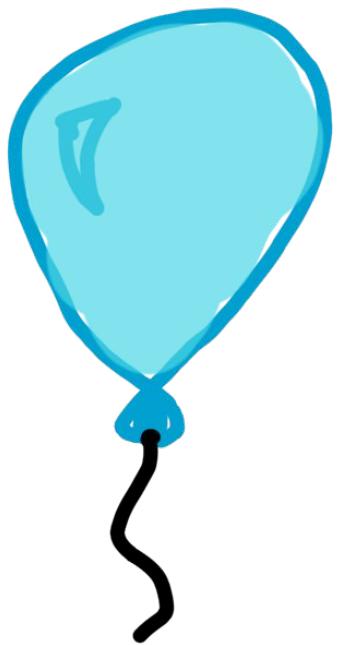


@driuft

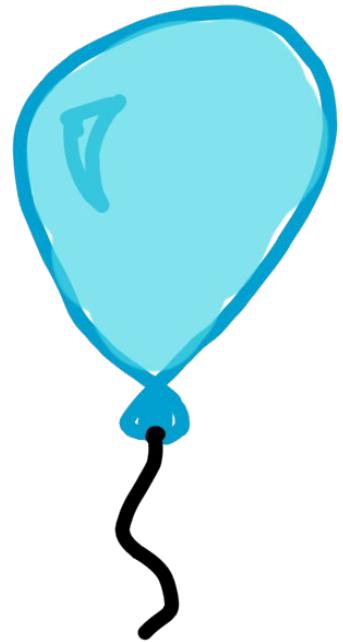
help desk

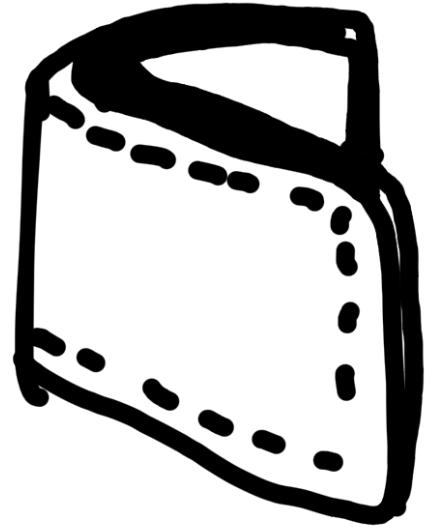


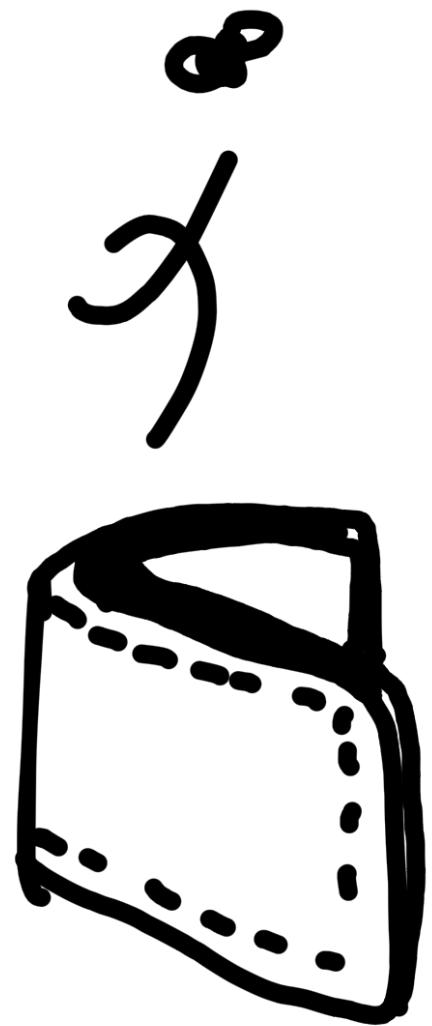
support

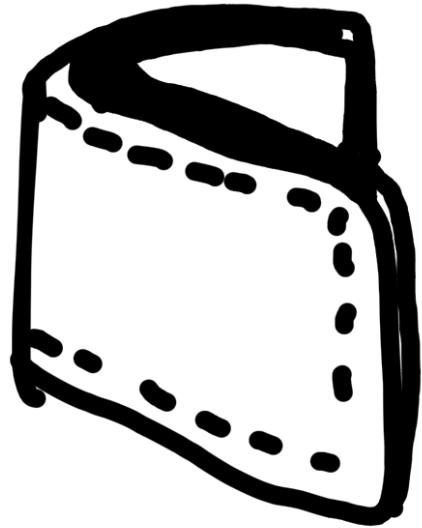


It's a boy!





