
**IMPROVING FRONT END
PERFORMANCE**

INTRODUCTION TO RAIL MODEL



I am a Front End Enthusiast by profession and work with QED42 as a Sr. Front End Developer. My Work is to deal with Front End and make Web more awesome :)

Swastik Pareek (Sr. Front-end Developer)

AGENDA

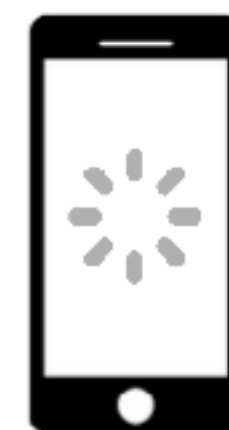
- Learn about RAIL user Model and Rendering Performance.
- Critical Render Path.
- Tools & Tips to measure and improve Front Performance as whole.
- CASE STUDY (if time permits) :)



RENDERING PERFORMANCE

RAIL MODEL





Response

Animation

Idle

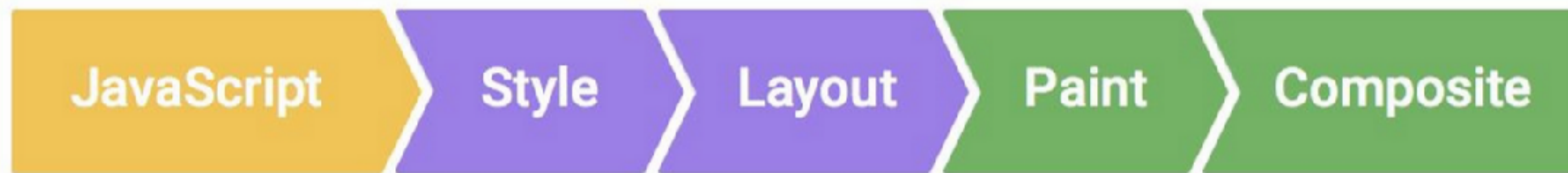
Load

RESPONSE

- Respond in under 100ms
- For actions that take longer than 500ms to complete, always provide feedback.

ANIMATION

- Produce a frame in 10ms
- Animations aren't just fancy UI effects.
- Produce 60 frames per second



IDLE

- Maximise idle time.
- Pre-load data to a minimum, use idle time to load rest.
- Deferred work - group into blocks, but give high priority to user tasks.
- Main thread JS work chunked no larger than 50ms.

LOAD

- Deliver content under 1000ms.
- Focus on optimising the critical rendering path to unblock rendering.
- Enable progressive rendering and do some work in the background.
- Defer non-essential loads to periods of idle time.



AGENDA

CRITICAL RENDERING PATH

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- Prioritising the display of content that relates to the current user action.
 - Progressively render content.
 - Intermediate steps between receiving code bytes and rendering them into pixels
 - To know more - <https://in.udacity.com/course/website-performance-optimization--ud884>



TOOLS & TIPS



TO MEASURE


- There are many.
- Page speed insight by google
- Use chrome dev tools to
- Site speed IO

TO ENHANCE

- Have a critical CSS and Critical JS for your critical HTML.
- Enable server caching and GZIP compression on server.
- Use compression techniques for static resources.
- Eliminate multiple requests.
- Have lazy loading effect for large images - www.medium.com
- Use SVG sprites where possible



A CASE STUDY





What did you learn Today ?

Thank you!