

# Mobile Application Development

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Produced  
by

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Waterford Institute of Technology  
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# Android & Firebase

## Part 4

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### Firebase Integration





# Agenda

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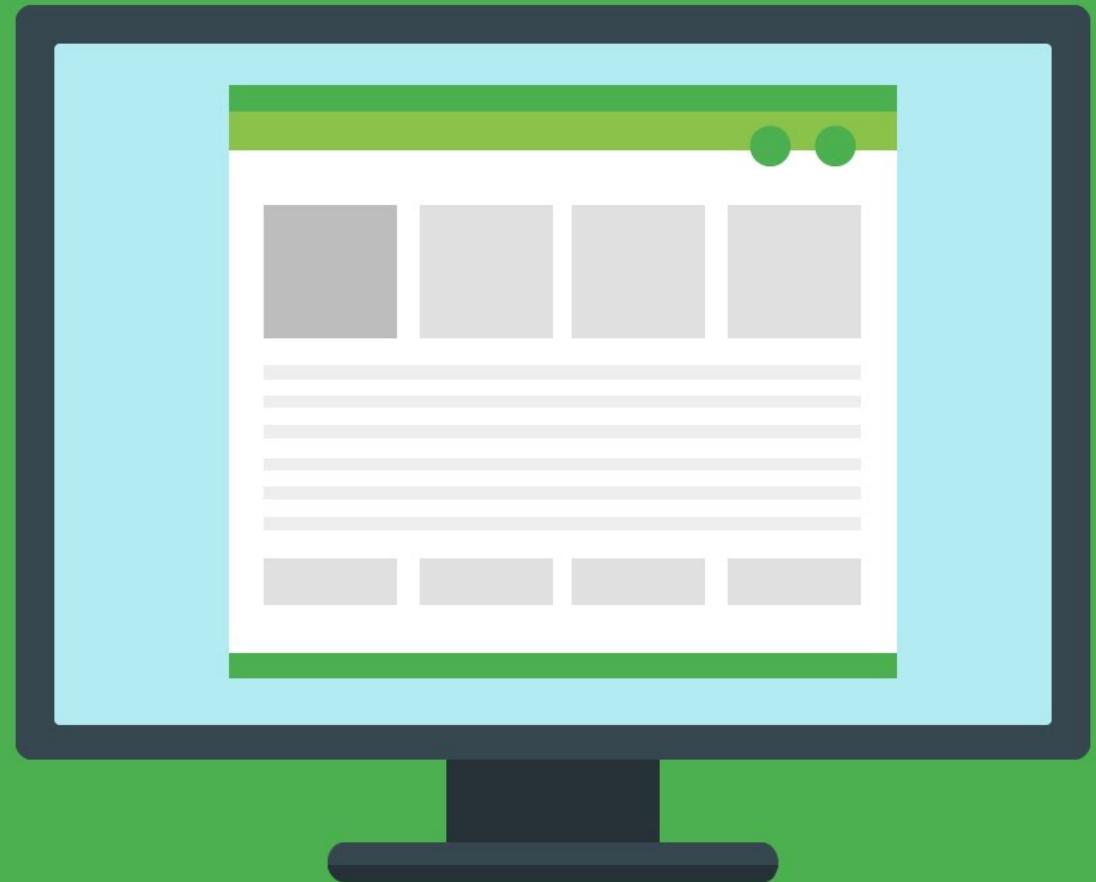
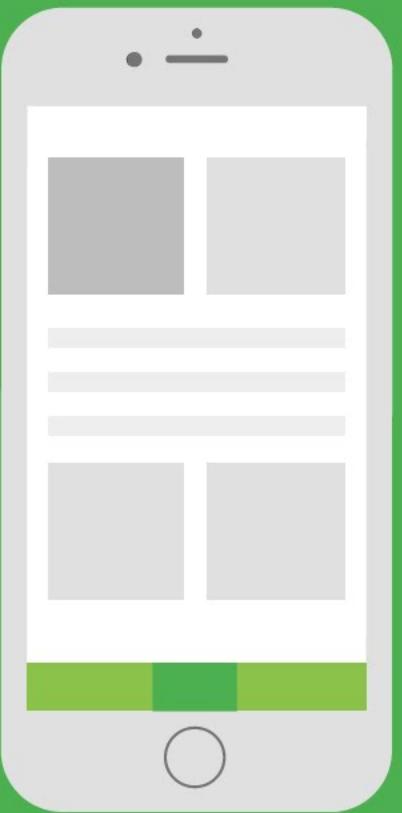
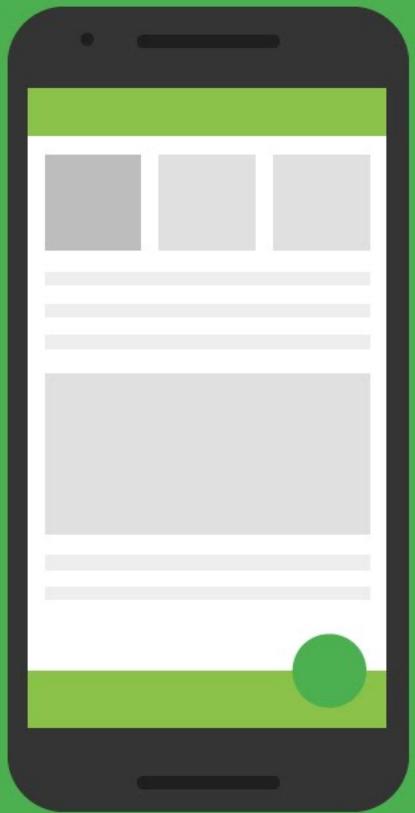
- ❑ Firebase history
- ❑ The all new Firebase
- ❑ Real-time database
- ❑ Firestore
- ❑ Authentication
- ❑ Storage
- ❑ Remote config
- ❑ Hosting
- ❑ Crash reporting
- ❑ Test lab
- ❑ Firebase cloud messaging
- ❑ Dynamic links
- ❑ App indexing
- ❑ Analytics
- ❑ CoffeeMate Highlights & Demos along the way...