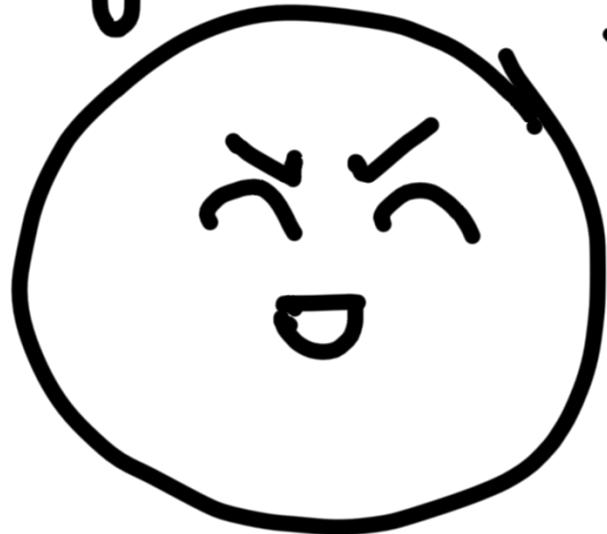




Congratulations!
we would like to
extend an



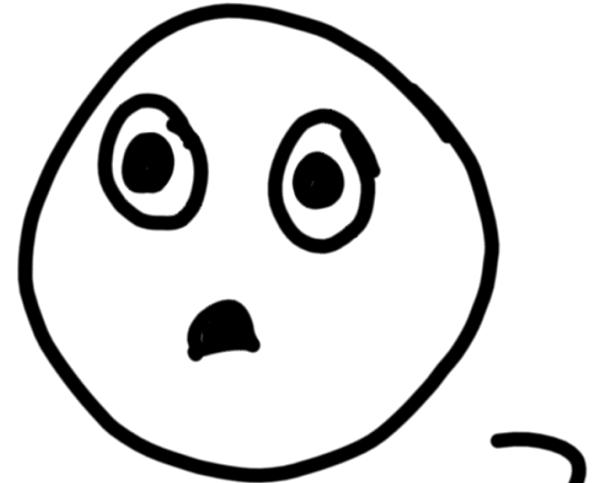
systems
engineering



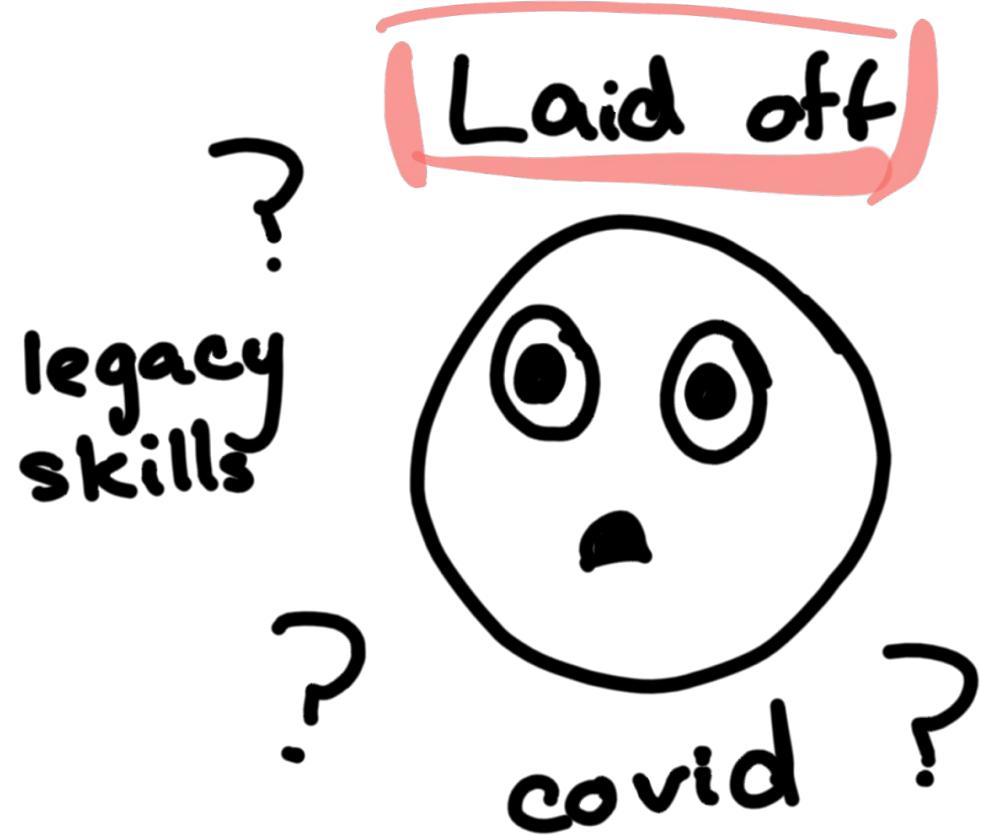
Laid off

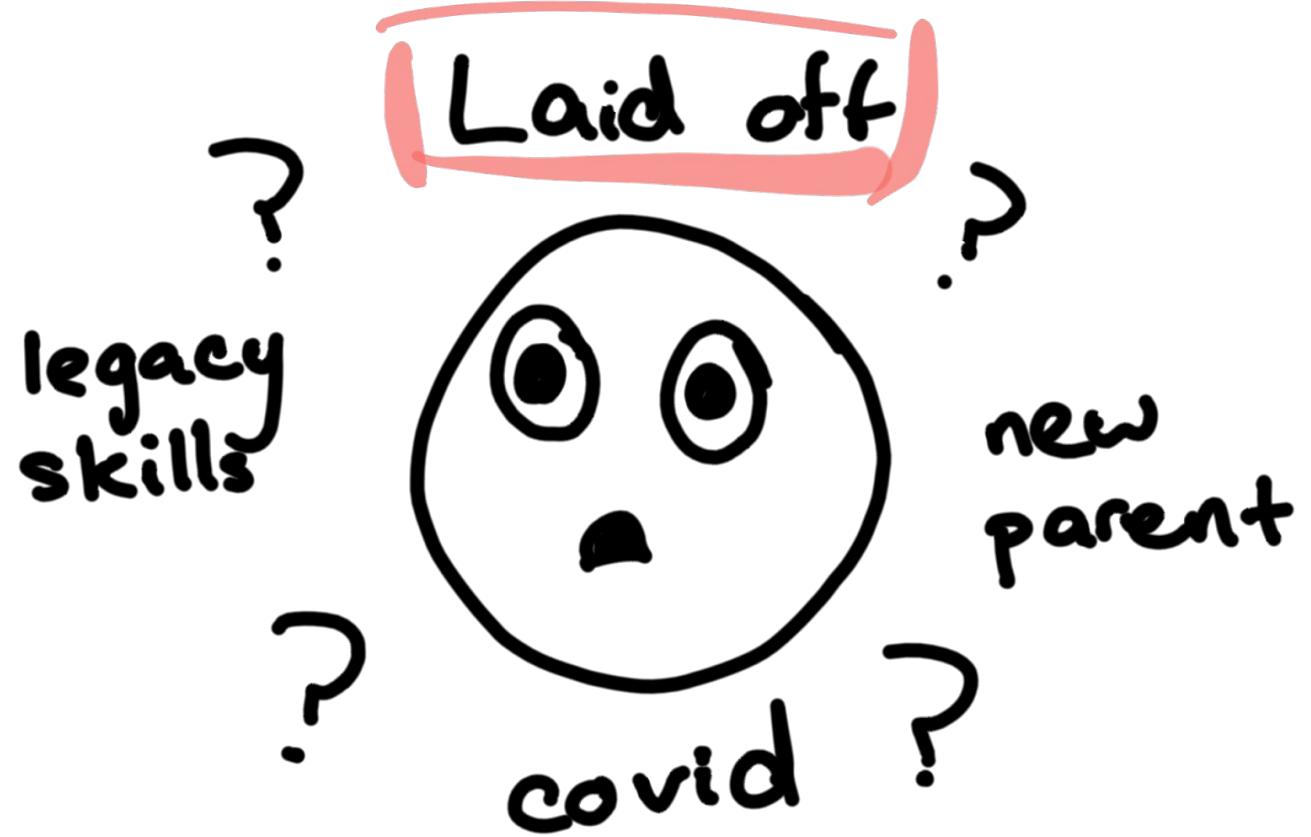


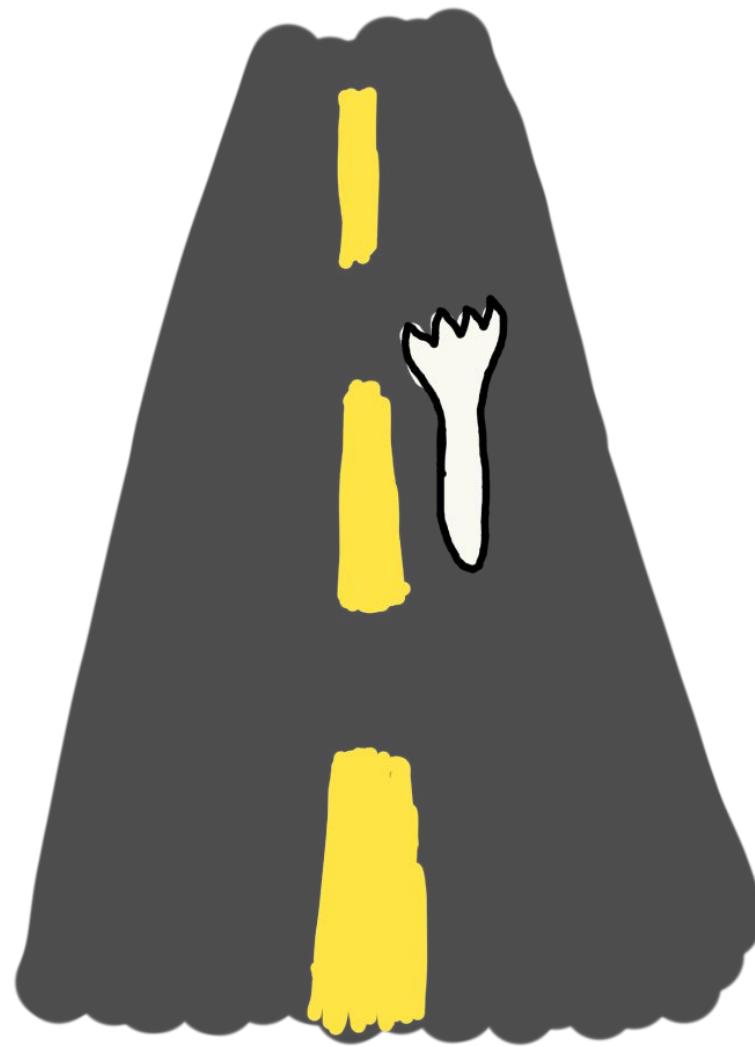
Laid off

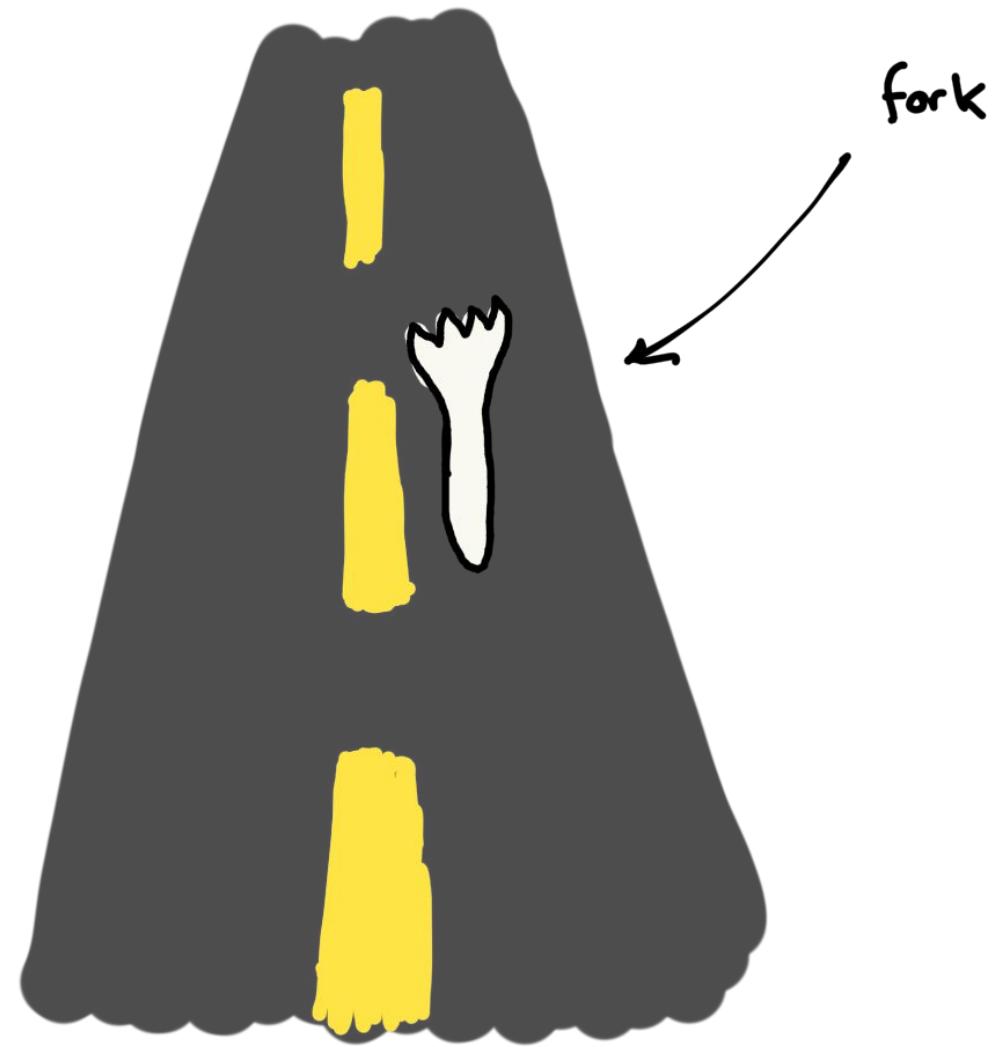


covid ?







