1 HIGH PERFORMANCE WEB USER INTERFACES

GOOGLE I/O 2016
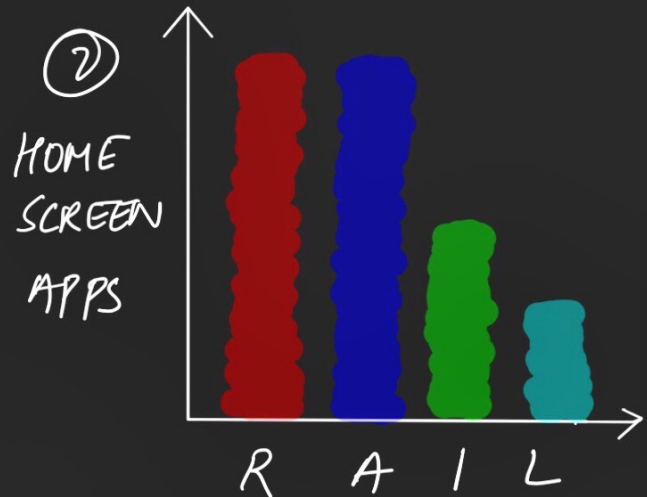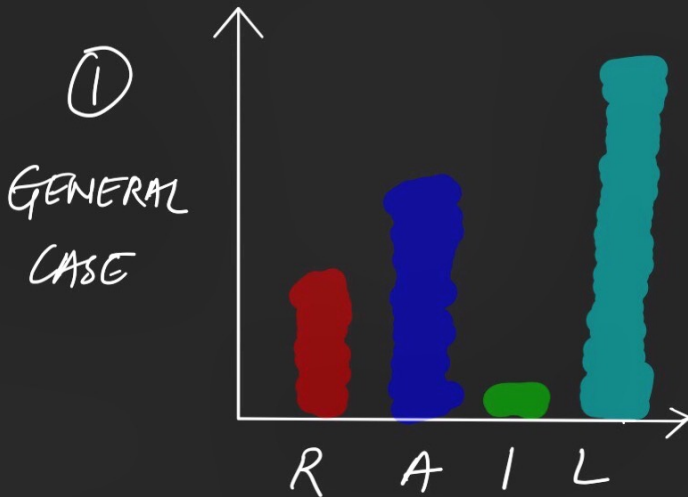
R Response   0.1s

A Animation   16ms (60fps)

I Idle   50ms

L Load   1s

RAIL MODEL : RELATIVE IMPORTANCE

① GENERAL CASE

R A I L

② HOME SCREEN APPS

R A I L

HOME SCREEN ← USER WAS PROMPTED ← WEB APP HAS SERVICE WORKER

≈ Handling offline and poor connectivity

3 COMPONENTS :
→ SIDE NAV
→ DISMISSABLE CARDS
→ EXPANDING/COLLAPSING VIEW

SIDE NAV
→ pointer-events : none ;

Layer Promotion → will-change : transform ;
→ separate from page.

* Don't promote everything → keep memory usage low
→ keep composition time low.

SWIPEABLE CARDS
→ promote layer at last minute
→ Transform and opacity .

EXPAND AND COLLAPSE
Changing width, height, left, top]→ Triggers Layout
⇓
Proportional to DOM size

SOLUTION : Transform

RAIL + FLIP
→ 100ms to complete