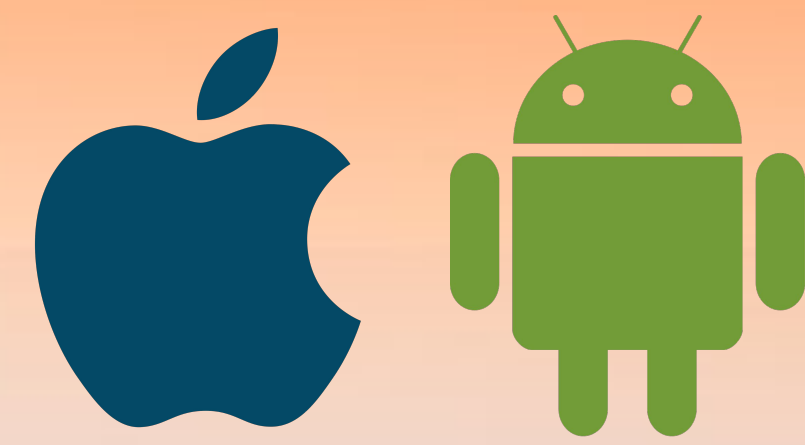




# Mobile Development in RAD Studio



 embarcadero®



# Your Presenter...

**Stephen Ball**

**Pre-sales Director**

**Embarcadero Technologies**

stephen.ball@embarcadero.com

@DelphiABall



 **embarcadero**<sup>®</sup>



The story of **how** (and **why**) I ended up create a mobile app... that made it to **#1 Paid Sports App** in both Apple and Google Play App Stores!







@HarveyB\_Racing

BIKC Regional Champion 2023



# From Arrive and Drive... to Owner Karting



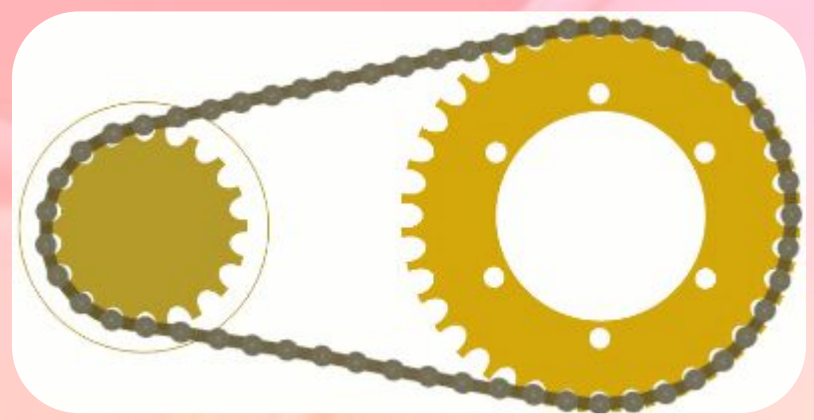


# What do I need to understand?





# How do I setup the kart for the track?



**What size clutch do you have?  
19 or 20 teeth?**

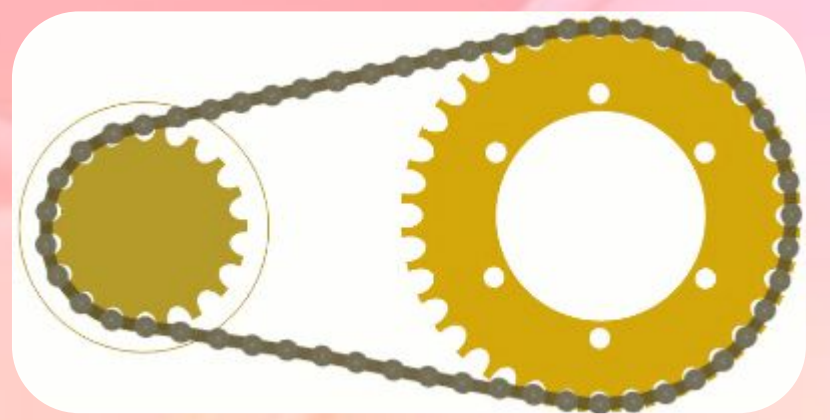
**19, and a 20**

**For a 19, you need a 76, 77, 78 sprocket  
(depending on conditions)....and the right size chain**

**How do you work that out?**

**Add Clutch + Sprocket + chain offset  
(+1)**

**What's the difference with the 20?**



**Roughly you need to add 4 teeth to the sprocket to get the same Gearing Ratio**

**What difference does the ratio make?**

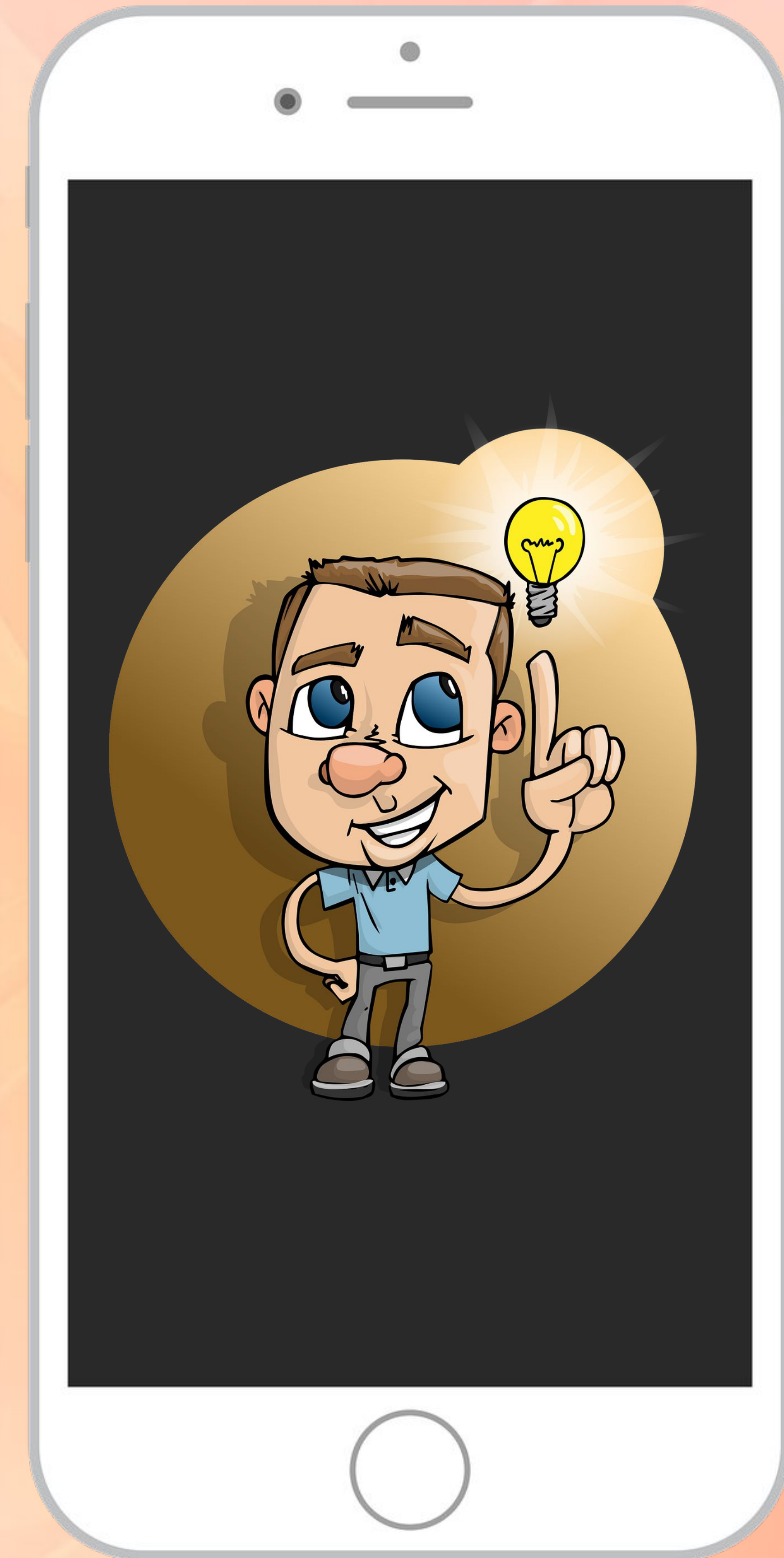
**Larger = more acceleration,  
Lower = more top speed**

**How much difference does each tooth make on track?**

**Erm... Just try the difference setups and see what works for you**



# What I need to understand





# What I need to understand

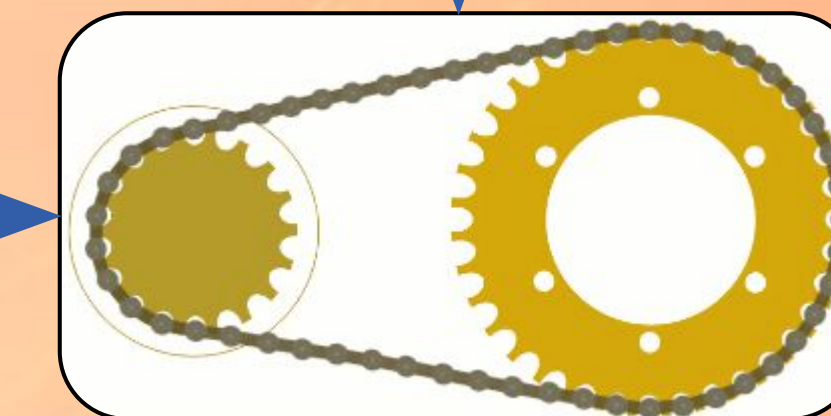


## Available Set Up Options

Clutch

Sprocket

Chains



R.P.M.