# Agenda

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- ❑ Firebase history
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- ❑ **Dynamic links**
- ❑ **App indexing**
- ❑ **Analytics**
- ❑ CoffeeMate Highlights & Demos along the way...



# Dynamic Links

Works the way they're  
supposed to



# Firebase Dynamic Links

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- ❑ When users open a Dynamic Link into an app that is not installed, the app's Play Store page opens, where users can install the app. After users install and open the app, the app displays the deep-linked content.
- ❑ Dynamic Links work seamlessly across iOS, Android, and web apps.
- ❑ If your app needs to be upgraded to open a link, your app automatically opens the link (with appropriate content) after upgrading.
- ❑ Create short links using the Firebase console.
- ❑ Free, unlimited use.



S R T E

console.firebaseio.google.com/project/coffeematefbi/durablelinks

kollect.ie WTC - ROCA Sports The Pirate Bay BofI 365 Online Android Development Electronic Marksheets lynda.com solution.md Triathlon Ireland Apple Developer TeamViewer >>

CoffeeMateFBI - Dynamic Links - Firebase console https://www.jumpyjosh.com +

Firebase CoffeeMateFBI Go to docs :

Overview Analytics

DEVELOP

Authentication Database Storage Hosting Functions Test Lab Crash Reporting Performance

GROW

Notifications Remote Config

Dynamic Links

EARN

AdMob

Spark Free \$0/month UPGRADE

Send users to the right place in your app, whether or not it is already installed

Dynamic Links are URLs that reduce friction and get users to the relevant screens of your app.

[Learn more](#) [View the docs](#)

By clicking on the button below, you understand that your Android/iOS app info (e.g. package name, bundle ID and App ID Prefix) will be added to publicly available asset/association files. [?](#)

GET STARTED



console.firebaseio.google.com/project/coffeematefbi/durablelinks/creation

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**Dynamic Links**

**Create Dynamic Link**

**1 Set up your Dynamic Link**

A Dynamic Link is a deep link into your app that works whether or not your app is installed. On desktop it will go to the deep link URL. [Learn More](#)

Deep link URL [?](#)

Dynamic Link name [?](#)

**NEXT**

**2 Define link behaviour for iOS**

**3 Define link behaviour for Android**

**4 Campaign tracking, social tags and advanced options (optional)**

You can also create Dynamic Links from your app programmatically. [Learn more](#)

CANCEL CREATE DYNAMIC LINK



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console.firebaseio.google.com/project/coffeematefb1/durablelinks/creation

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**Dynamic Links**

← Create Dynamic Link ?

