

# Integrate and Test Google Play Billing

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# Overview

**Implement in-app purchase**  
**Test in-app purchase**

# Prerequisite

**Android mobile/tablet**

**Android Studio**

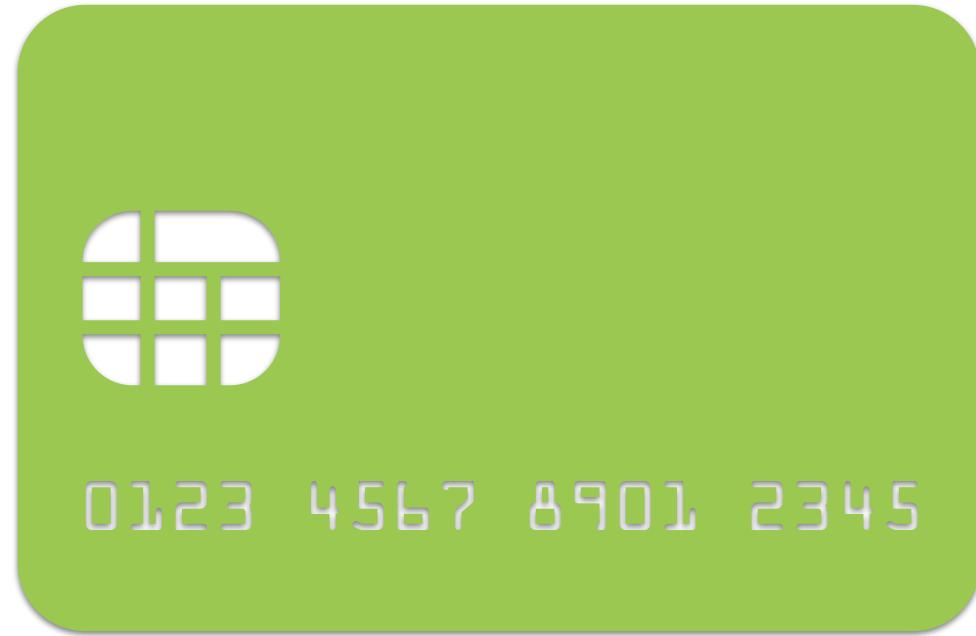
# Test Purchase



# License Tester



# Avoid Charging



# Rapidly Test Subscription

Production subscription period	Test subscription renewal
1 week	5 minutes
1 month	5 minutes
3 months	10 minutes
6 months	15 minutes
1 year	30 minutes

# Test Debug Build

The screenshot shows the Android Studio interface with the following details:

- Title Bar:** Counting [~/Documents/Pluralsight/code-demo/startupCode] - .../app/src/main/java/com/pluralsight/counting/db/purchase/PurchaseRecordRepository.kt [app]
- Toolbar:** Includes icons for Find, Run, Debug, TODO, Version Control, Build, Profiler, Logcat, Terminal, Event Log, and Layout Inspector.
- Project Structure:** Shows the project tree under the "Project" tab, with "purchase" selected in the "Structure" section.
- Code Editor:** Displays the `PurchaseRecordRepository.kt` file. The code implements a repository for purchase records using a CounterDatabase. It includes methods for inserting purchase records, acknowledging purchases, and updating purchase acknowledgments. The code uses Coroutines and Dispatchers.
- Debug Bar:** Shows "Debug: app" and a "Debugger" tab.
- Variables:** Shows a table with columns "Frames" and "Variables". The message "Variables are not available" is displayed.
- Bottom Navigation:** Includes tabs for Find, Run, Debug, TODO, Version Control, Build, Profiler, Logcat, Terminal, Event Log, and Layout Inspector.