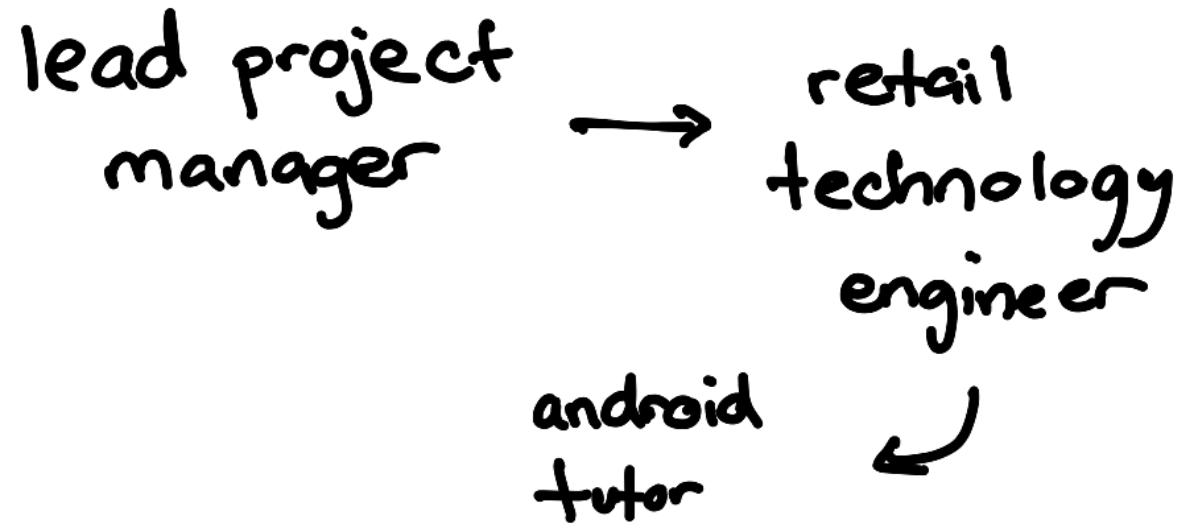


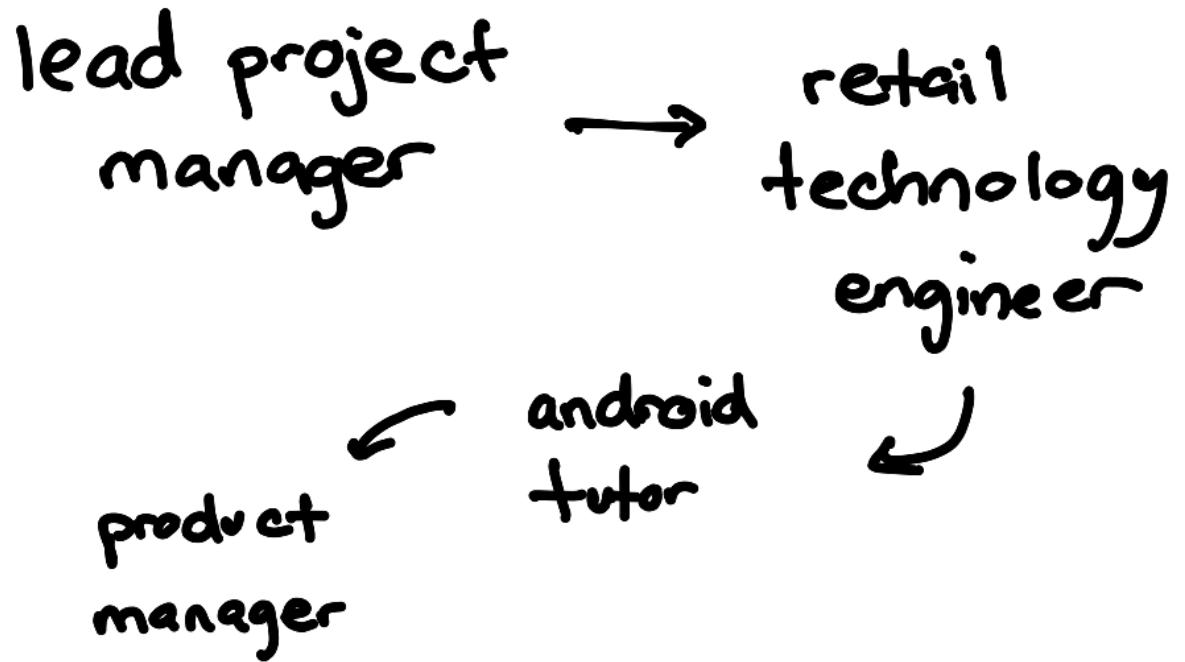


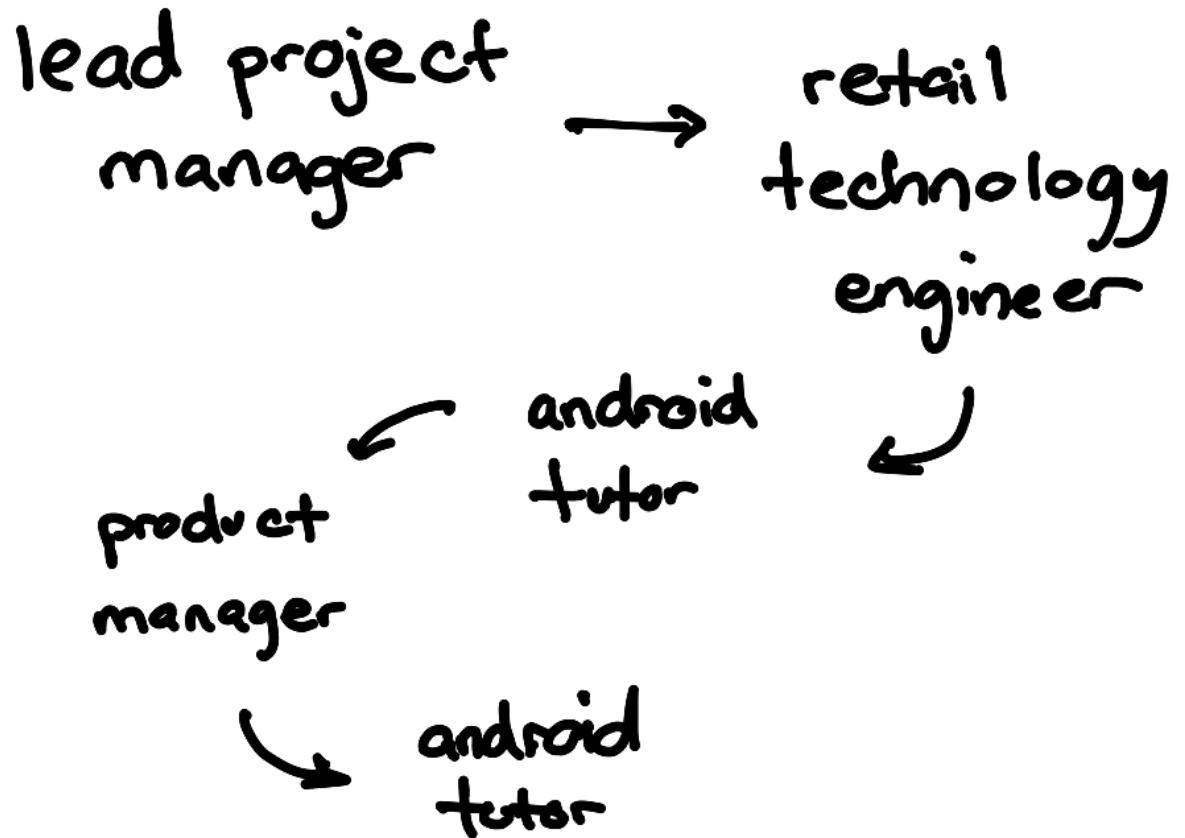
fork
on the
road

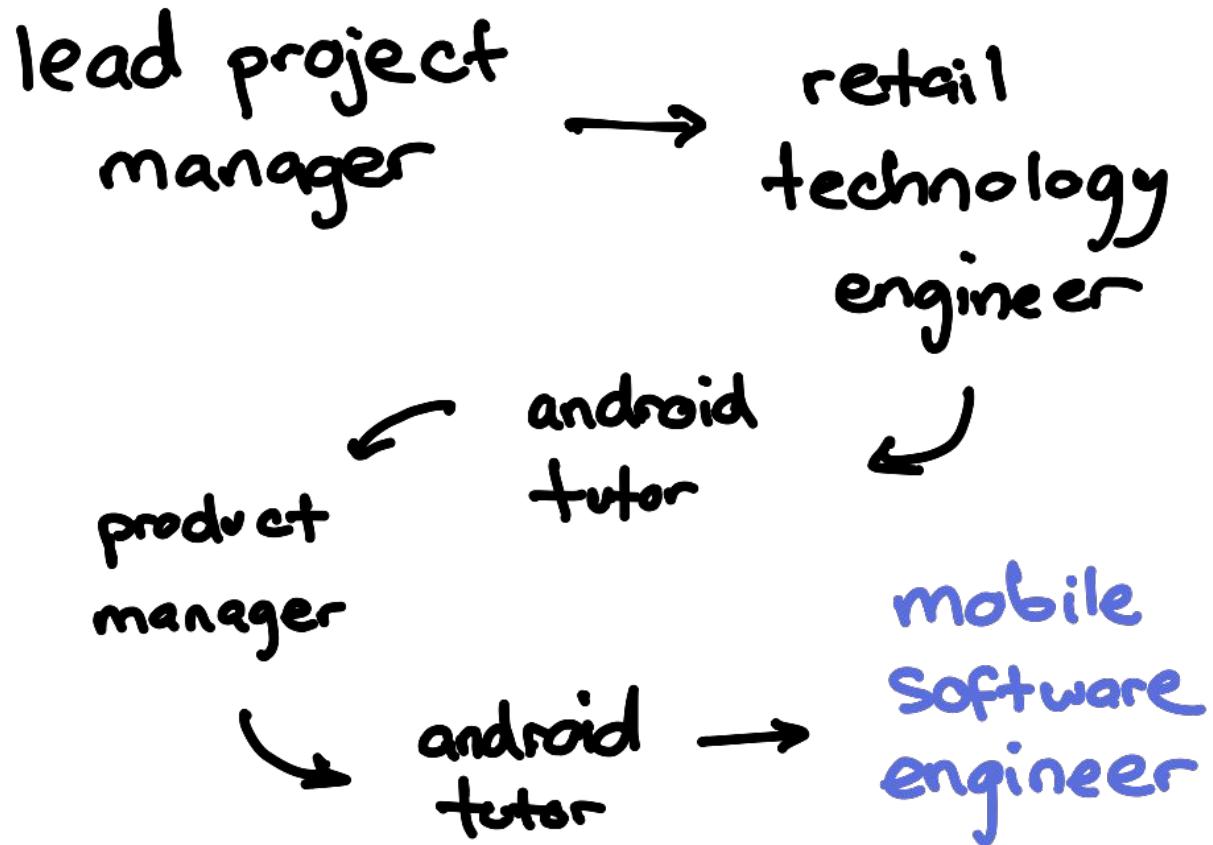
lead project
manager

lead project
manager → retail
technology
engineer











Kai at the park



With dada



Kai at the park



With dada



Kai at the park



Kai hanging on!