/

Ratio

×

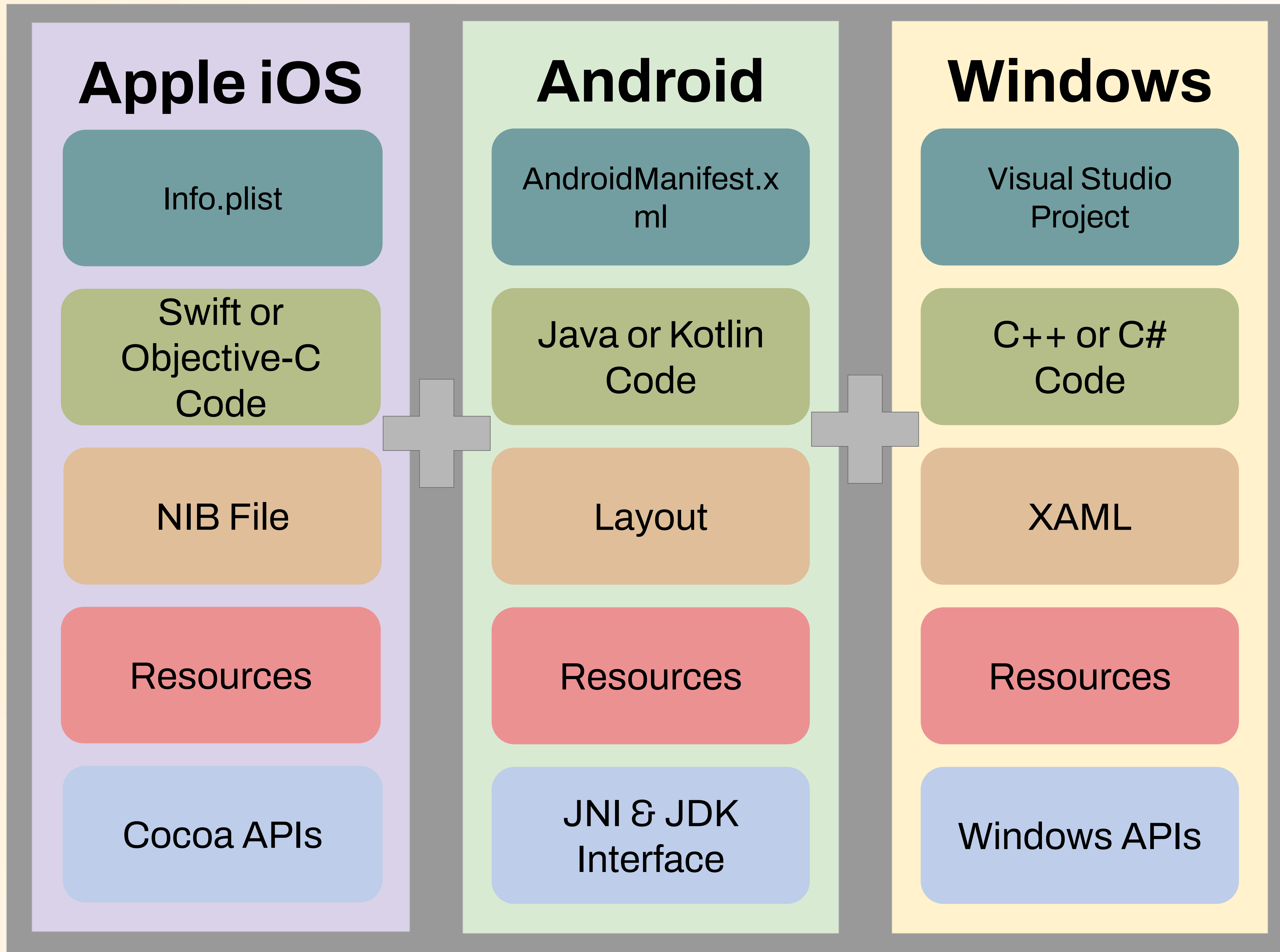
Tyre Size

Distance / Speed

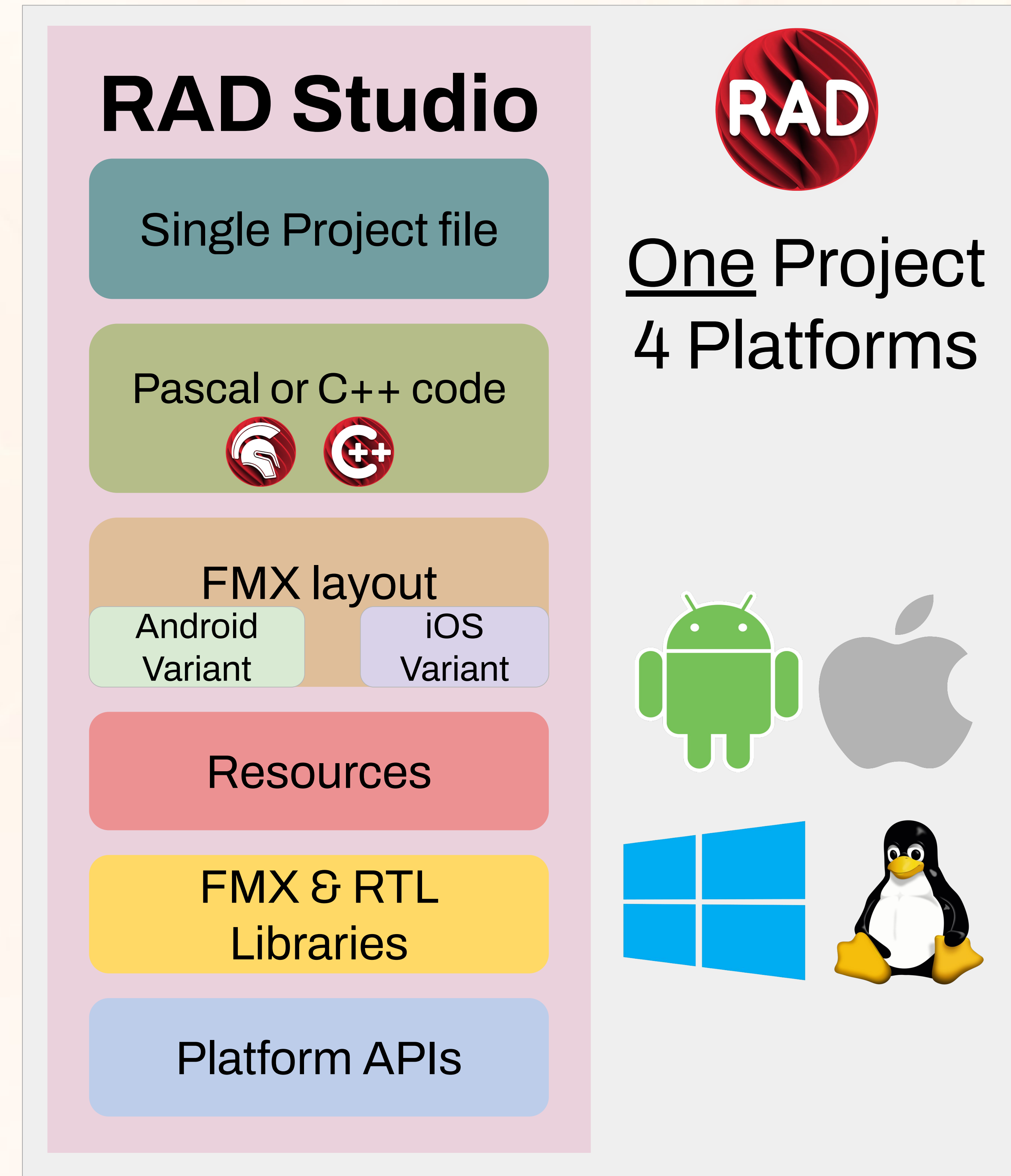


# Choosing your tooling

## Platform vendor tools

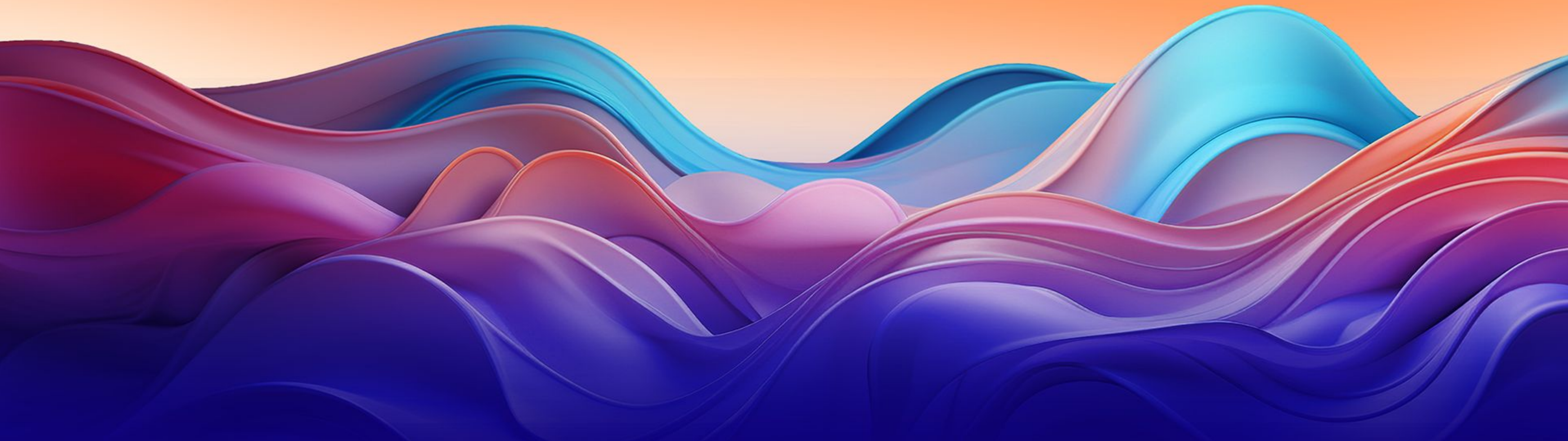


VS





# Creating the App





New App

Tab  
Controls

Multi-View

Data  
Module

Layouts

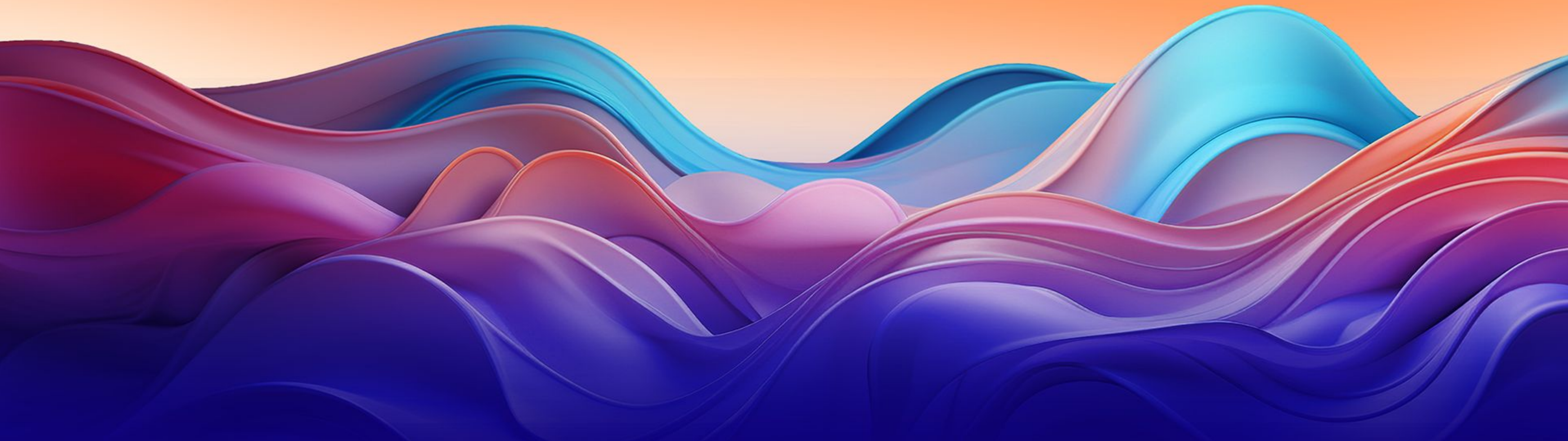
Live  
Bindings

Frames

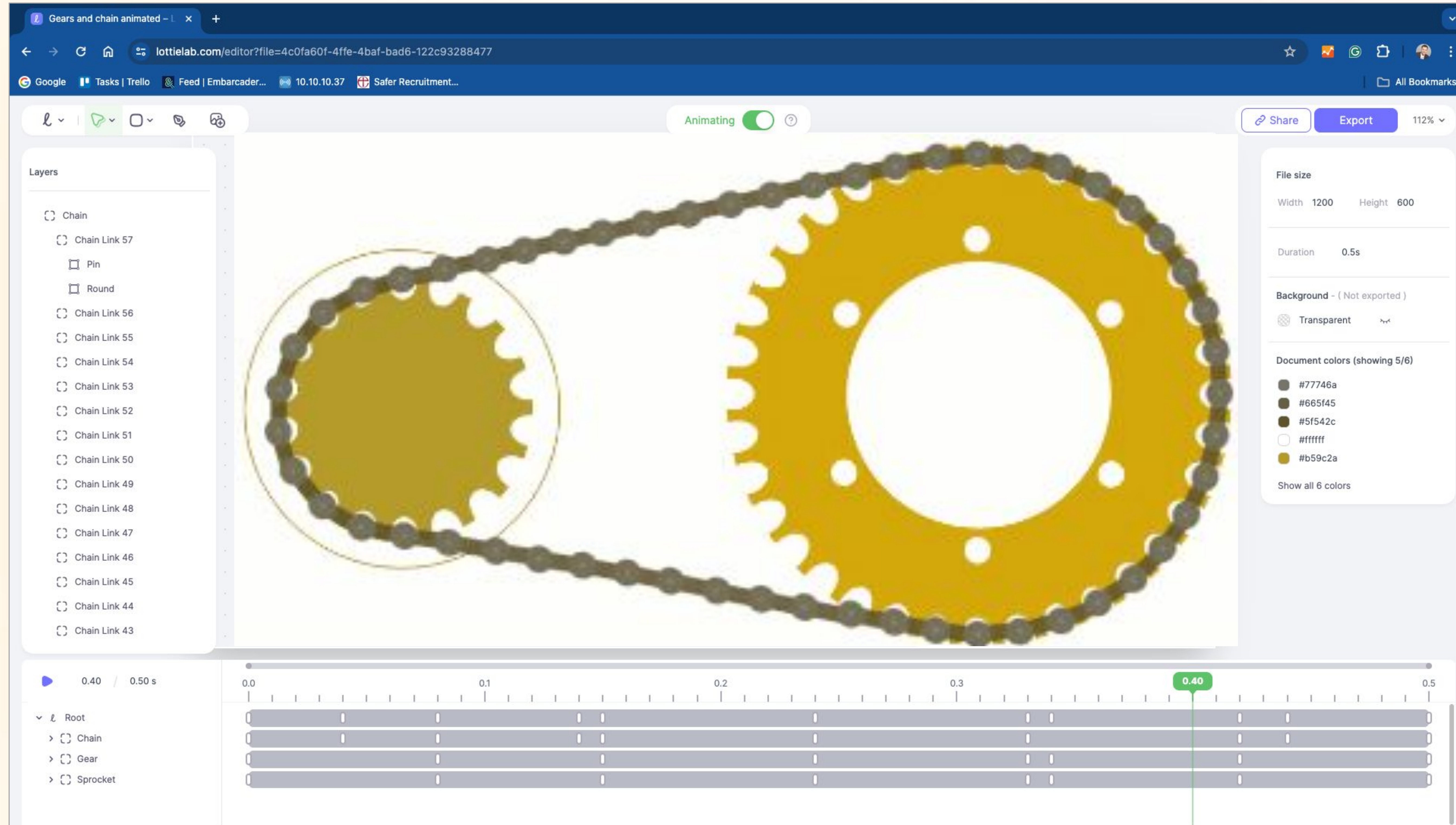
OnResize



# Adding Animation with Skia



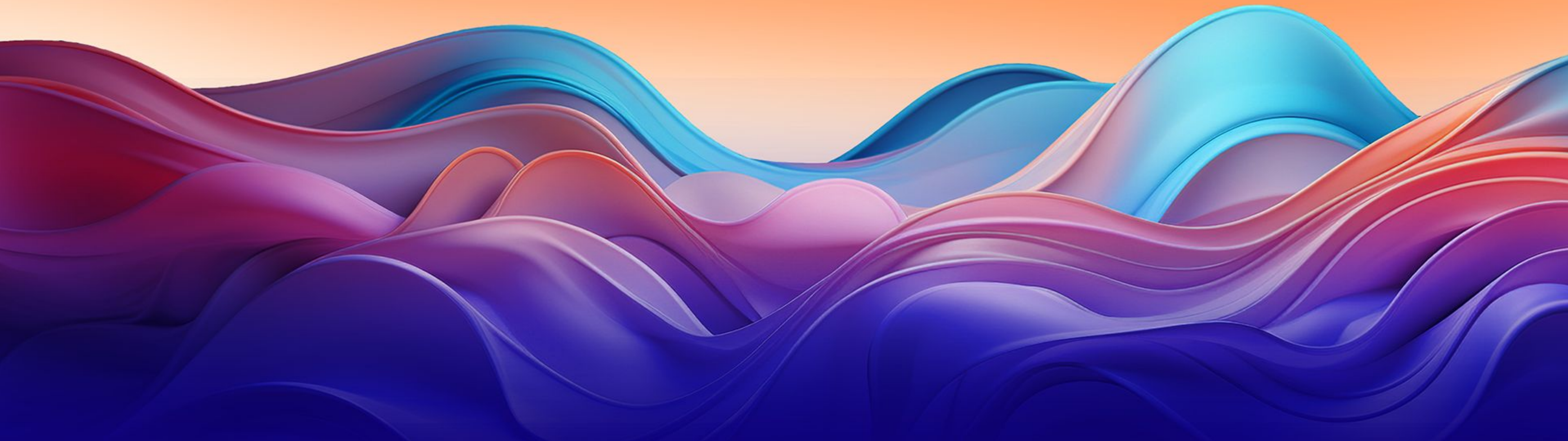




<https://www.lottielab.com/>



# Icons & App Store Prep





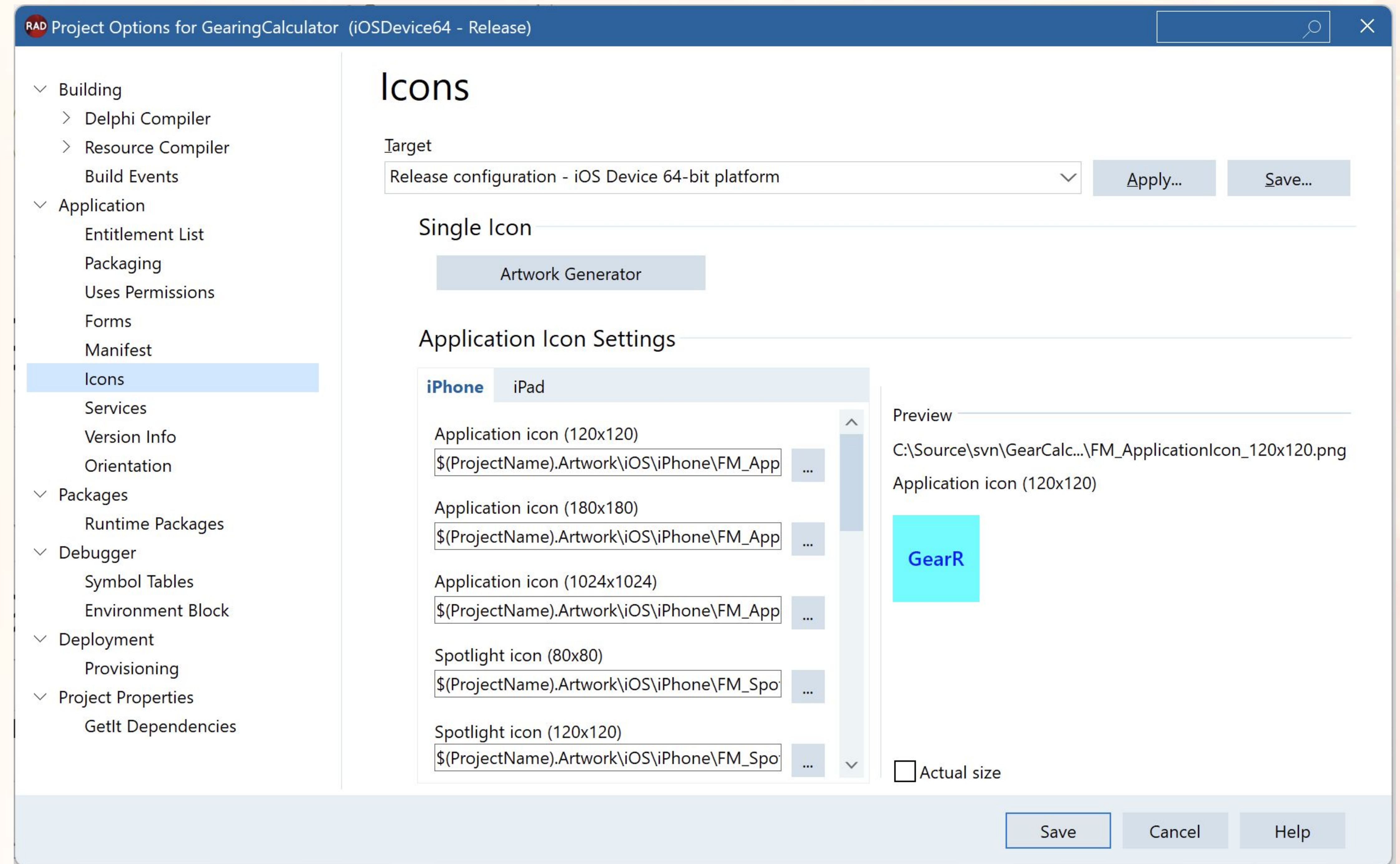
# Icons and Splash Screens

**Artwork Generator!!**

**All or Release Icons**

**iPhone and iPad**

**Separate for each Platform**





# Apple App Store Submission

Write  
Your App

Provisioning

Splash  
Image &  
Icons

Build for  
AppStore

Install  
PAServer

Version Info

Transporter



# Version Info

The image shows a browser window displaying the Apple Developer website's 'Certificates, Identifiers & Profiles' page. The 'Identifiers' section is active, showing a table of app identifiers. A blue arrow points from the 'Karting Gearing Ratios' entry in the table to the 'Version Info' tab in the RAD Studio Project Options dialog for the 'GearingCalculator' project. The dialog shows the 'Version Info' configuration for the 'Release' configuration of the 'iOSDevice64' target. The 'Include version information in project' checkbox is checked. The 'Module version number' is set to Major version 1, Minor version 0, and Build 6. The 'Build number options' are set to 'Auto increment build number'. A table of bundle identifiers is visible, with 'CFBundleName' highlighted.