1 Set up your Dynamic Link  
JumpyJosh Home Page, Deep link URL: http://www.jumpyjosh.com

2 Define link behaviour for iOS

- Open the deep link URL in a browser
- Open the deep link in your iOS App

PREVIOUS NEXT

3 Define link behaviour for Android

4 Campaign tracking, social tags and advanced options (optional)

You can also create Dynamic Links from your app programmatically. [Learn more](#)

CANCEL CREATE DYNAMIC LINK



console.firebaseio.google.com/project/coffeematefbi/durablelinks/creation

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## Firebase CoffeeMateFBI - Dynamic Links - Firebase console

Go to docs :

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### Dynamic Links

#### Create Dynamic Link

Set up your Dynamic Link  
JumpyJosh Home Page, Deep link URL: http://www.jumpyjosh.com

Define link behaviour for iOS  
Open the deep link URL in a browser

3 Define link behaviour for Android

Open the deep link URL in a browser  
 Open the deep link in your Android App

ie.cmfibi  
ie.wit.firebaseioestorageex  
ADD ANDROID APP

4 Campaign tracking, social tags and advanced options (optional)

You can also create Dynamic Links from your app programmatically. [Learn more](#)

CANCEL CREATE DYNAMIC LINK



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CoffeeMateFBI - Dynamic Links - Firebase console https://www.jumpyjosh.com +

**Firebase** CoffeeMateFBI ▾ Dynamic Links > Create Dynamic Link Go to docs ⋮

Overview Analytics DEVELOP Authentication Database Storage Hosting Functions Test Lab Crash Reporting Performance GROW Notifications Remote Config **Dynamic Links** EARN AdMob

**UPGRADE**

Spark Free \$0/month

1 Set up your Dynamic Link JumpyJosh Home Page, Deep link URL: http://www.jumpyjosh.com

2 Define link behaviour for iOS Open the deep link URL in a browser

3 Define link behaviour for Android

Open the deep link URL in a browser  Open the deep link in your Android App ie.cmfbi

If your app is not installed, send the user to

Google Play page for your app  Custom URL or Instant App ?

Advanced Settings (optional)

Open Google Play for versions lower than ?

PREVIOUS NEXT

4 Campaign tracking, social tags and advanced options (optional)

You can also create Dynamic Links from your app programmatically. [Learn more ↗](#)

CANCEL CREATE DYNAMIC LINK



console.firebaseio.google.com/project/coffeematefbi/durablelinks/creation

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**Firebase** CoffeeMateFBI ▾ Go to docs ⋮

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**Dynamic Links**

← Create Dynamic Link ?

**Set up your Dynamic Link**  
JumpyJosh Home Page, Deep link URL: http://www.jumpyjosh.com

**Define link behaviour for iOS**  
Open the deep link URL in a browser

**Define link behaviour for Android**  
Link directly in ie.cmfbi

**Campaign tracking, social tags and advanced options (optional)**

Add social meta tags for better sharing

Track a campaign with UTM parameters

Skip the app preview page (not recommended)

You can also create Dynamic Links from your app programmatically. [Learn more](#)

CANCEL CREATE DYNAMIC LINK



S R T E console.firebaseio.google.com/project/coffeematefbi/durablelinks/links/ https://www.jumpyjosh.com

