

Flutter Debugging

Flutter Denver Meetup

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Michael Jordan, Quiverware LLC

Requested Topics

"I suspect everyone is hungry to see any tools people are successful with right now..."

Levi Cook

"...I would find a tour of Flutter DevTools helpful. I'm also interested in debugging performance issues (sluggishness, etc)."

Rona Kilmer

Presentation Topics

- Background Leading to Flutter
- Color Clues Overview
- Basic Debugging Techniques
- Flutter Widget and Layout Debugging
- Advanced Debugging
 - Rendering, Performance, Profiling, Heap Maps, etc.

Background

Over 35 years of software development experience in a variety of fields including CAD/CAM, Desktop Publishing, computer games, big data, medical biometrics app, and mobile apps.

www.shinyobjectaffliction.com

- Auto-trol Technology - CAD/CAM
- Quark - East Asian QuarkXPress
- Adobe - InDesign
- Idol Minds - PlayStation3 Pain
- LEGO - LEGO Universe MMORPG
- Alteryx - Desktop Designer
- Medtronic - Data Aggregator
- Cardinal Peak - React Native Projects
- Quiverware LLC - Color Clues

Lots of different tech...

- Sperry Varian
- Digital Equipment Corp
- Apollo
- Sun
- Macintosh
- Windows PCs

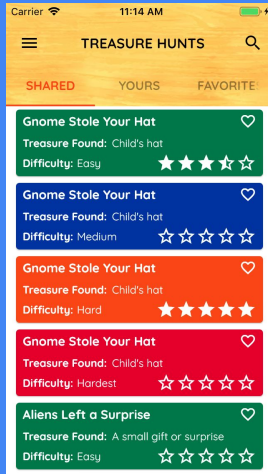
- Fortran IV / 77
- Pascal
- C / C++
- C#
- Python
- SQL
- Objective-C
- Java
- JavaScript
- Swift
- Kotlin
- Dart

- Proprietary Frameworks
- Macintosh
- MFC
- WinForms
- WPF
- HTML / CSS
- iOS
- Android
- React Native
- Flutter

Color Clues

Children's treasure hunt game. The game has a physical box or card deck component that uses a companion Android or iOS app to play the game.

www.colorclues.com



- Multiple user screens
- Game play screen
- Game set-up screen
- Treasure hunt creation and editing screens
- Animations
- Audio recording and playing
- Community features - sharing, rating, etc.
- User Authentication
- Cloud Database and Storage
- Available on both the App Store and Google Play



Debugging Flutter apps

“The debugger isn’t a substitute for good thinking. But, in some cases, thinking isn’t a substitute for a good debugger either. The most effective combination is good thinking and a good debugger.”

Steve McConnell, “Code Complete”

Debugging Facilitates Good Thinking

- Learn Dart programming language
- Learn Flutter mobile UI framework

Basic Debugging Techniques

- Android Studio Integrated Tools
 - Asserts, Breakpoints. Print statements
- Dart Analyzer
- DartPad
- Sandboxes

Flutter Debugging

- Android Studio Integration
- Flutter Outline
- Flutter Inspector
- Read Flutter Code

Advanced Debugging Tools

- Flutter Inspector - Render Tree
- Flutter Performance
- Dart Observer

Observatory

A Profiler for Dart Apps.

- Determine where an app is spending its time.
- Examine allocated memory.
- See which lines of code have executed.
- Debug memory leaks.
- Debug memory fragmentation.

References

Android Studio Debugger

developer.android.com.studio/debug

Code Complete, Steve McConnell

stevemcconnell.com/books

Color Clues

colorclues.com

DartPad

dartpad.dartlang.org

Dart Packages

pub.dartlang.org/

Flutter Cookbook

flutter.dev/docs/cookbook

Observatory

dart-lang.github.io/observatory