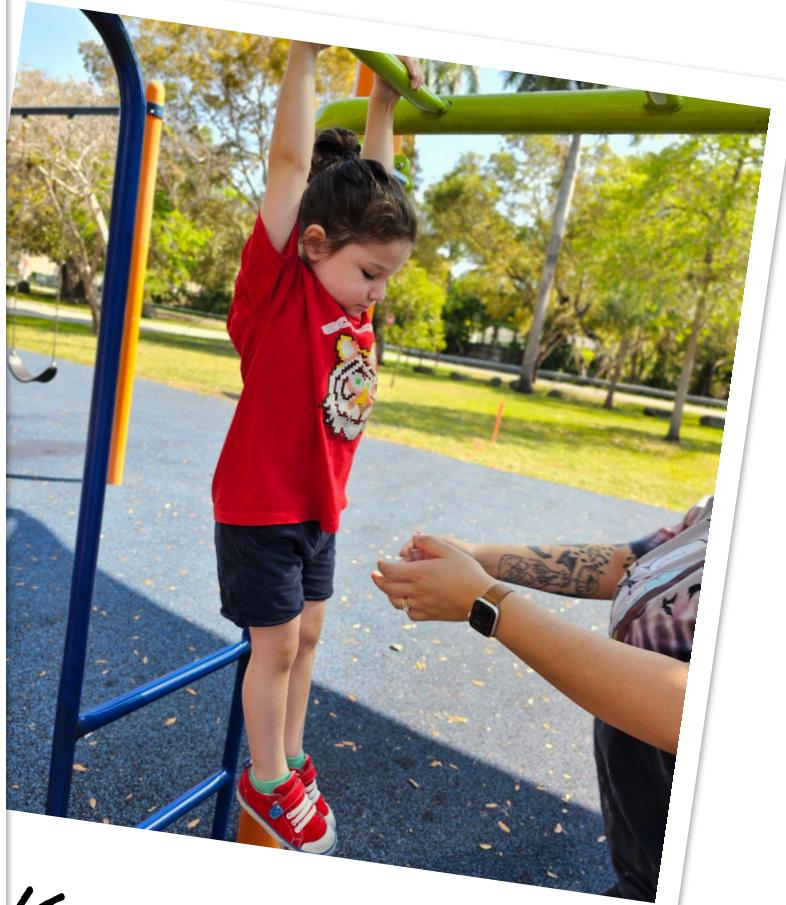
With



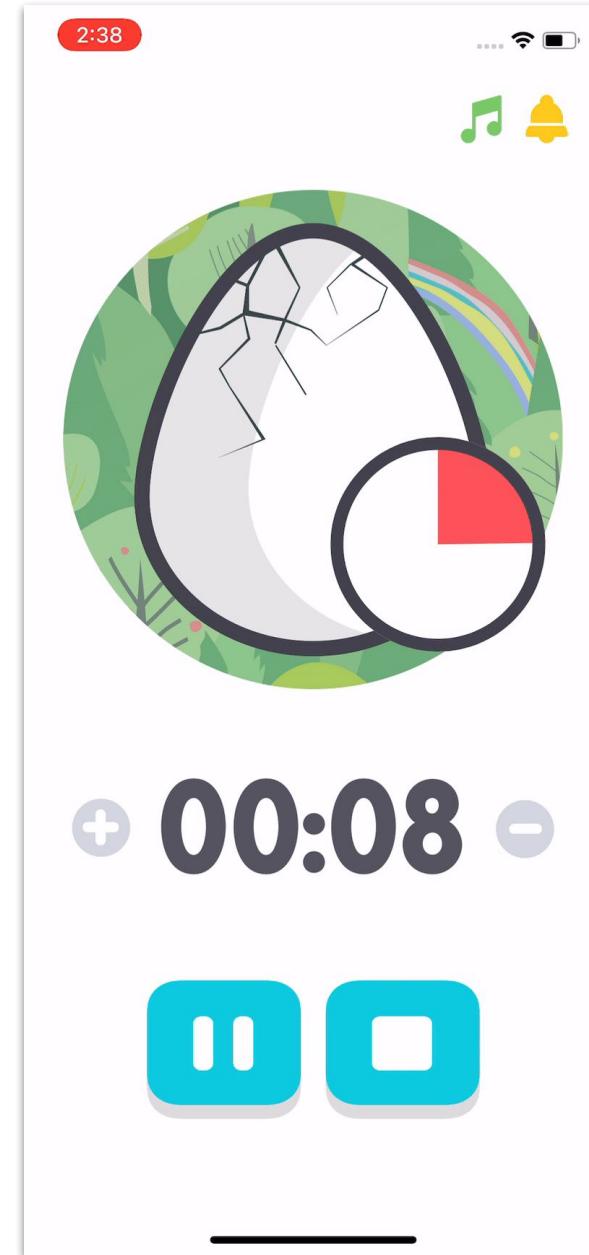
Favorite slide

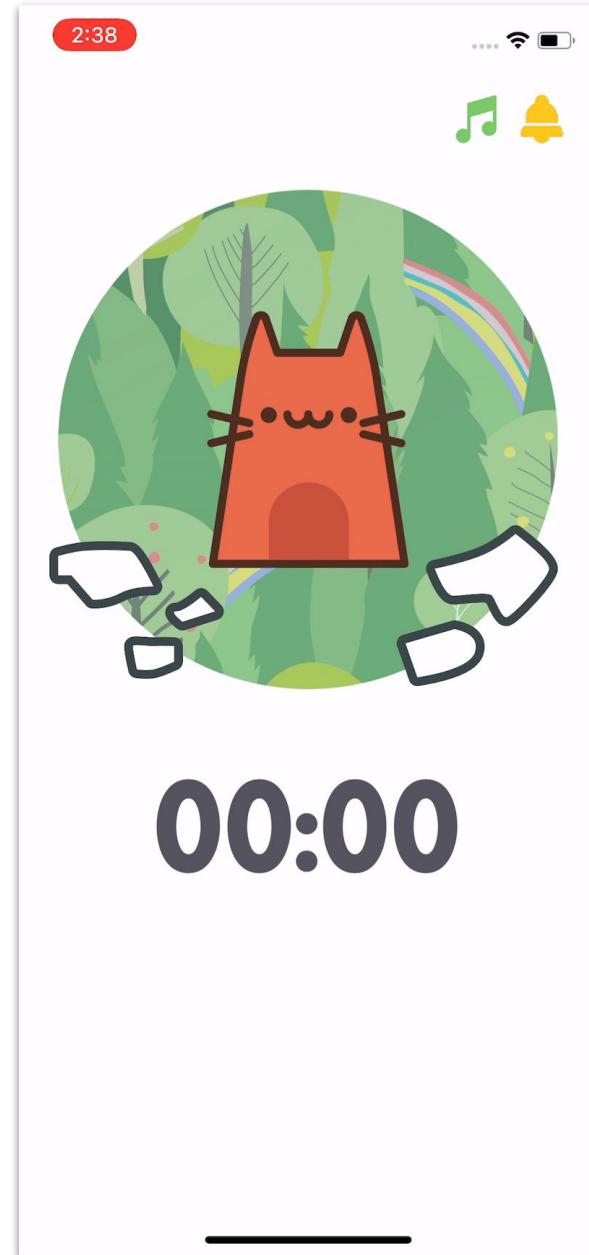


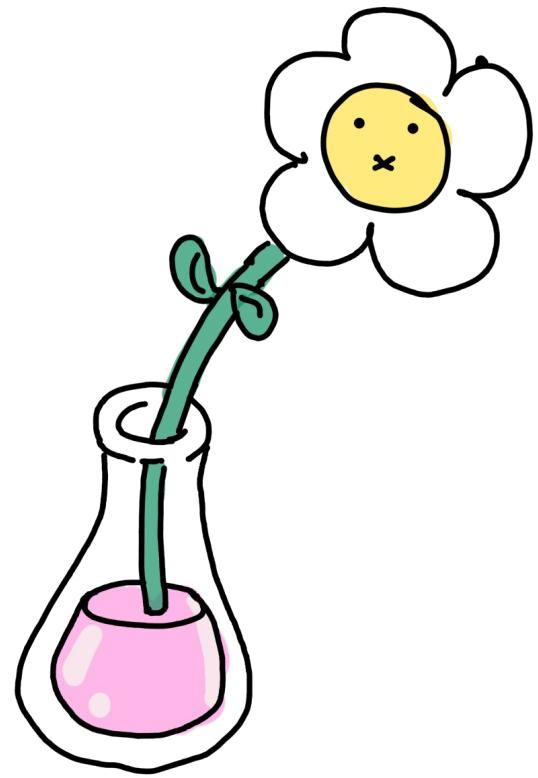
Kai at the park

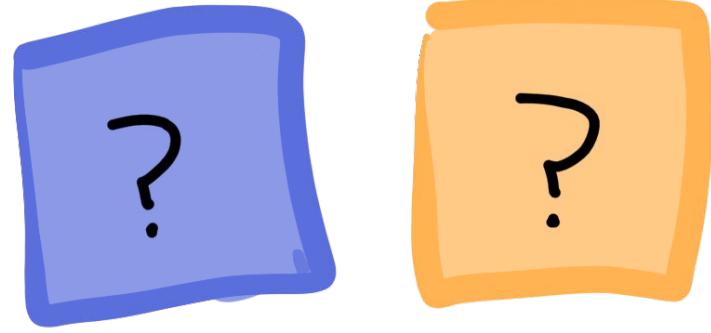


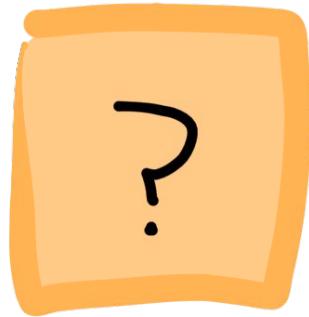
Kai hanging on!

