Swipe, Tap, Pinch

Optimizing Collabora Online for touchscreens

Skyler Grey (she/her)

Software Engineering Intern
skyler.grey@collabora.com

Collabora Online

LibreOffice Technology

Technical Day
COOL days

What is this talk

- **Big-ticket** items

- **Not going to discuss minor fixes** to mobile apps, (although we've made a lot of them too)

Collabora Online works great on your computer

But it's not perfect on touchscreens

- Scrolling around in calc always **brings up your keyboard**

- With both touchscreen and mouse, it's **one-or-the other**!

- Pinching to zoom **moves unpredictably**

Technical Day
COOL days

Collabora Online

Stopping keyboard pop-ups
(when we know you're on a mobile device)

What's the problem?

- If you navigate around a spreadsheet, your keyboard pops up

- If you put it down, it pops up again

- This happens when moving, it also happens when tapping between cells, it also happens when pinching to zoom
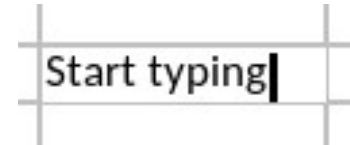
What's the problem?

Why does the keyboard pop up?

- An onscreen keyboard focuses **when you're able to start typing**

- Normally we want that, if you end up in a cell in calc **you _should_ be able to type immediately**

You can type into here, so the keyboard pops up…

Start typing

…but that's normally a good thing!

How do you stop it?

- If you have an onscreen keyboard **we should only pop up when you click to edit**

- We can't tell for sure, so **we guess based on if you are on a mobile device**

You can't type

Until you tap to pop up the keyboard

Where typing works as normal

Start typing

```
guessOnscreenKeyboard: function() {
    if (global.keyboard.onscreenKeyboardHint != undefined) {
        return global.keyboard.onscreenKeyboardHint;
    }

    return (
        global.ThisIsAMobileApp &&
        !global.ThisIsTheEmscriptenApp
    )
        || global.mode.isMobile()
        || global.mode.isTablet();
},
```

Technical Day
COOL days

Collabora Online

What can I do?

- If you're **integrating Collabora Online**, and you know whether you're on a touchscreen **you can tell us**!

- I made both **postMessage** and **ui_defaults** options so it's easy to configure with everything else

col.la/keyboardhintpostmessage

Configure with PostMessage

```
Hint_OnscreenKeyboard &
Hint_NoOnscreenKeyboard
```

col.la/keyboardhintuidefaults

Configure with ui_defaults

```
OnscreenKeyboardHint=true
```

Collabora Online

What does it look like now?

- If we can tell you're using a touchscreen keyboard, we'll stop the keyboard popping up when moving about!

- This provides a much smoother experience, provided we can detect that an onscreen keyboard is likely

- Integrators can override our detection if they have more information

Technical Day
COOL days

Collabora Online

What does it look like now?

# Touchscreen and mouse, working in harmony!

Touchscreen *and* mouse

- Touchscreen and mouse need **conflicting things**

- We solved this before by **deciding whether to handle touchscreen or mouse events** on load

- You could only have **one or the other**! Right click precluded long press

On a touchscreen

Long press → Open menu

With a mouse

Long press → Do nothing...