**Firebase** CoffeeMateFBI ▾ Go to docs ⋮

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**Dynamic Links**

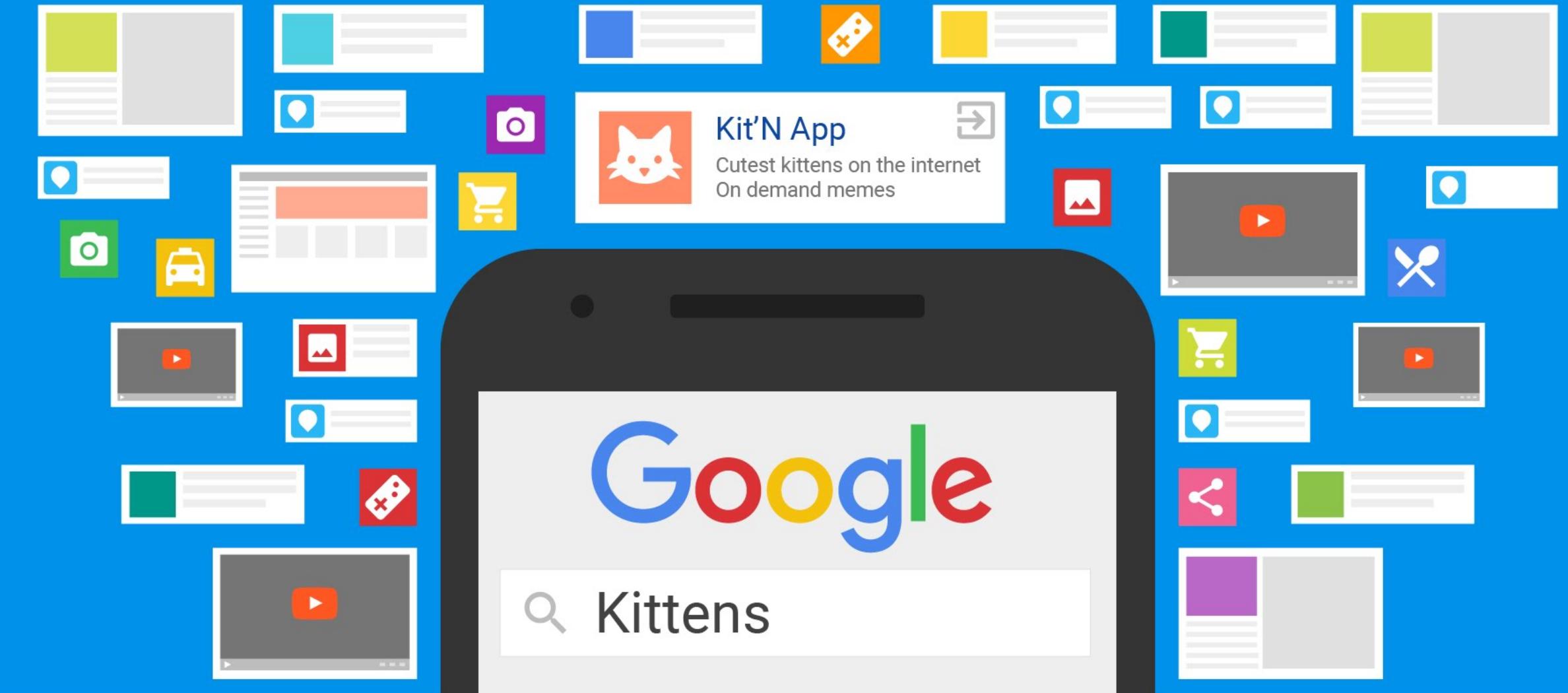
Last 7 days Sep 20 – 26 Sep 2017

<https://vv7wz.app.goo.gl/> NEW DYNAMIC LINK

Link Name	URL	Created ↑	Clicks ↓	First-opens ↓	Re-opens ↓
JumpyJosh Home Page	<a href="https://vv7wz.app.goo.gl/eNh4">https://vv7wz.app.goo.gl/eNh4</a>	28 Sep 2017	You'll see your first data within 36 ho...		

Statistics might not include events that have been logged within the last 36 hours