NAME	IDENTIFIER
EMBT Conference App	uk.co.delphiaball.embt.conferenceapp
Hoop Crew	uk.co.delphiaball.basketballrefapp
Karting Gearing Ratios	uk.co.delphiaball.gearingratios
Karting Pitboard	uk.co.delphiaball.pitboard
Wildcard Profile	uk.co.delphiaball.*
XC Wildcard	*

**Project Options for GearingCalculator (iOSDevice64 - Release)**

**Version Info**

Target: Release configuration - iOS Device 64-bit platform

Include version information in project

Module version number

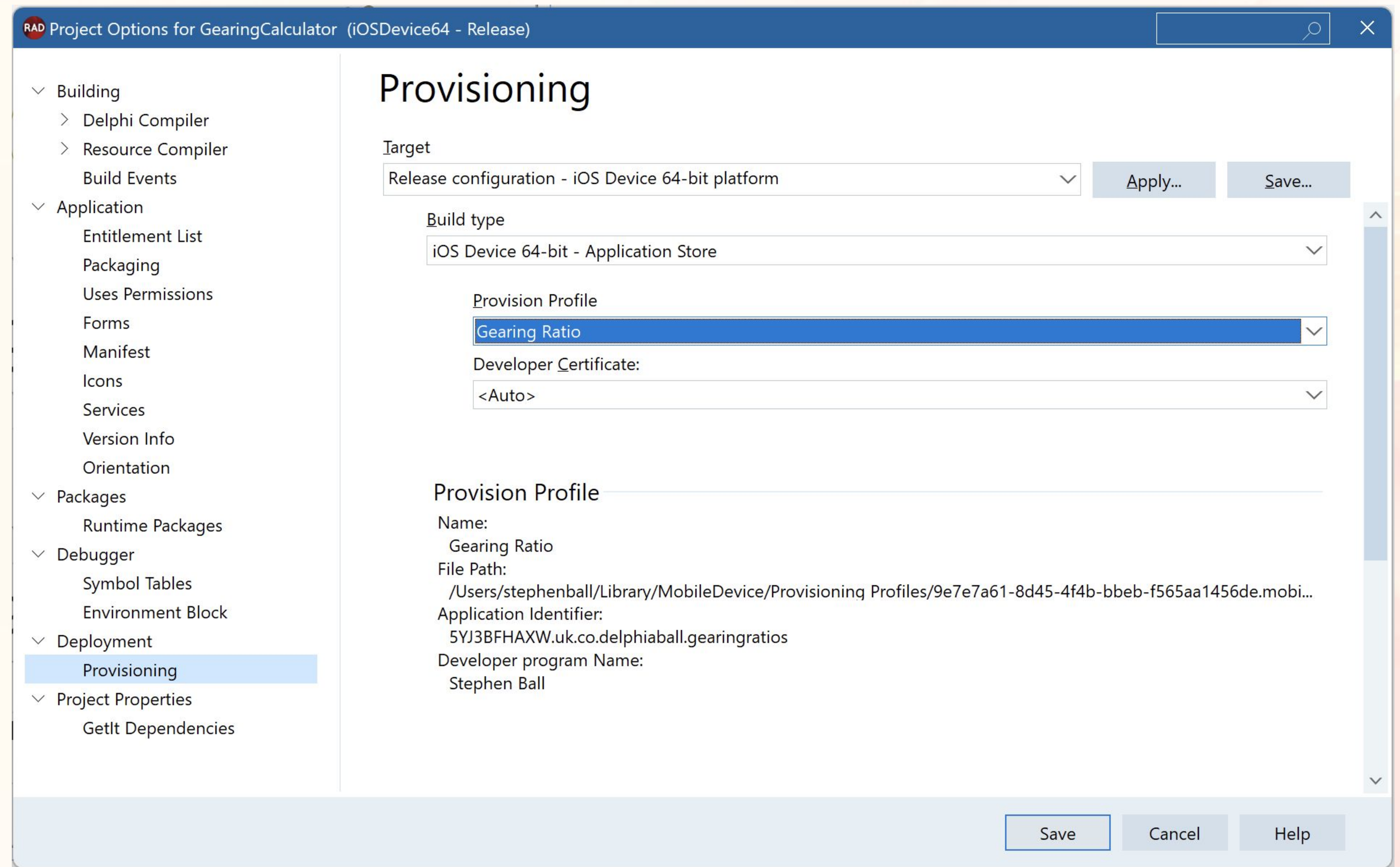
Major version: 1, Minor version: 0, Build: 6

Build number options: Auto increment build number

Key	Value
CFBundleName	Karting Gearing Ratios
CFBundleDevelopmentRegion	en
CFBundleDisplayName	Gearing Ratio
CFBundleIdentifier	uk.co.delphiaball.gearingratios
CFBundleInfoDictionaryVersion	7.1
CFBundleVersion	1.0.6
CFBundleShortVersionString	1.0.1
CFBundlePackageType	APPL
CFBundleSignature	????
LSRequiresiPhoneOS	true



# Provisioning





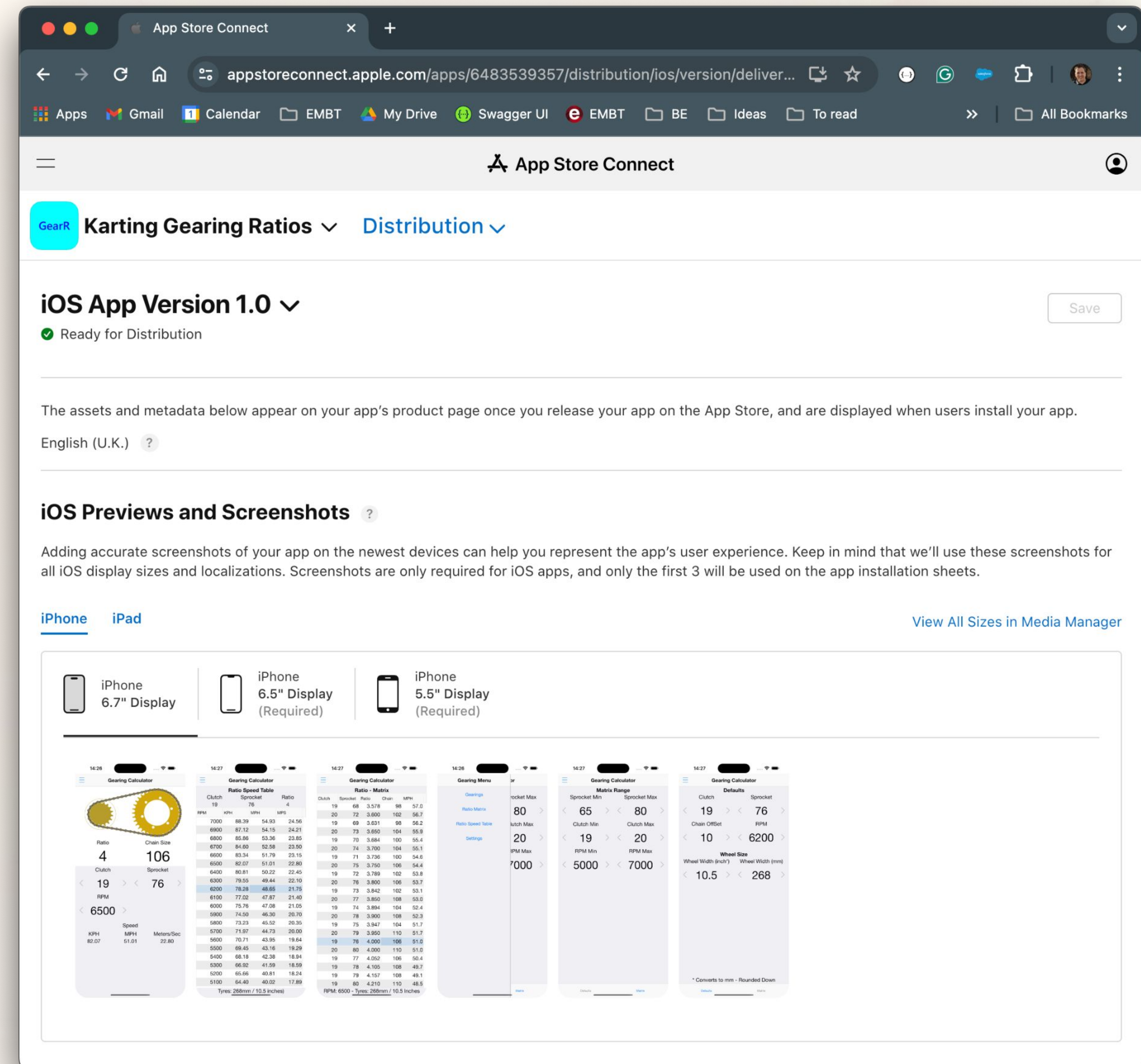
# Apple App Store Submission

## AppStore Connect

### Images for

- iPhone
- iPad

## Version Information



The screenshot shows the App Store Connect interface for the app 'Karting Gearing Ratios'. The version is 'iOS App Version 1.0', which is 'Ready for Distribution'. The interface includes sections for 'iOS Previews and Screenshots' and 'Media Manager'.

**iOS Previews and Screenshots**

Adding accurate screenshots of your app on the newest devices can help you represent the app's user experience. Keep in mind that we'll use these screenshots for all iOS display sizes and localizations. Screenshots are only required for iOS apps, and only the first 3 will be used on the app installation sheets.

**Media Manager**

View All Sizes in Media Manager

**iPhone 6.7" Display** | **iPhone 6.5" Display (Required)** | **iPhone 5.5" Display (Required)**

The screenshot displays several preview cards for different iPhone models, showing the app's interface on each device. The cards include details like 'Clutch', 'Sprocket', 'Ratio', 'Chain Size', 'RPM', and 'Speed'.