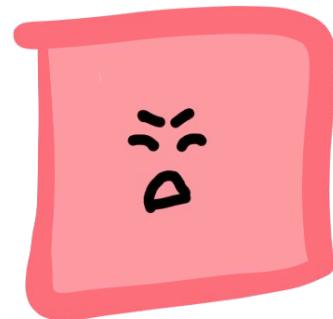
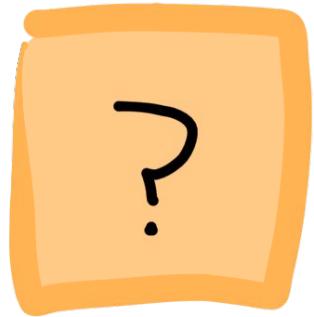


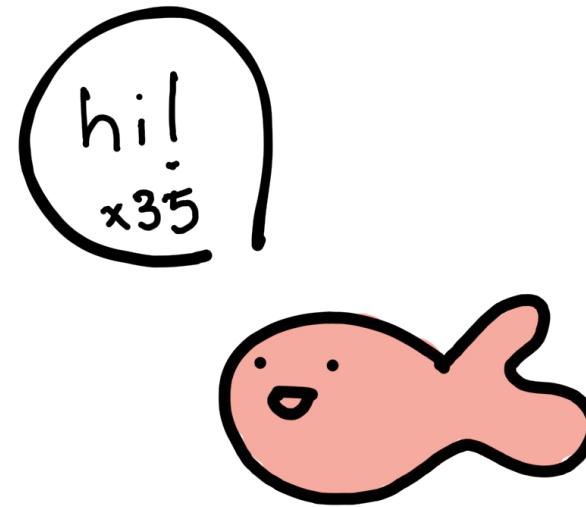


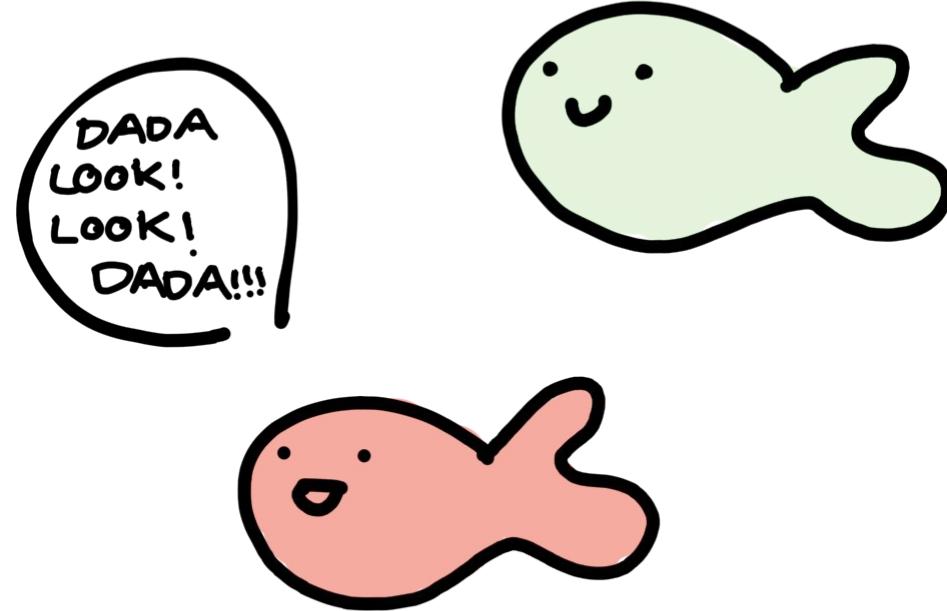












HIGH TIDE



Oh look,
new friends.

Oh no,
it's Anemone!

Why?

Whatever you
do, don't get
too close.



Science museum!