Right click → Open menu
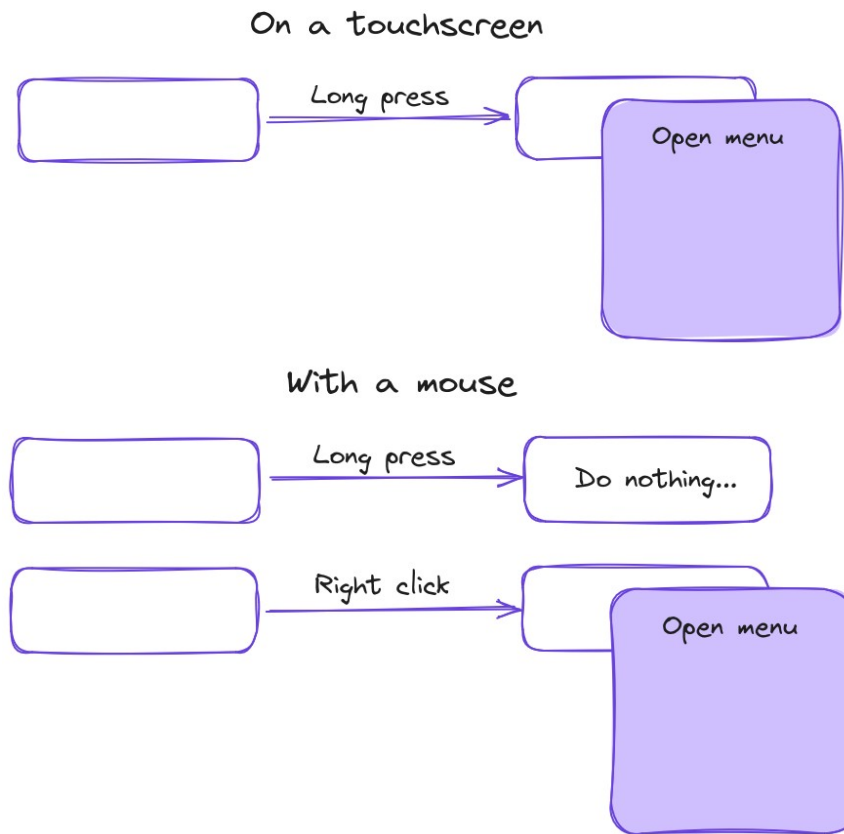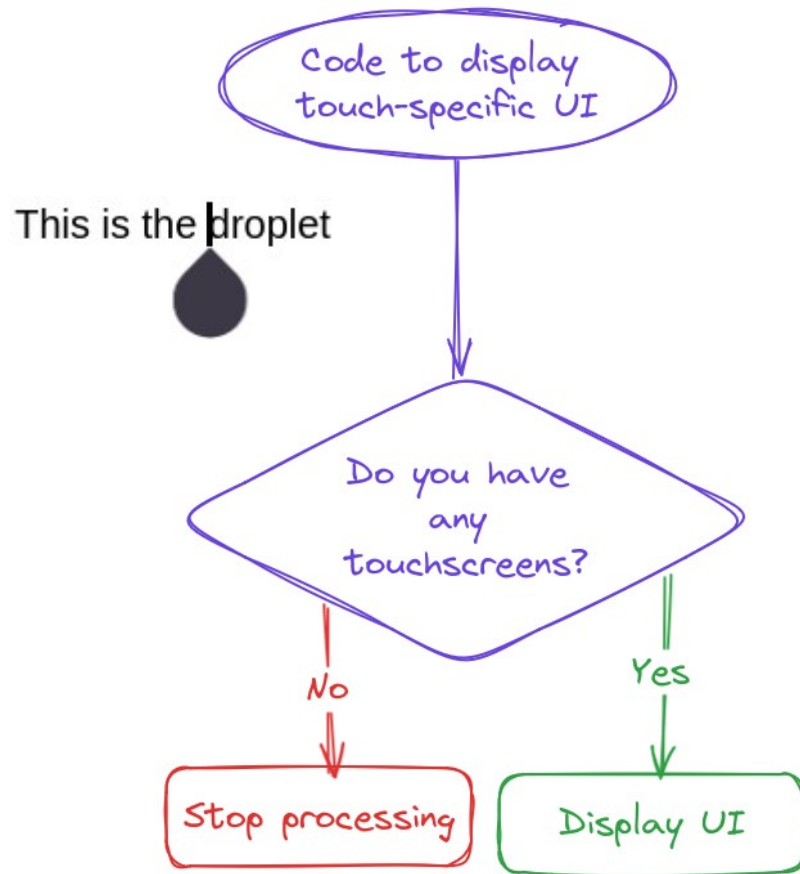
Touchscreen *and* mouse

- Before running touch specific code, we can **check if the event was from a touchscreen**

- If it was, **run the touch code**

- For mouse specific code, do the reverse
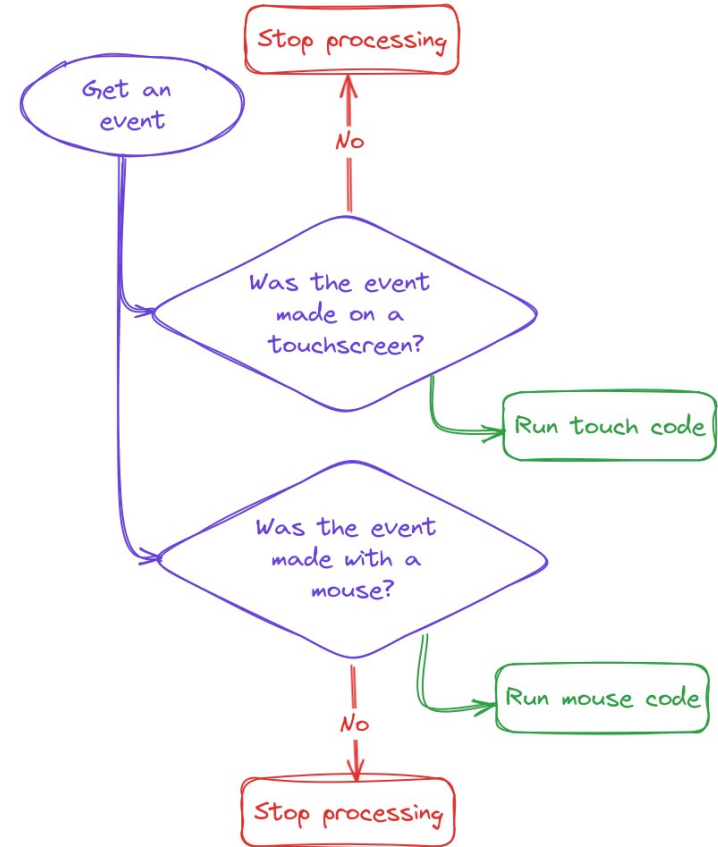
Touchscreen *and* mouse