# No Mac? Use Mac In Cloud?

**Images are easiest from iOS Simulator  
Need M series Processor**

**Need to install**

- **xcode**
- **Older iOS (for Images of older iOS Devices)**

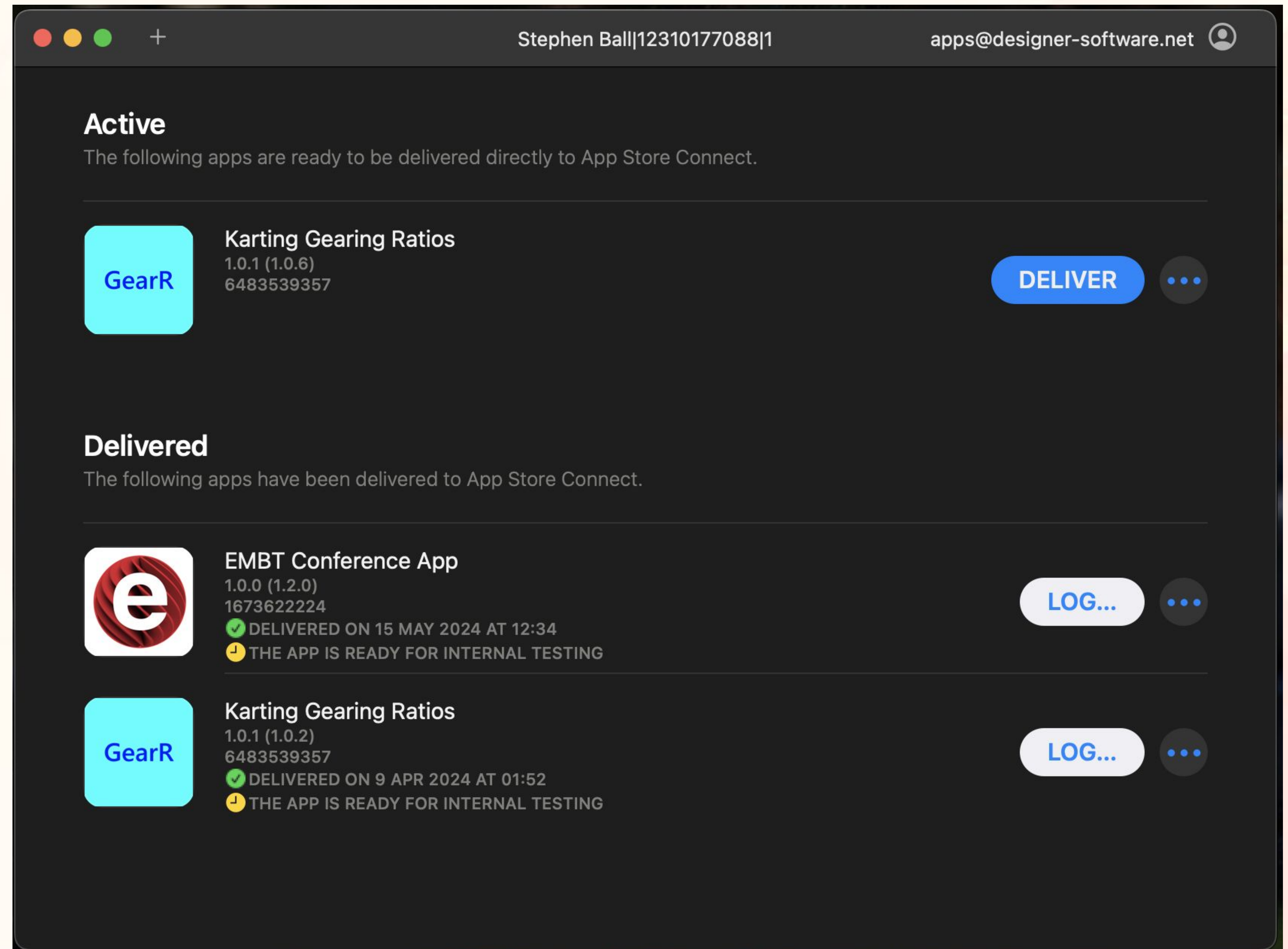
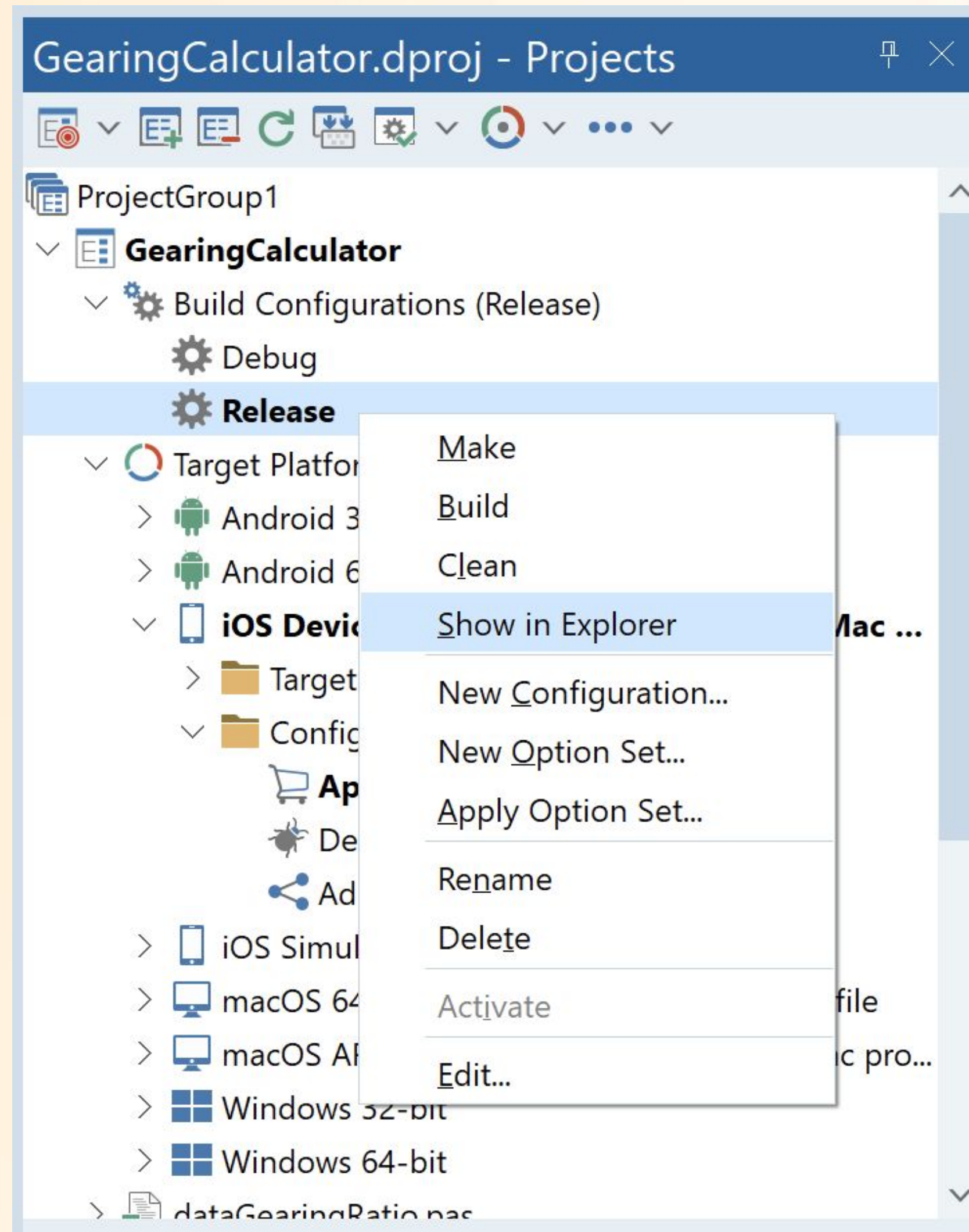
**or have a Draw of doom!!**