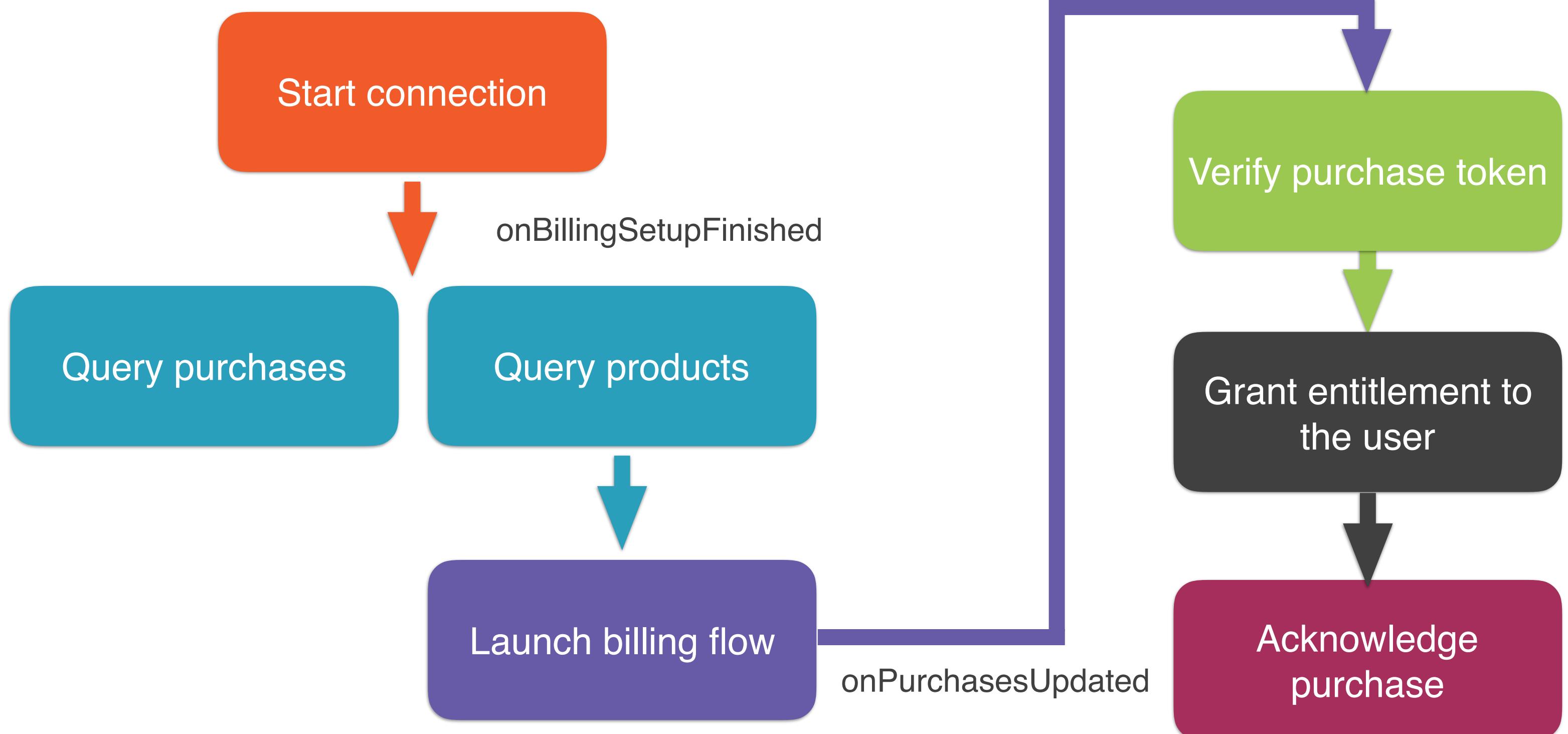
Demo

**Add license testers in Google Play Console**

## Prepare for Test

- Add internal testers**
- Join your test**
- Add license testers**
- Use a license tester's account**

# Purchase Flow



## Reason to Query Purchases

- Purchases can be made outside of the app**
- Multiple devices**
- Network issue during the purchase**