Got his permit



Bye-bye, Woody



Augmentative and Alternative Communication (AAC) Devices

Lightwriter SL40



Lightwriter SL40



Lightwriter SL40





@driuft



1

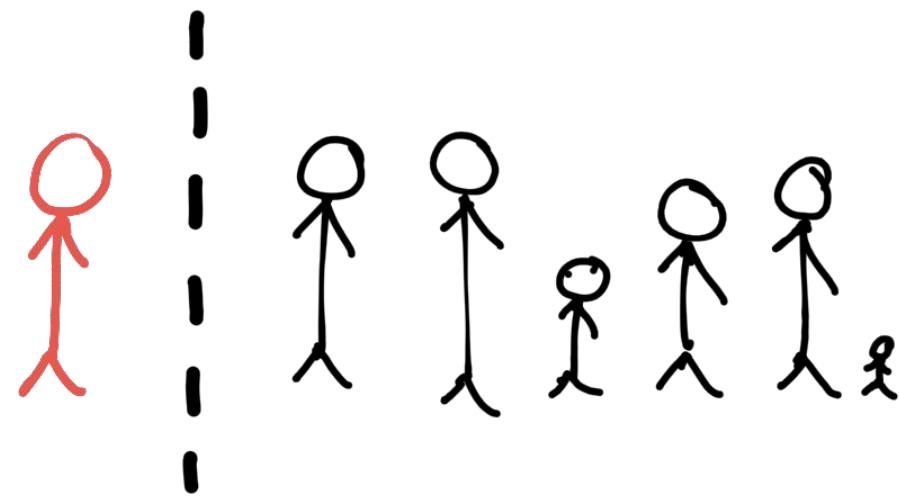
1

BILLION

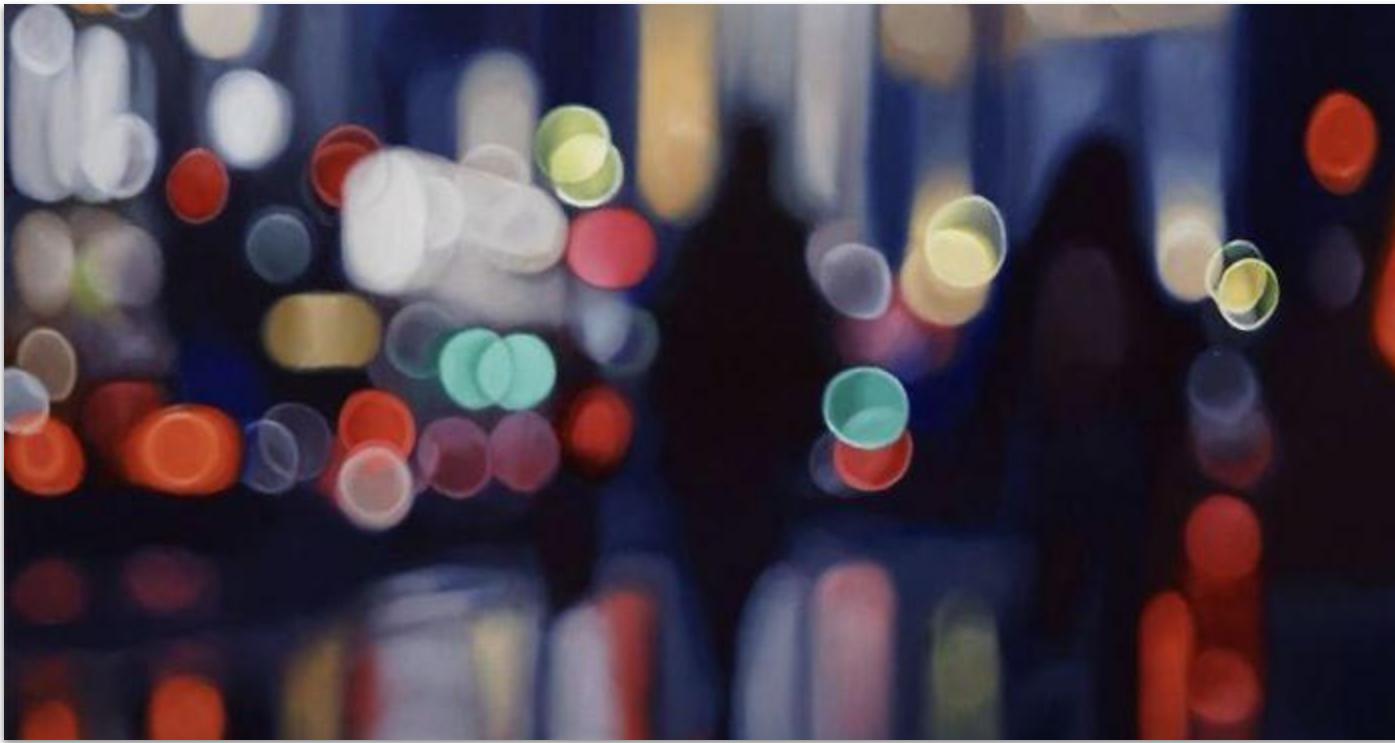
1

BILLION

people



Eye-sight



Hand-eye coordination



Limited **visibility**



Limited sound reception



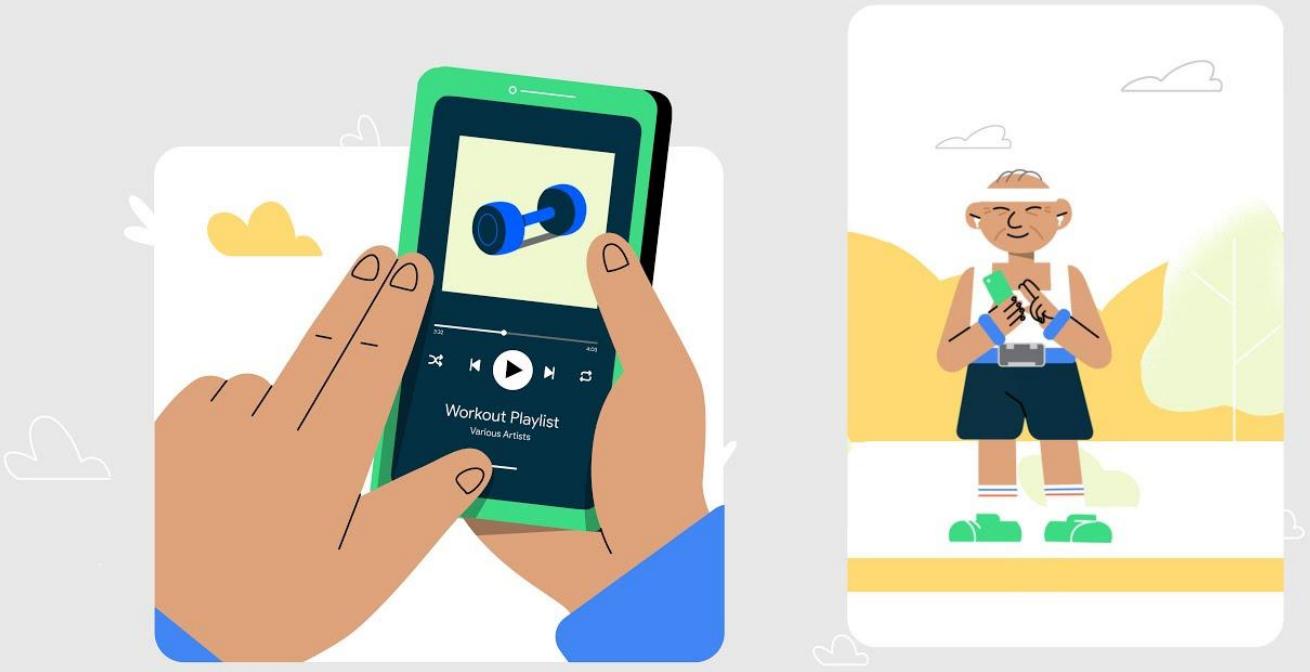
Distracted driver













Pokémon



FORMULA 1

DRIVE TO SURVIVE







@driuft



What'd you think?

Describe UI elements



```
<!-- Use string resources for easier localization. -->
<!-- The en-US value for the following string is "Inspect". --
>
<ImageView
    ...
    android:contentDescription="@string/inspect" />
```



```
<!-- Use string resources for easier localization. -->
<!-- The en-US value for the following string is "Inspect". --
>
<ImageView
    ...
    android:contentDescription="@string/inspect" />
```

- Avoid including element type in description



```
<!-- Use string resources for easier localization. -->
<!-- The en-US value for the following string is "Inspect". --
>
<ImageView
    ...
    android:contentDescription="@string/inspect" />
```

- Avoid including element type in description
- Each description must be unique



```
<!-- Use string resources for easier localization. -->
<!-- The en-US value for the following string is "Inspect". --
>
<ImageView
    ...
    android:contentDescription="@string/inspect" />
```

- Avoid including element type in description
- Each description must be unique
- Skip over decorative elements/effects



```
<!-- Use string resources for easier localization. -->
<!-- The en-US value for the following string is "Inspect". --
>
<ImageView
    ...
    android:contentDescription="@string/inspect" />
```

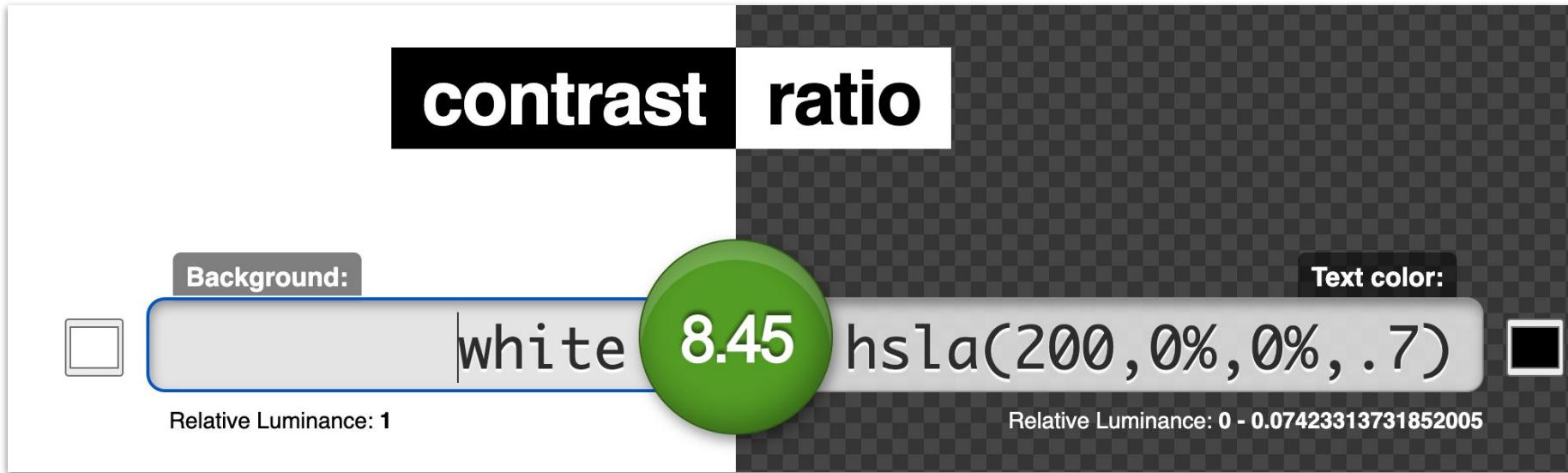
- Avoid including element type in description
- Each description must be unique
- Skip over decorative elements/effects
 - Set `android:importantForAccessibility` attribute to “no”

Color Contrast

@driuft

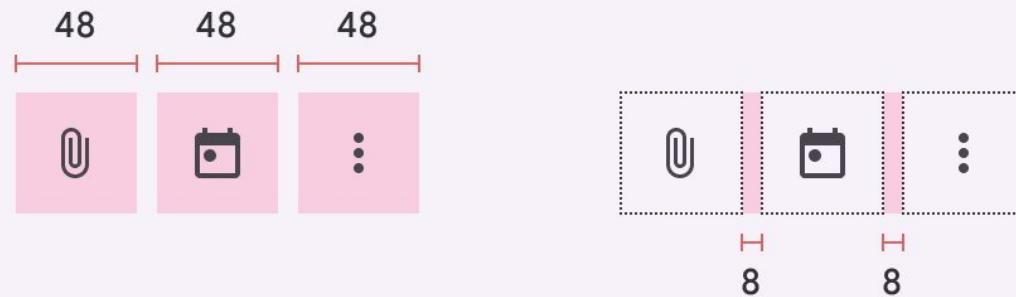
21:1

contrast-ratio.com



Touch Target Sizing







```
<ImageButton ...  
    android:paddingLeft="4dp"  
    android:minWidth="40dp"  
    android:paddingRight="4dp"  
  
    android:paddingTop="8dp"  
    android:minHeight="32dp"  
    android:paddingBottom="8dp" />
```



```
<ImageButton ...  
    android:paddingLeft="4dp"  
    android:minWidth="40dp"  
    android:paddingRight="4dp"  
  
    android:paddingTop="8dp"  
    android:minHeight="32dp"  
    android:paddingBottom="8dp" />
```

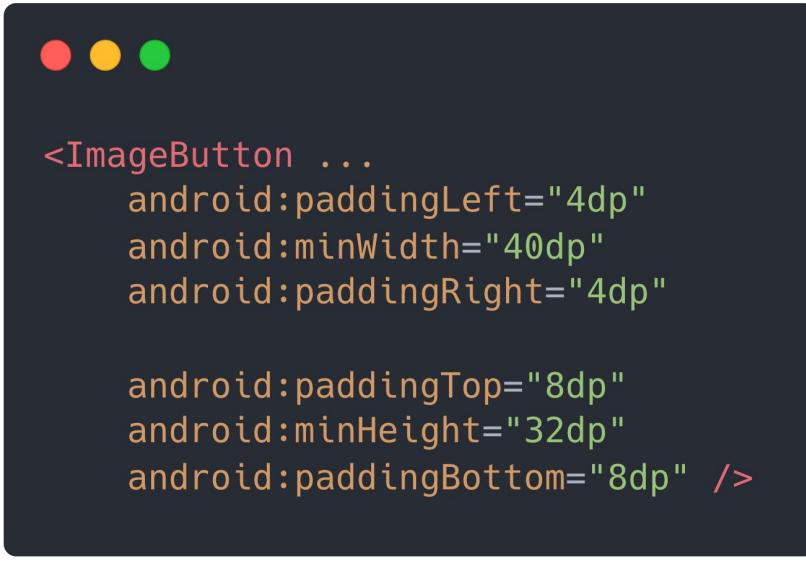
The following conditions should **both be true**:



```
<ImageButton ...  
    android:paddingLeft="4dp"  
    android:minWidth="40dp"  
    android:paddingRight="4dp"  
  
    android:paddingTop="8dp"  
    android:minHeight="32dp"  
    android:paddingBottom="8dp" />
```

The following conditions should **both be true**:

- `paddingLeft + minWidth + paddingRight >= 48dp`



```
<ImageButton ...  
    android:paddingLeft="4dp"  
    android:minWidth="40dp"  
    android:paddingRight="4dp"  
  
    android:paddingTop="8dp"  
    android:minHeight="32dp"  
    android:paddingBottom="8dp" />
```

The following conditions should **both be true**:

- $\text{paddingLeft} + \text{minWidth} + \text{paddingRight} \geq 48\text{dp}$
- $\text{paddingTop} + \text{minHeight} + \text{paddingBottom} \geq 48\text{dp}$



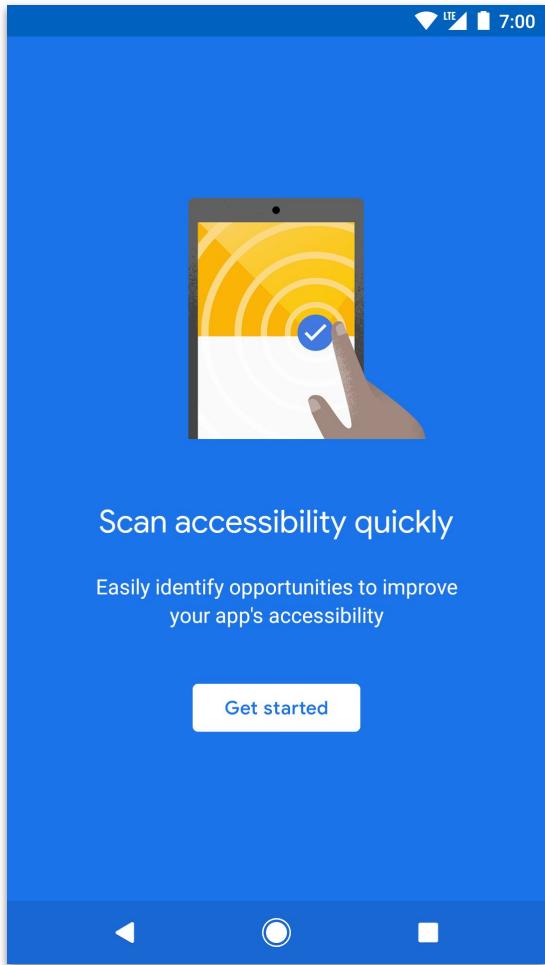
```
<ImageButton ...  
    android:paddingLeft="4dp"  
    android:minWidth="40dp"  
    android:paddingRight="4dp"  
  
    android:paddingTop="8dp"  
    android:minHeight="32dp"  
    android:paddingBottom="8dp" />
```

The following conditions should **both be true**:

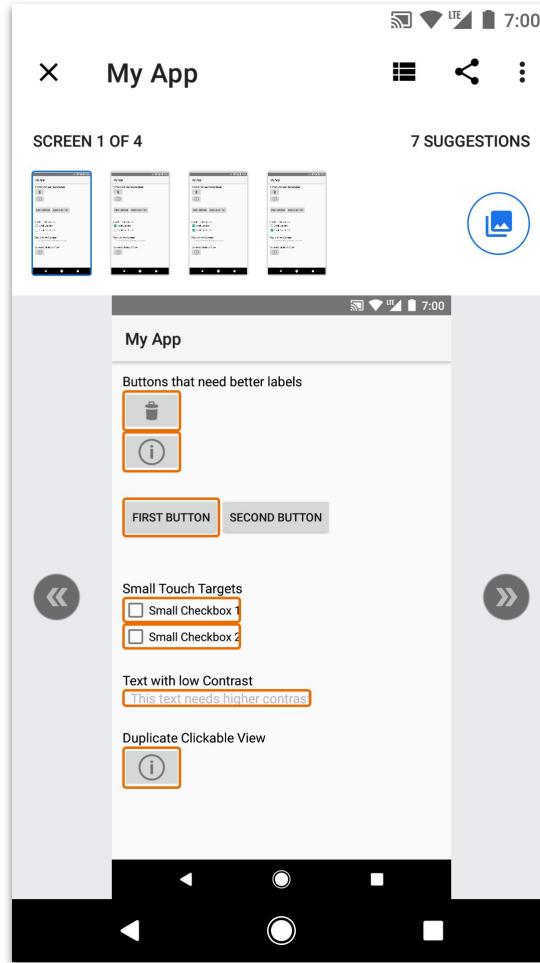
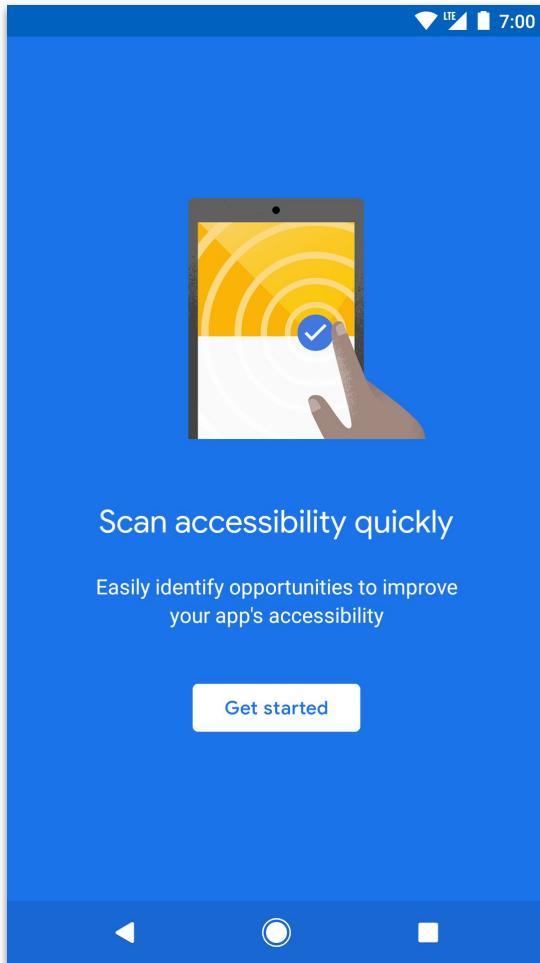
- `paddingLeft + minWidth + paddingRight >= 48dp`
- `paddingTop + minHeight + paddingBottom >= 48dp`
- **This does NOT mean the element's visible area must be 48dp**

Testing

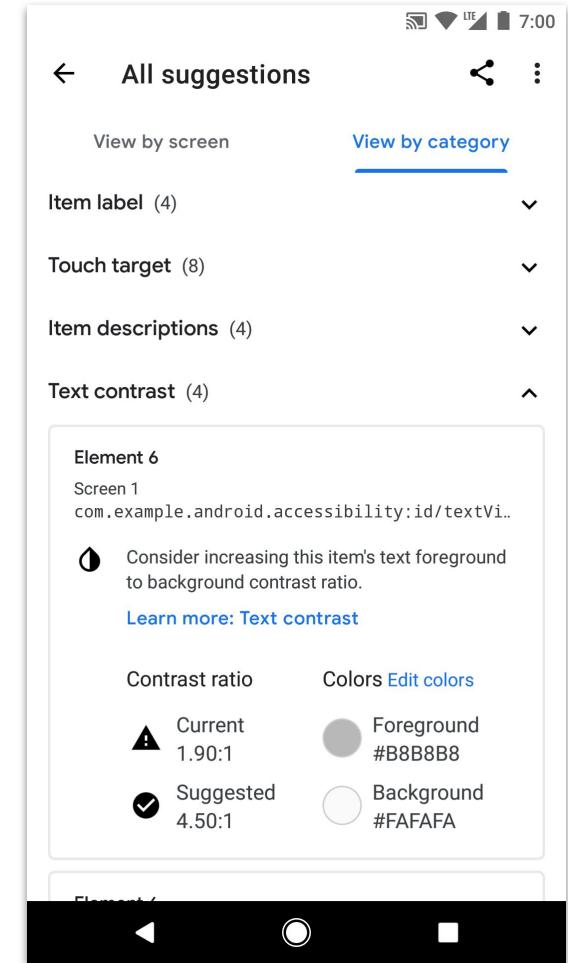
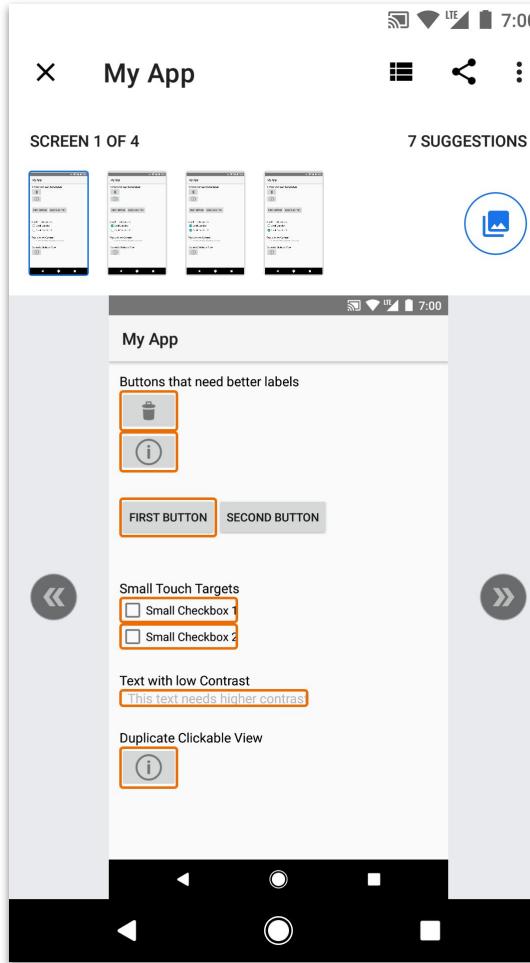
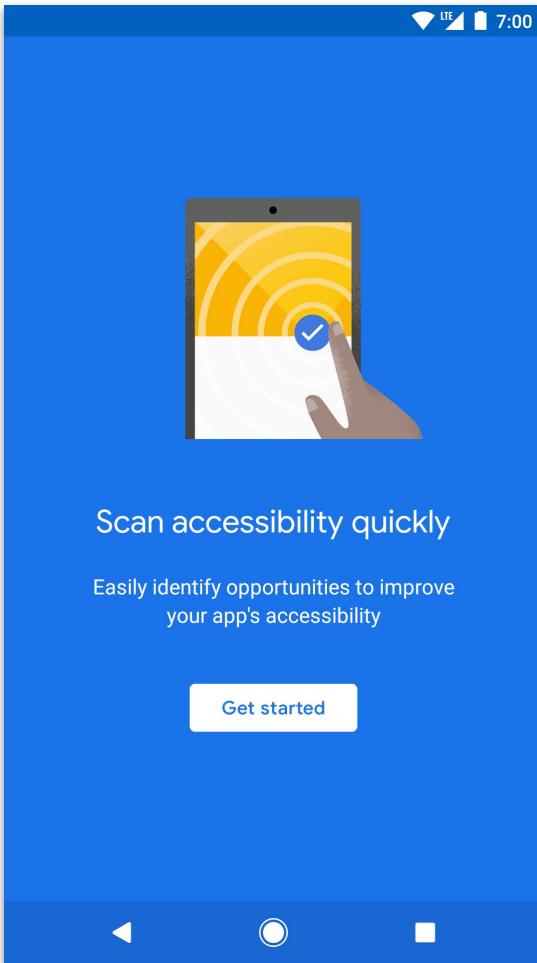
Accessibility Scanner