**Take images via xCode.**



# Transporter

## Upload IPA file





# Google Play Store Submission

Write  
Your App

Provisioning

Splash  
Image &  
Icons

Build for  
AppStore

Plug In  
Device

Version Info

Upload

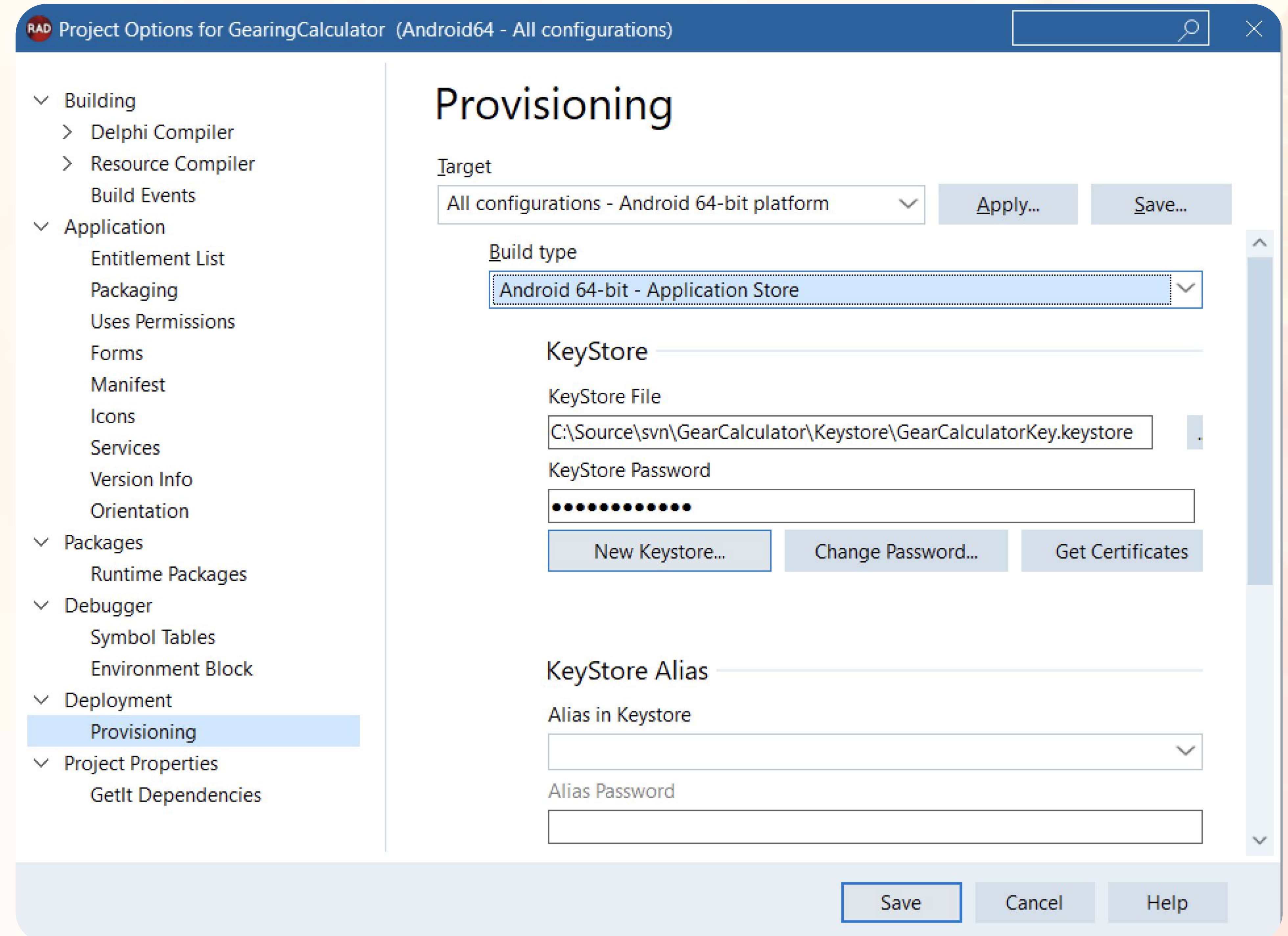
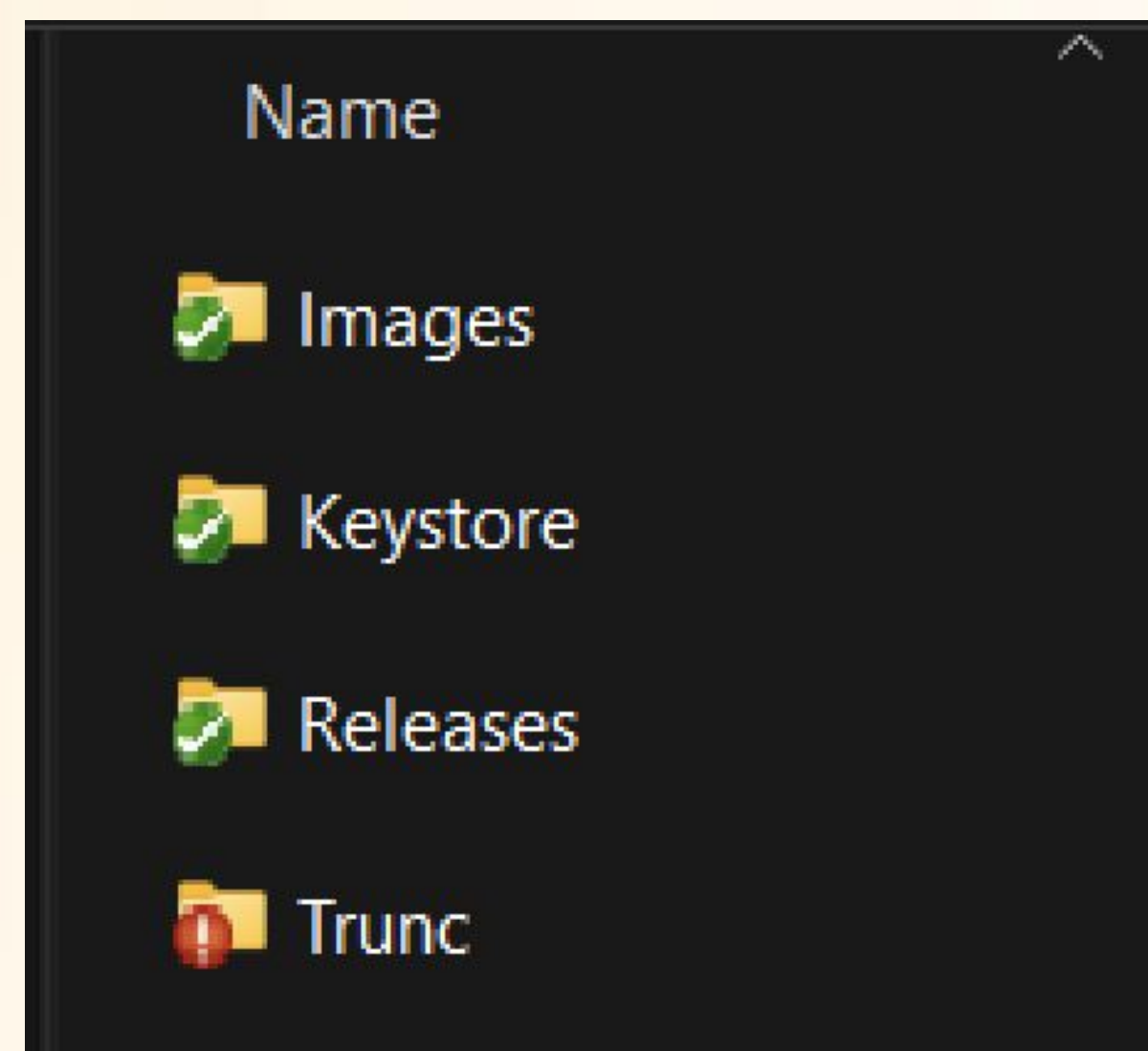


# Key Store - Self Signed

Really Easy to create your key

**BACKUP YOUR DETAILS**

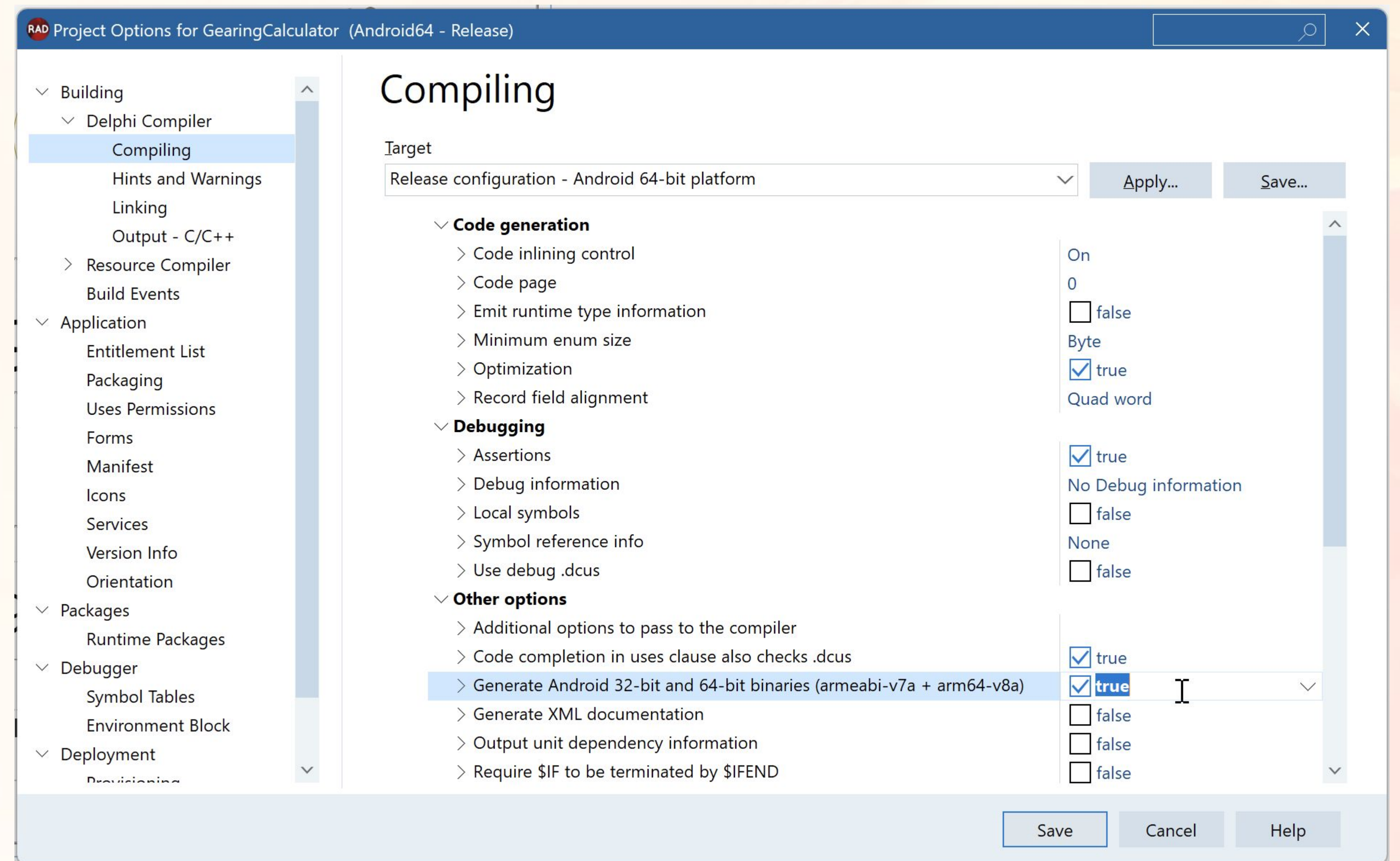
**Add to Version Control**





# Google Play Store Submission

Don't forget to enable Arm64+Arm32  
(For release build only)





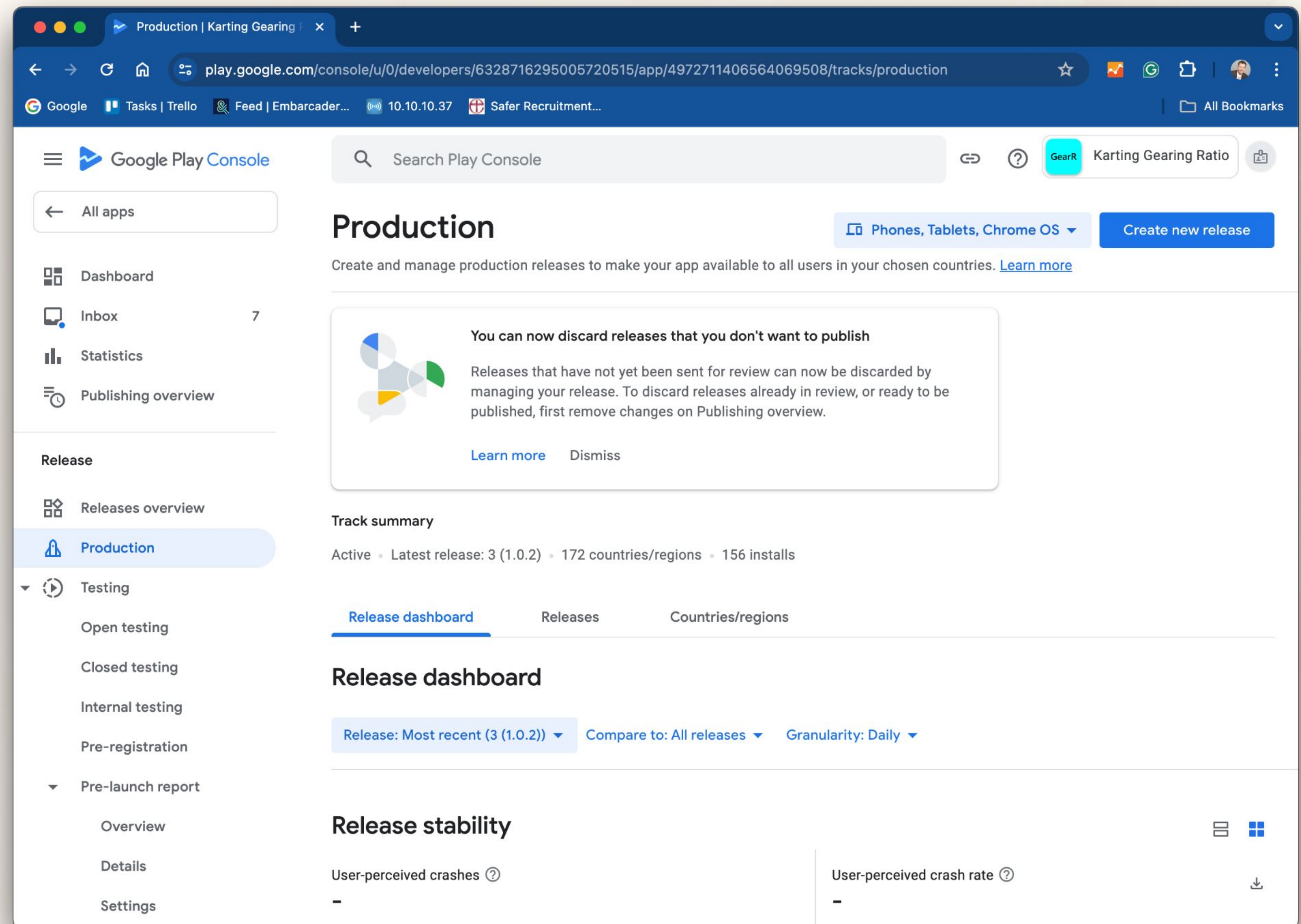
# Uploading To Google

One Time Cost for Account

Developer Console

“Create New release”

