
MULTITOUCH FIREFOX

Internship project at Mozilla, Felipe Gomes



Multitouch project

- * Improve our support for touchscreens
- * How usable is Firefox on a touchscreen
- * How consistent
- * What new things can be done

Multitouch project

- * Various sub projects
 - * Make everything scrollable work
 - * Resolve ambiguities
 - * Customizations mockups
 - * Investigate usable sizes in the UI
 - * Multitouch on web pages

Scroll



~~Scroll~~ Pan

- * Physical movement
- * More natural
- * Inertia
- * Feedback

~~Scroll~~ Pan

- * Pan in Firefox - current status
 - * Vertical webpages, horizontal webpages
 - * Drop down boxes, lists, trees
 - * Menus
 - * Tab bar
 - * Scrollbars

More

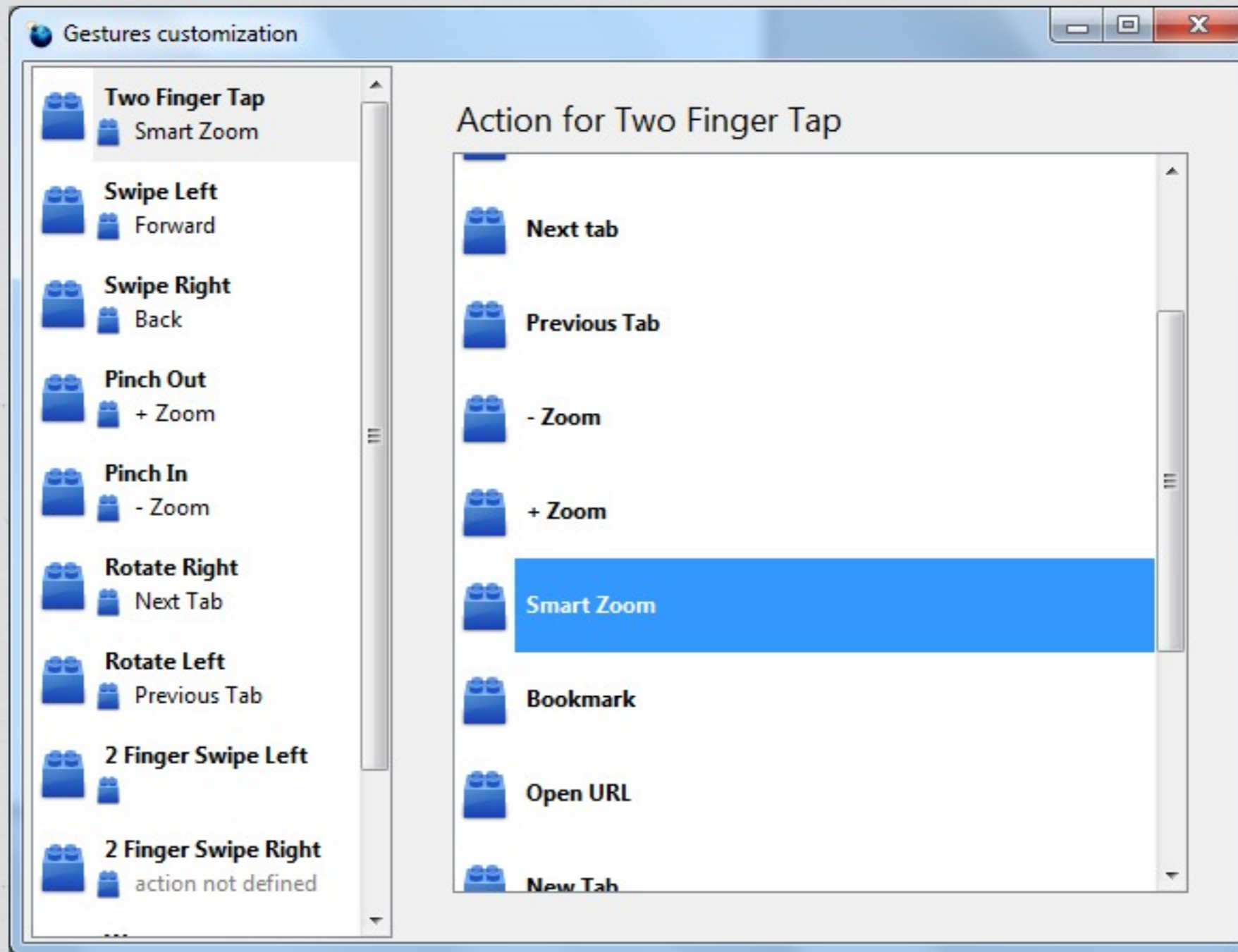
- * Resolving ambiguities
 - * Select text
 - * Vertical / Horizontal movement
 - * Drag tabs
 - * Drag elements