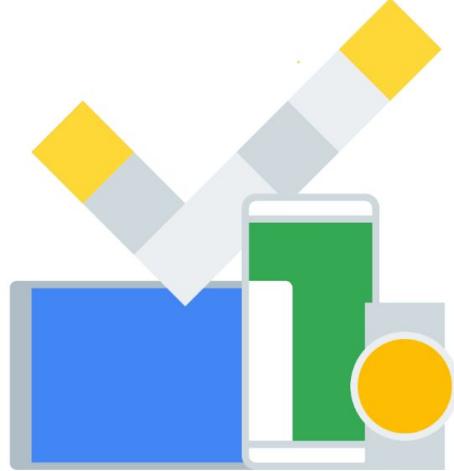
Accessibility Scanner



Accessibility Scanner



Google Play Pre-Launch Report



Spot issues before they affect your users. Test on a range of Android devices to learn more about your app's stability, performance, accessibility, and more.

Google Play Pre-Launch Report

Summary

App bundle tested on 4 different devices. [Learn more](#)



Warnings found. We recommend fixing before releasing to production.

Stability

10

unique issues

Performance

0

unique issues

Accessibility

5

unique issues

Security and trust

0

unique issues

Google Play Pre-Launch Report

Summary

App bundle tested on 4 different devices. [Learn more](#)



Warnings found. We recommend fixing before releasing to production.

Stability

10

unique issues

Performance

0

unique issues

Accessibility

5

unique issues

Security and trust

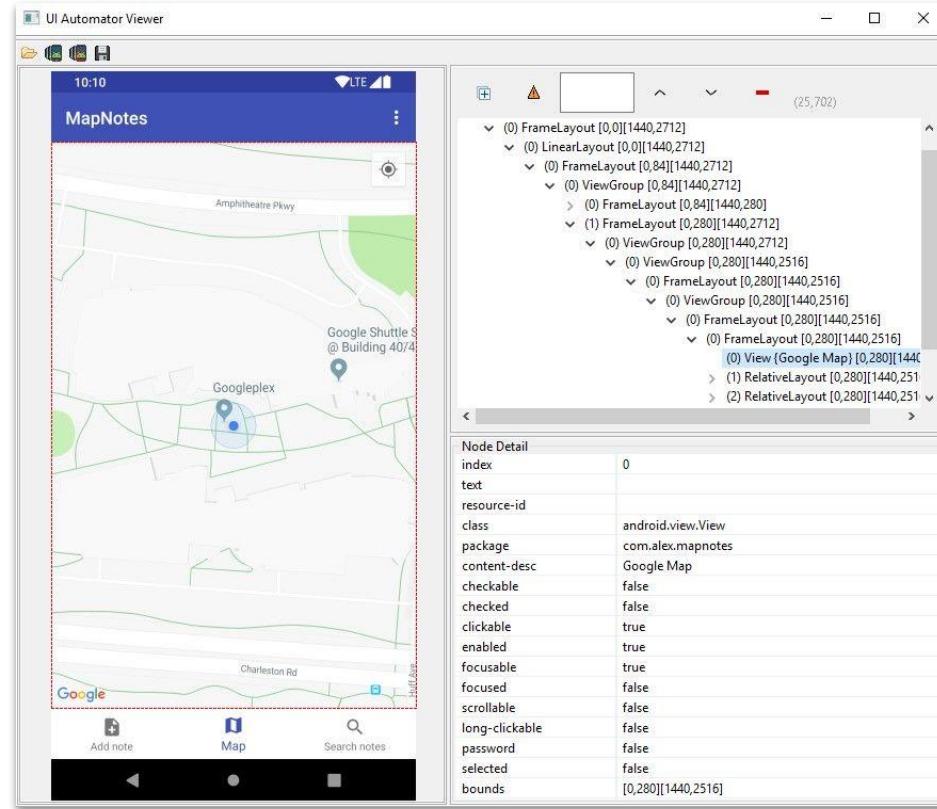
0

unique issues

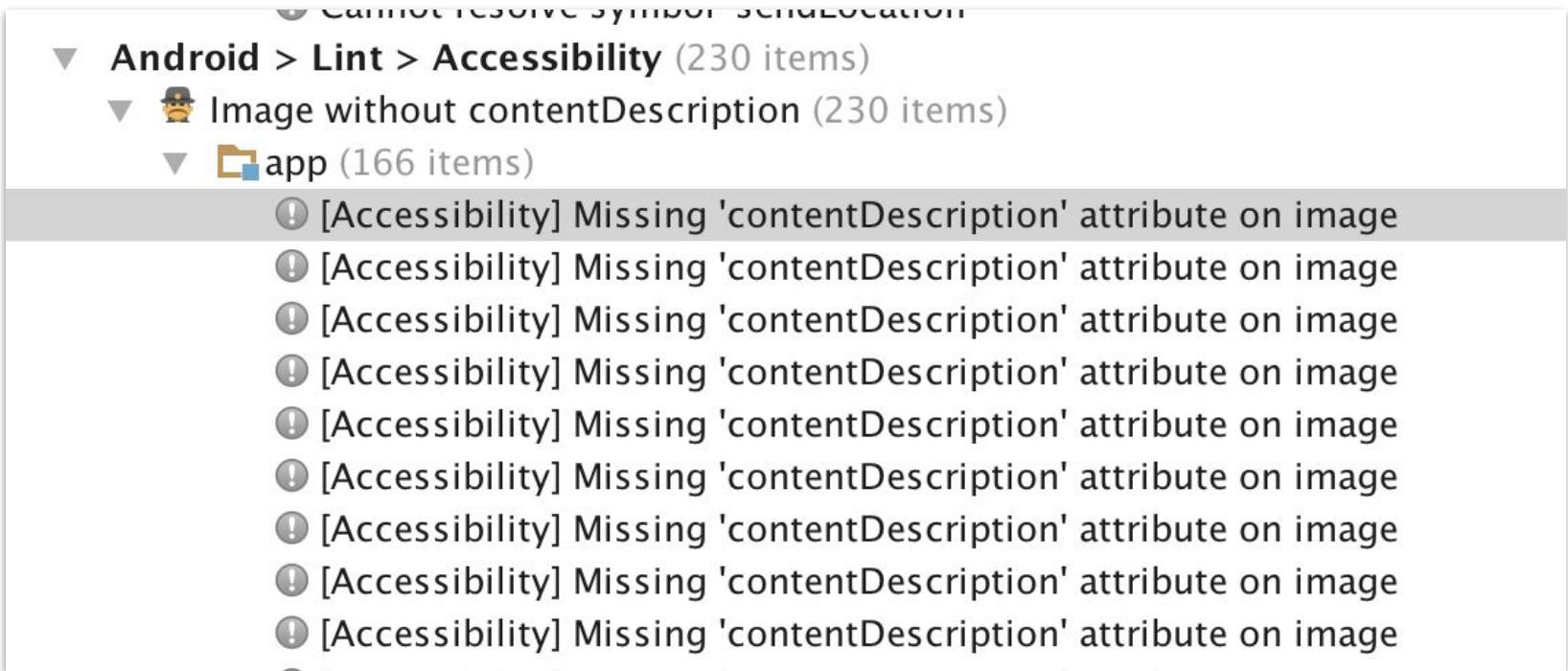
Report history

Artifact	Stability	Performance	Accessibility	Security and trust	Tests completed	Report generated	
1	10	0	5	0	4	Oct 14, 2021, 08:55	→

UI Automator Viewer



Lint



(Automated) Testing

Espresso



Espresso



Robolectric



Lastly...

USER TESTING



Wrap-up



Wrap-up

By prioritizing accessibility in development you:



Wrap-up

By prioritizing accessibility in development you:

- Create user-friendly design



Wrap-up

By prioritizing accessibility in development you:

- Create user-friendly design
- Foster inclusivity and social responsibility



Wrap-up

By prioritizing accessibility in development you:

- Create user-friendly design
- Foster inclusivity and social responsibility
- Future-proof



Wrap-up

By prioritizing accessibility in development you:

- Create user-friendly design
- Foster inclusivity and social responsibility
- Future-proof
- **Give all the other Kais in the world a chance**



Follow me!

@driuft on **all platforms**



Any questions?



My daughter Ava

THANK YOU FOR LISTENING!