Testing > Production



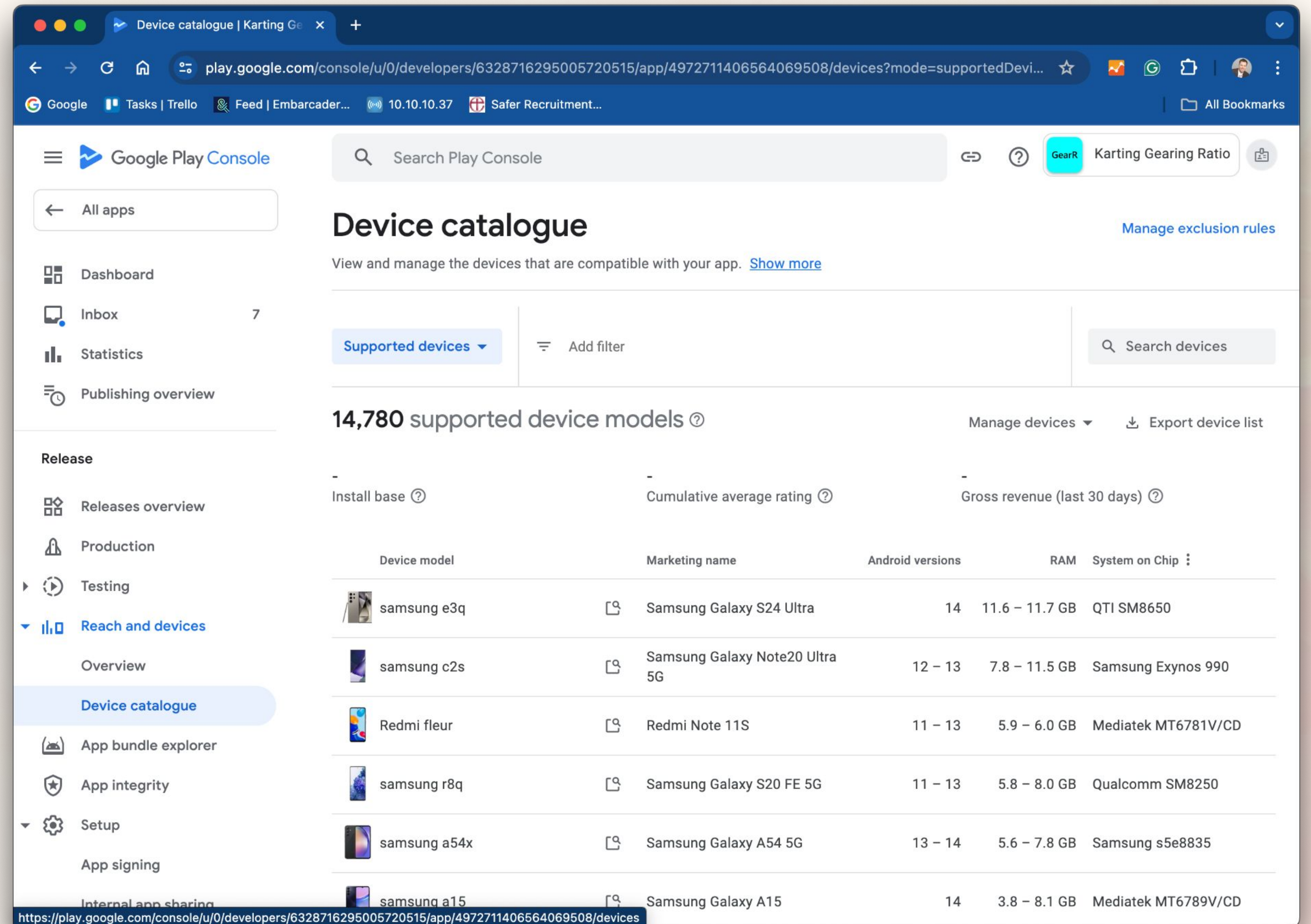
The screenshot shows the Google Play Console interface for the 'Production' track of the app 'Karting Gearing Ratio'. The page includes a navigation menu on the left with options like 'All apps', 'Dashboard', 'Inbox', 'Statistics', 'Publishing overview', 'Release', 'Releases overview', 'Production', 'Testing', 'Open testing', 'Closed testing', 'Internal testing', 'Pre-registration', 'Pre-launch report', 'Overview', 'Details', and 'Settings'. The main content area displays the 'Production' track summary, including a notification about discarding releases, a track summary showing 3 active releases (1.0.2) in 172 countries with 156 installs, and a 'Release dashboard' section with filters for 'Release: Most recent (3 (1.0.2))', 'Compare to: All releases', and 'Granularity: Daily'. The 'Release stability' section shows 'User-perceived crashes' and 'User-perceived crash rate' as '-'.



# Device Catalogue

## Search Devices

## See What's Supported

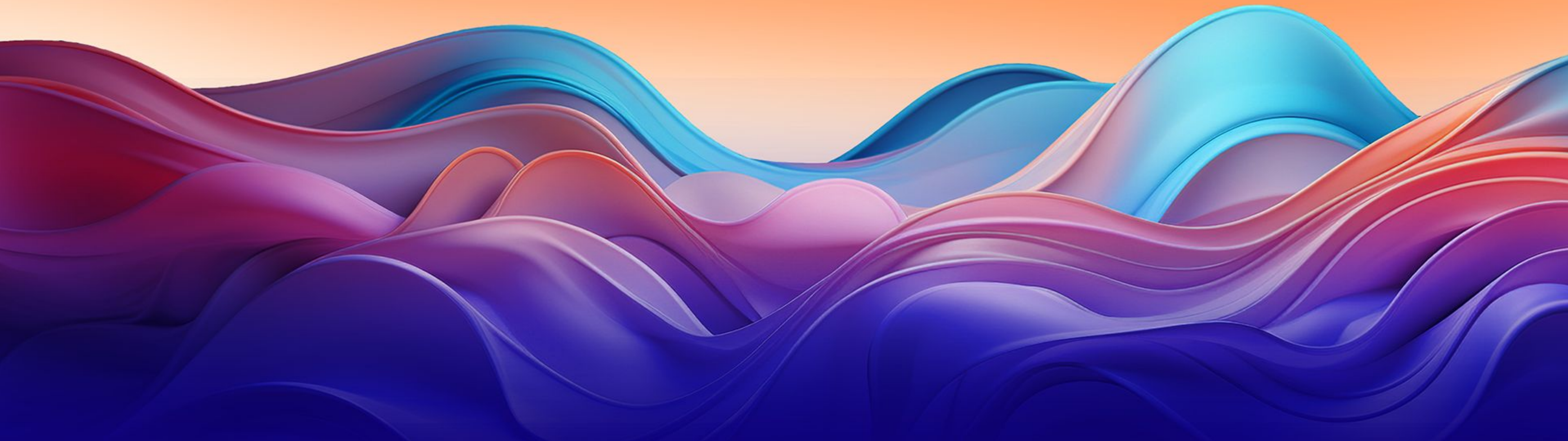


The screenshot displays the Google Play Console interface for the 'Device catalogue' section. The left sidebar shows navigation options like 'All apps', 'Dashboard', 'Inbox', 'Statistics', and 'Publishing overview'. The main content area shows '14,780 supported device models' with a table listing various devices. The table columns include 'Device model', 'Marketing name', 'Android versions', 'RAM', and 'System on Chip'.

Device model	Marketing name	Android versions	RAM	System on Chip
samsung e3q	Samsung Galaxy S24 Ultra	14	11.6 – 11.7 GB	QTI SM8650
samsung c2s	Samsung Galaxy Note20 Ultra 5G	12 – 13	7.8 – 11.5 GB	Samsung Exynos 990
Redmi fleur	Redmi Note 11S	11 – 13	5.9 – 6.0 GB	Mediatek MT6781V/CD
samsung r8q	Samsung Galaxy S20 FE 5G	11 – 13	5.8 – 8.0 GB	Qualcomm SM8250
samsung a54x	Samsung Galaxy A54 5G	13 – 14	5.6 – 7.8 GB	Samsung s5e8835
samsung a15	Samsung Galaxy A15	14	3.8 – 8.1 GB	Mediatek MT6789V/CD



**Sharing news of the app!**





# Facebook Groups Are Powerful!

Facebook post from the KARTBAY group. The post features a screenshot of a mobile application interface for calculating karting gearing ratios.