Gestures

- * Two-finger panning
- * Pinch / Spread for zoom
- * Two-finger tap
- * Swipe Left / Right
- * Rotate

Customization Mockups

- * UI for customizing gestures
- * How to choose gesture and action
- * Usable interface for touch
- * Free-form gestures



Gestures customization

- Swipe Left
Forward
- Swipe Right
Back
- Pinch Out
+ Zoom
- Pinch In
- Zoom
- Rotate Right**
Next Tab
- Rotate Left
Previous Tab
- 2 Finger Swipe Left
- 2 Finger Swipe Right
action not defined
- Wave
no action chosen
- Create new gesture

Action for Two Finger Tap

Smart Zoom	Smart Zoom	Smart Zoom	Smart Zoom
Smart Zoom	Smart Zoom	Smart Zoom	Smart Zoom
Smart Zoom	Smart Zoom	Smart Zoom	Smart Zoom

Gestures customization



 **Swipe Left**
Forward


 **Swipe Right**
Back

 **Pinch Out**
+ Zoom

 **Pinch In**
- Zoom

 **Rotate Right**
Next Tab

 **Rotate Left**
Previous Tab

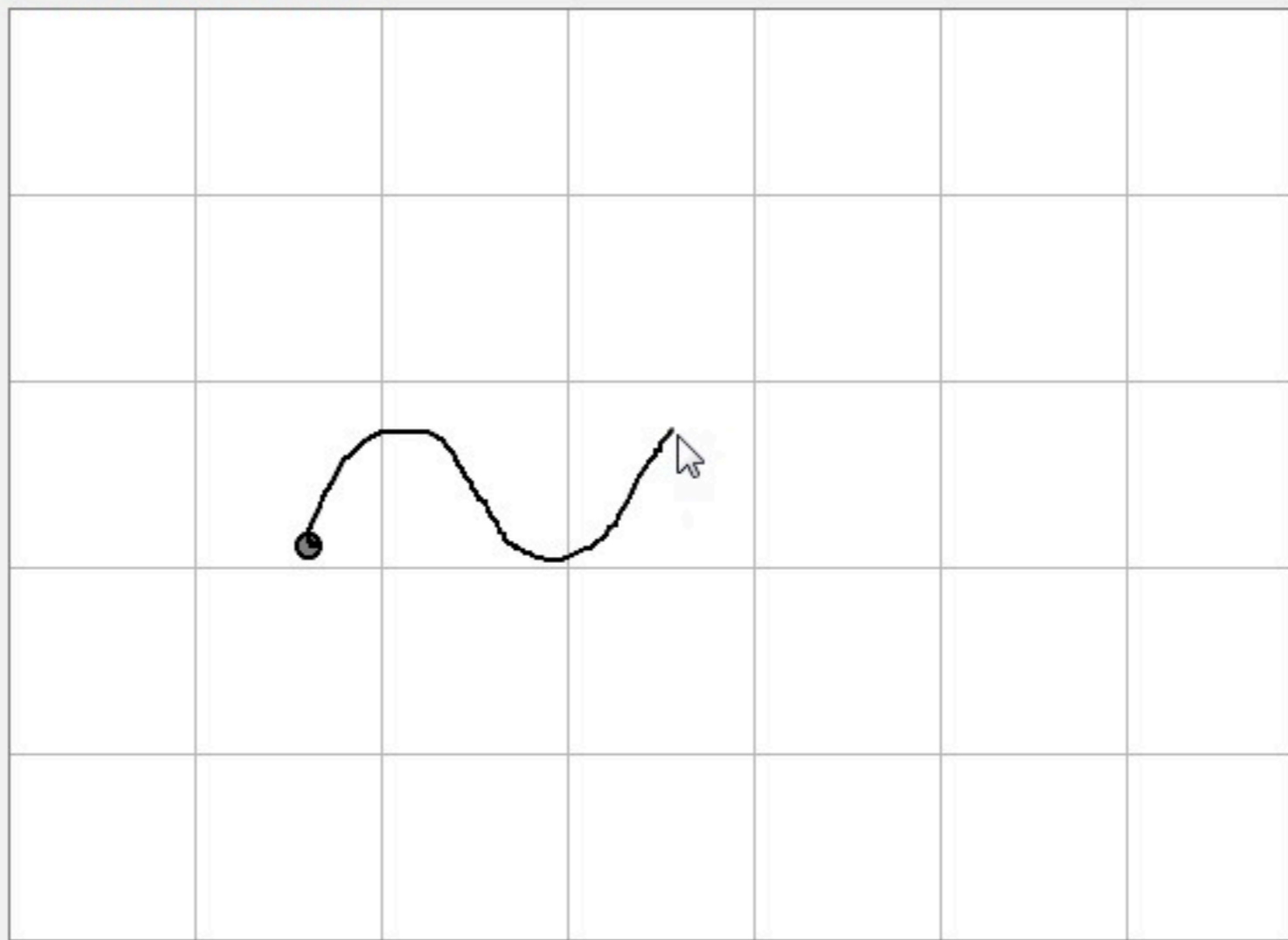