Spark Free \$0/month UPGRADE



# App Indexing

Get into Google Search



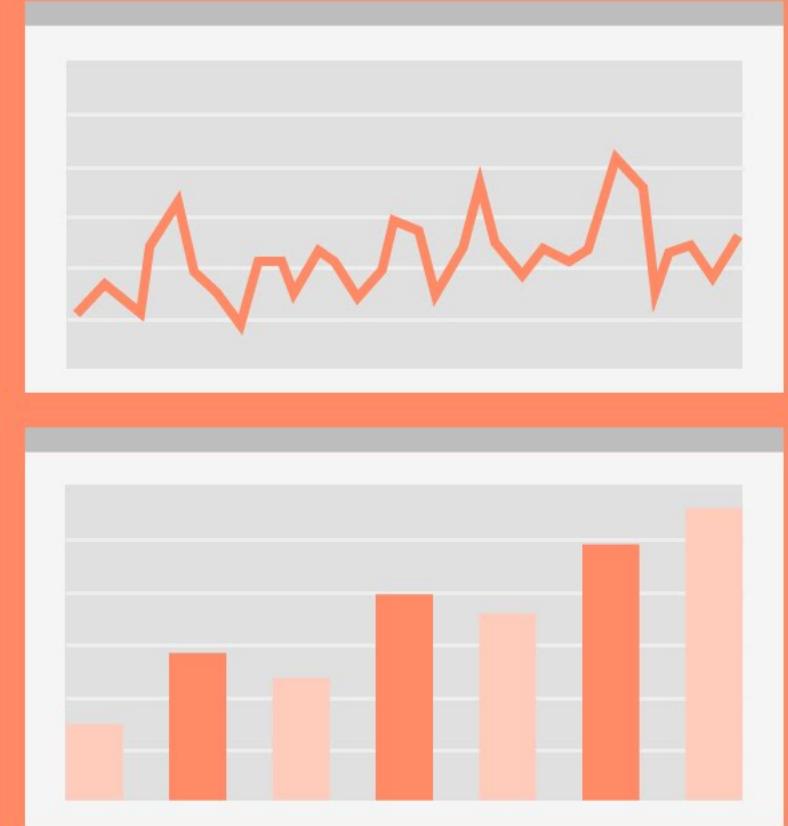
# App Indexing

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- ❑ Firebase App Indexing gets your app into Google Search.
- ❑ If users have your app installed, they can launch your app and go directly to the content they searched for.
- ❑ App Indexing re-engages your app users by helping them find both public and personal content right on their device, even offering **query auto completions** to help them more quickly find what they need.
- ❑ If users don't yet have your app, relevant queries trigger an install card for your app in Search results.



# Analytics



Measure your Success



# Analytics

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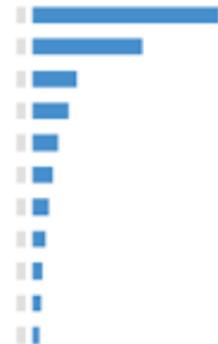
- ❑ Google Analytics for Firebase provides free, unlimited reporting on up to 500 distinct events.
- ❑ The SDK automatically captures certain key events and user properties, and you can define your own custom events to measure the things that uniquely matter to your business.
- ❑ Analytics surfaces data about user behavior in your Android and iOS apps, enabling you to make better decisions about your product and marketing optimization.
- ❑ View crash data, notification effectiveness, deep link performance, in-app purchase data, and more.



## Demographics



Android - iOS

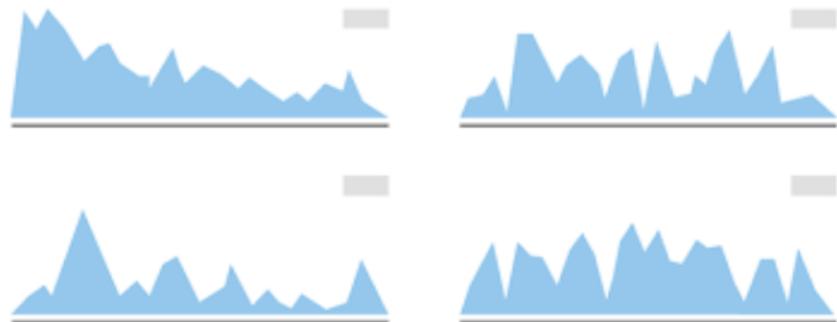


## Retention

Week 0 Week 1 Week 2 Week 3 Week 4

	100%	17%	11%	9%	5%
	100%	19%	10%	7%	
	100%	20%	14%		
	100%	22%			
	100%				

## Engagement



## Average revenue

Monthly Weekly Daily

\$0.46 \$0.31 \$0.11

-10.2% +34.5% -50.5%



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Thanks!



A black and white cartoon illustration of a hand with three fingers pointing towards a smiling sun. The sun has a face with two dots for eyes and a wide smile. It is surrounded by small clouds. The artist's initials 'mc' are written in the bottom right corner of the sun's path.



# Some important points though....

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- ❑ Do not think RDBMS, think JSON. How data should be structured is very important.
- ❑ Firebase has a recycler view, that integrates with real time database smoothly without any listeners.
- ❑ Test lab which is available in paid plan (Blaze), is an amazing feature for testing your app on different real and virtual devices.
- ❑ Set developer mode to true when testing remote config.



# References & Links

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- ❑ [Presentation by Kaushal Dhruw & Shakti Moyal 2016](#)
- ❑ <https://firebase.google.com>
- ❑ Demo app available at <https://goo.gl/WBP5fR>



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# Questions?