**KARTBAY**  
I've just created a new app to help understand gearing ratios better. What difference they make to MPH, meters per second etc based on wheel diameter, RPM, and gearing ratio. It can also help confirm based on clutches what ratios work out similar to help you find one for the size chains you have.  
The data works for all karts, just set your settings in the app.  
Video showing it in action: <https://www.youtube.com/watch?v=Nz0N5Gjn9ec>  
Google: <https://play.google.com/store/apps/details...>  
iOS: <https://apps.apple.com/.../karting-gearing.../id6483539357>

**Ratio - Matrix**

Clutch	Sprocket	Ratio	Chain	MPH
20	69	3.450	100	59.1
19	66	3.473	96	58.7
20	70	3.500	100	58.3
19	67	3.526	96	57.9
20	71	3.550	102	57.5
19	68	3.578	98	57.0
20	72	3.600	102	56.7
19	69	3.631	98	56.2
20	73	3.650	104	55.9
19	70	3.684	100	55.4
20	74	3.700	104	55.1

**Ratio Speed Table**

Clutch	Sprocket	Ratio
19	76	4

**Gearing Calculator**

Clutch: 19, Sprocket: 76, Chain Offset: 10, Wheel Size: 10.5, Wheel Width: 267

**Matrix Range**

Sprocket Min: 65, Sprocket Max: 80, Clutch Min: 19, Clutch Max: 20, RPM Min: 5000, RPM Max: 7000

£2 · BAGSHOT  
"Karting Gearing Ratio" App for Gearing Ratio / Speed / Chain Length calculation

Loz Boyington and 30 others · 28 comments

Recent media:

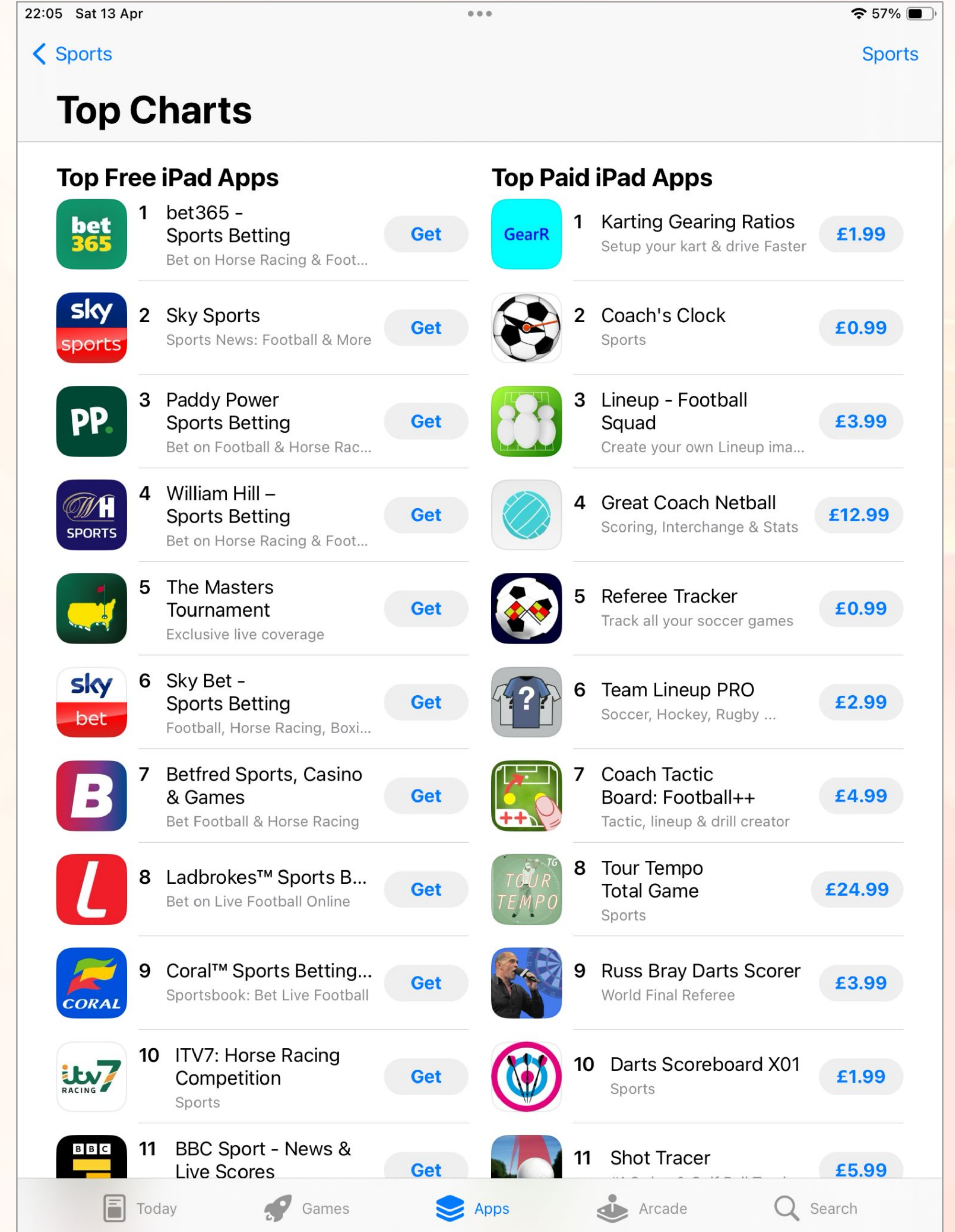
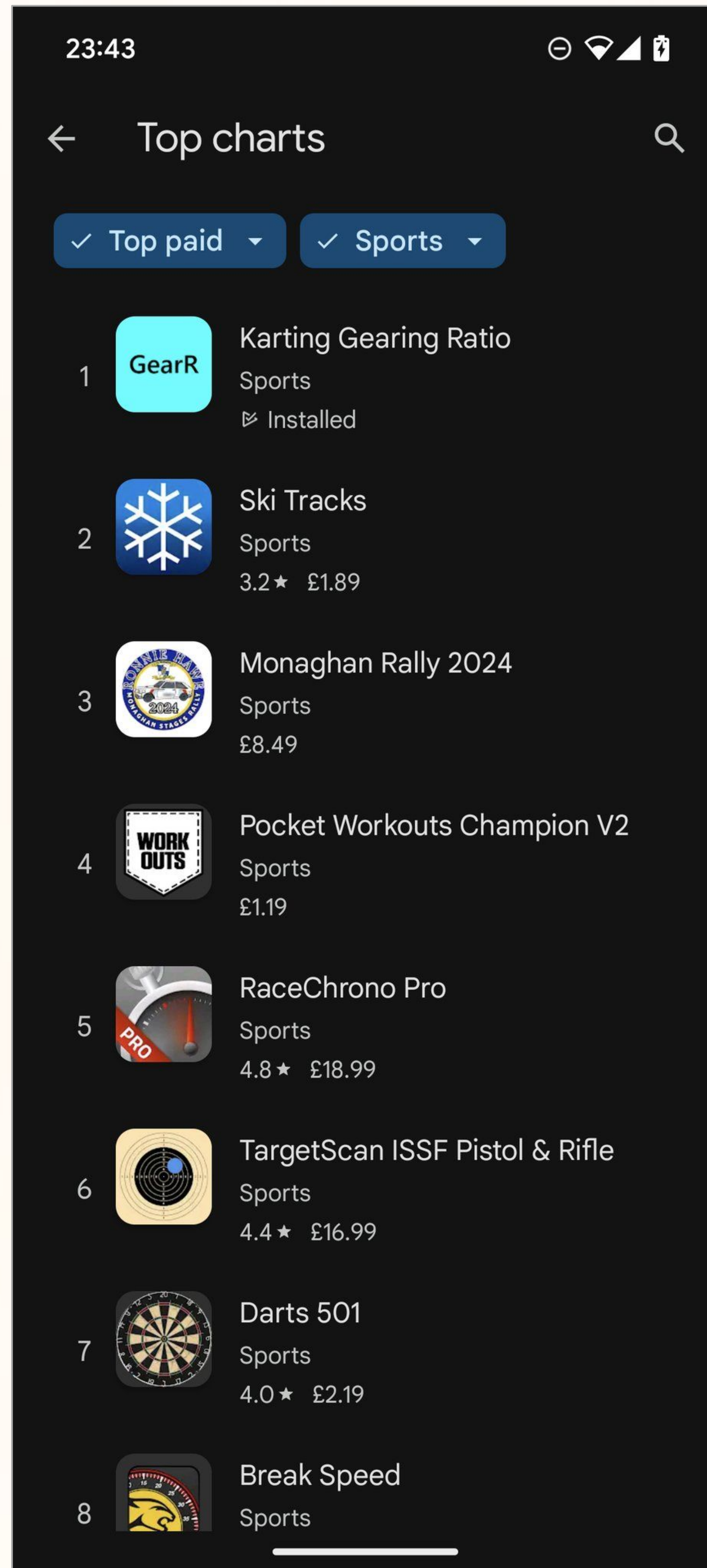


# First Weekend!

## #1 Paid Sports App

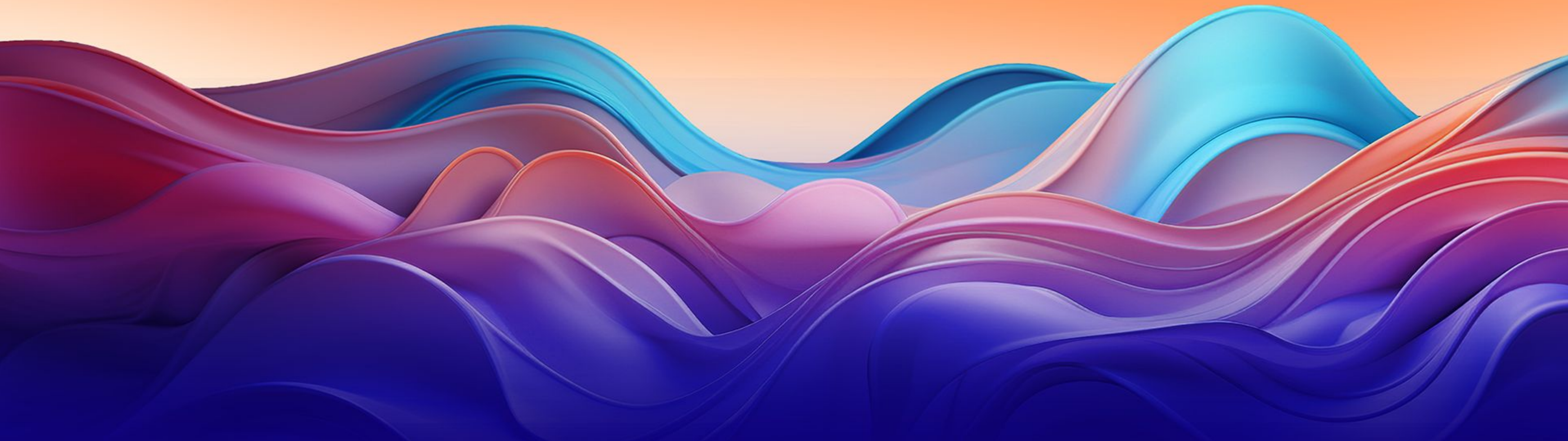
## Google Play

## Apple App Store





# Final Thoughts





# Take Aways!

## 1. Simple Clear Idea

- Apps don't need to be complex

## 2. iOS Sells More than Android

- 2.5x more on iOS

## 3. App Store Submission

- Icon & Splash Screen Images
  - i. So much easier now!
- App Runtime Images
  - i. Android is simple, if you have a device
  - ii. Apple - an M series device is worth it!
- First approvals take about 3 days

## 4. FMX & Skia work great cross platform!

- Easy to implement
- VCL Skills easily transfer to FMX
- Animations add desire & easy to work with thanks to Skia

## 5. Marketing of apps via Social Media Groups works!

- Find groups and tell them what you need them to know!
- Selling sites / Marketplace on facebook is really good.

## 6. Don't Tell the wife how much you have spent on karting!!

- *Honestly, some things are best left unsaid!*



**Q & A**