- Some code needs to know **without an event**

- An example might be displaying the draggable cursor droplet

- In that case, we can **detect if you have a touchscreen at all**

This is the droplet

Code to display touch-specific UI

Do you have any touchscreens?

No

Yes

Stop processing

Display UI

Pinching and Panning

What's the problem?

- If you move your fingers while pinching to zoom, the document won't always move underneath them

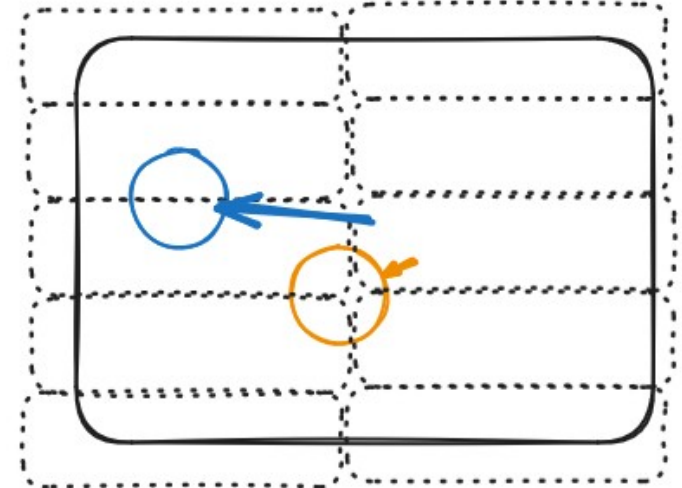- Sometimes it'll move faster or slower than you
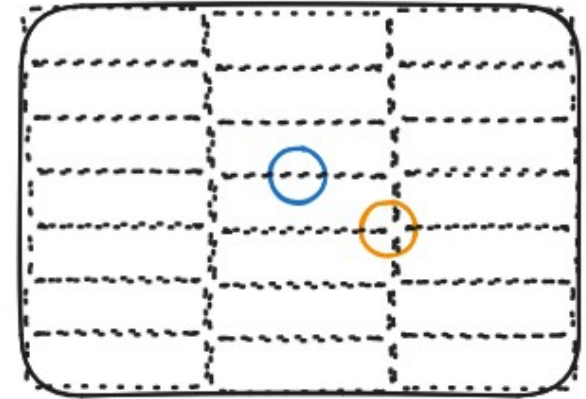
- Sometimes it'll move backwards!

What's the problem?

How do we expect pinches to work?

- We want to feel like we're **dragging the document**

- That means that **your fingers should stay where they are** relative to the document

What was the problem?

- This wasn't possible, because we were not fully taking use of **where the pinch started**

- Therefore, you could be **moved to the wrong position** depending on your zoom & movement

Collabora
Online

What did I do about it?

- After rewriting some of the underlying zoom code to keep track of the start position, **zoom-pans work how you'd expect**!

What does it look like now?

- If you move your fingers while pinching to zoom, the document moves at the speed of your fingers

- We keep the center of your fingers in the same place on the document, so pinching, zooming and panning all feel like you're physically moving the document

Collabora
Online

What did I do about it?

Where next?

We'll continue making it better!

- Chrome has experimental support for **controlling the onscreen keyboard**

- We are **improving the automatic onscreen keyboard detection**

- We're looking at **offsetting the zoom when you run against the document edge**, so you don't zoom out the same way you zoomed in

- **I hope to bring you lots more touch improvements in the future!**

Collabora Online

Thank you!

By Skyler Grey

Collabora Online

LibreOffice Technology

Technical Day
COOL days