 **2 Finger Swipe Left**

 **2 Finger Swipe Right**
action not defined

 **Wave**
no action chosen




















 **Create new gesture**

Define your gesture

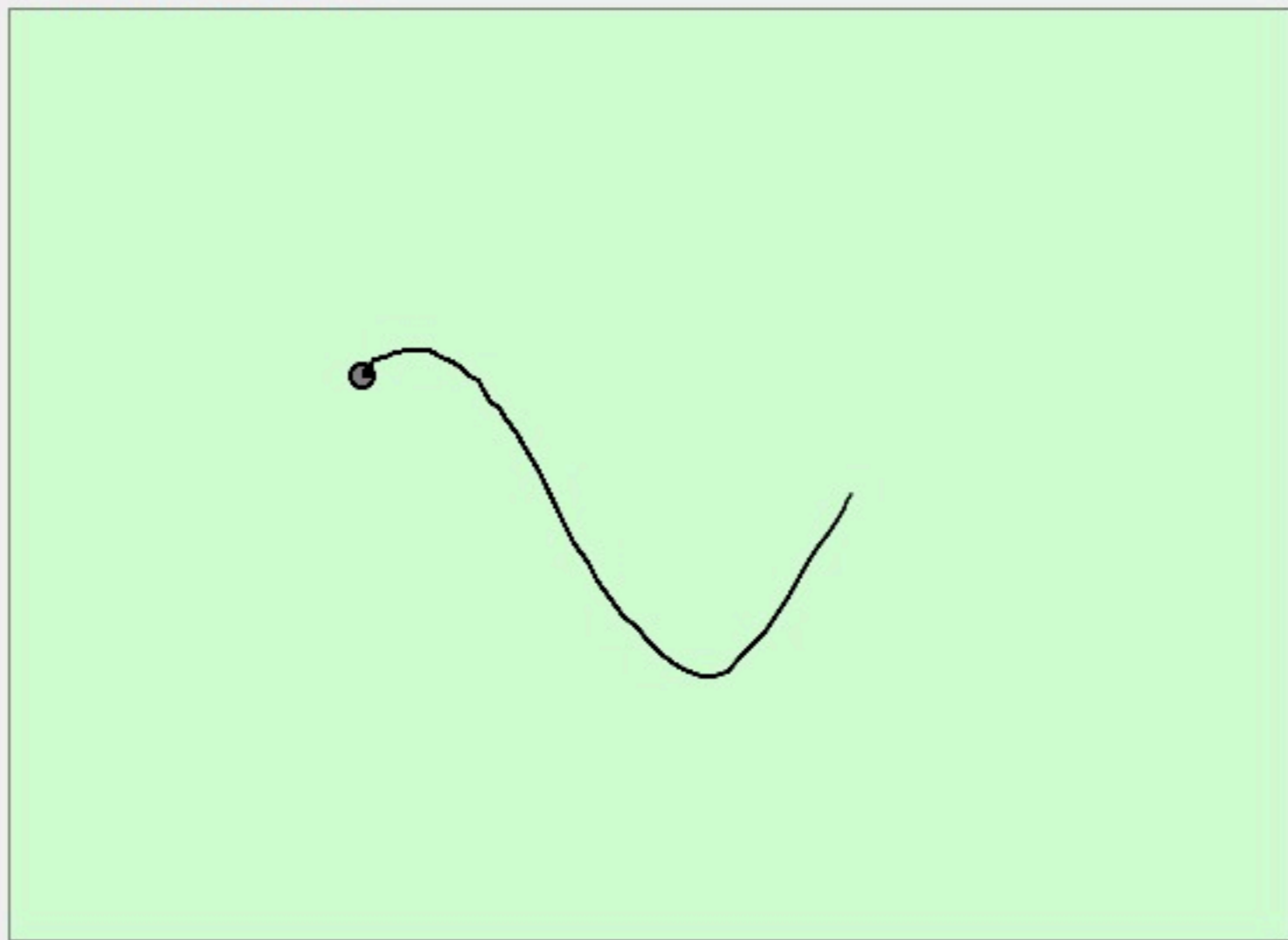


Gestures customization



-  **Swipe Left**
 Forward
-  **Swipe Right**
 Back
-  **Pinch Out**
 + Zoom
-  **Pinch In**
 - Zoom
-  **Rotate Right**
 Next Tab
-  **Rotate Left**
 Previous Tab
-  **2 Finger Swipe Left**

-  **2 Finger Swipe Right**
 action not defined
-  **Wave**
 no action chosen
-  **Create new gesture**

Define your gesture



UI Sizes

- * Default size of elements made for mouse pointer
 - * very good pixel precision
- * Guidelines for Finger UIs
 - * diameter of finger: 0.6" to 0.8" (1.6cm to 2.0cm)
 - * pad of finger: 0.4" to 0.55" (1.0cm to 1.4cm)
 - * fingertip: 0.31" to 0.39" (0.8cm to 0.99cm)

UI Sizes

- * Close button
- * Drop down markers
- * Tab bar
- * New Tab button
- * Awesome bar icons

UI Sizes

- * Don't change current theme
- * CSS pseudo-selector
 - * `:-moz-system-metric(touch-enabled)`

UI Sizes

```
.tab-close.button:-moz-system-metric(touch-enabled) {  
    -moz-transform: scale(1.3);  
}
```

```
.tabs-newtab-button:-moz-system-metric(touch-enabled) {  
    min-width: 1cm;  
}
```

Multitouch on webpages

- * Make it available for web pages
- * Web apps
- * Provide developers with easier access to multitouch
 - * creativity

Multitouch on webpages

- * DOM Events

- * MozTouchDown

- * MozTouchMove

- * MozTouchRelease

Multitouch on webpages

- * One event for each finger
 - * `event.streamId`
- * Pushing discussion for web standards

Multitouch on webpages

* Demos

Next goals

- * Create more demos
 - * increase awareness and visibility
- * Advance the API
- * Make it a standard
- * Implement on other operating systems



Thanks!

Questions?

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