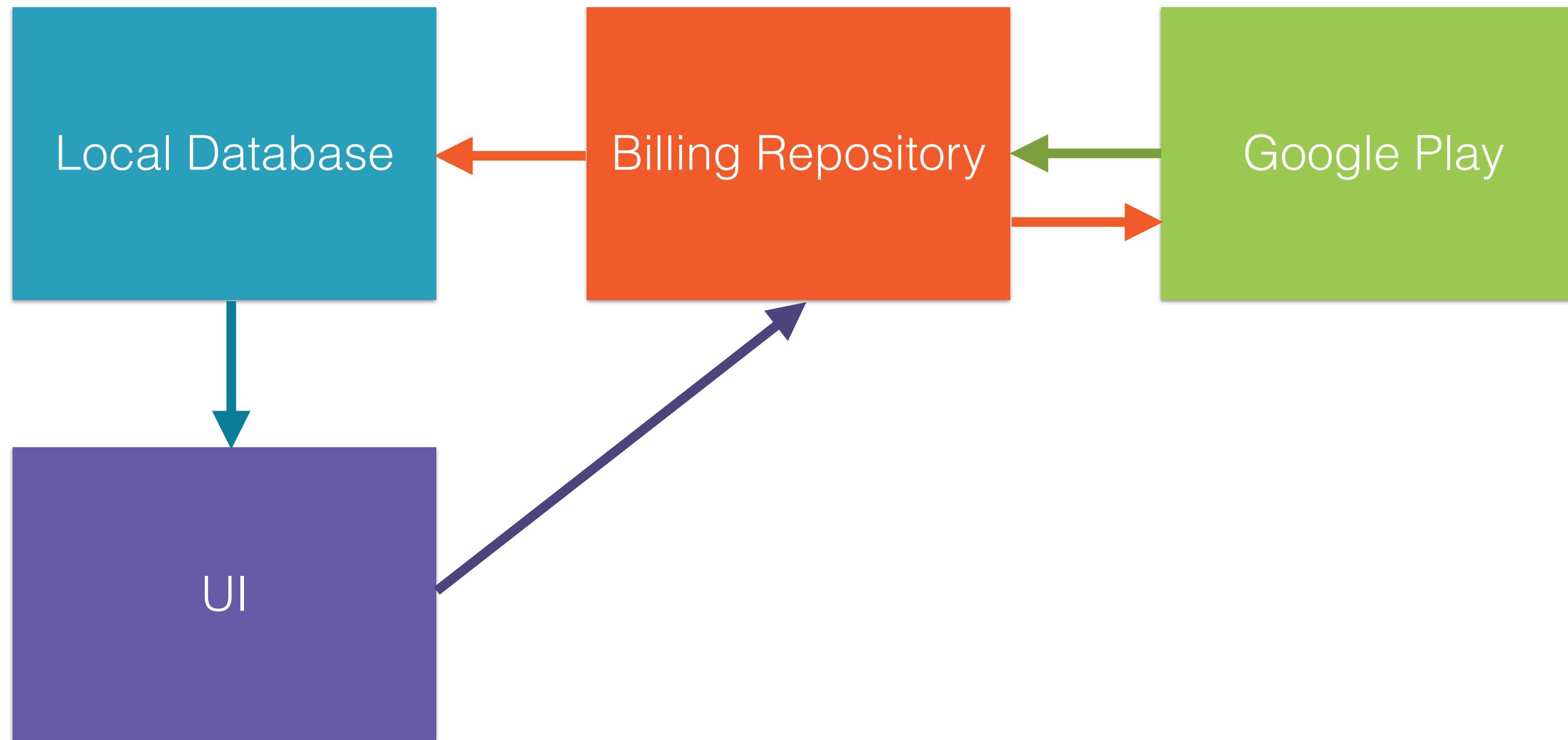
# Purchase

```
▶ oo purchase.signature = "USPB72ZvBcOOVRFnptS3ZZY05AUxHOUyrK4t4po1Vle0C7pzLHs"
▶ oo purchase.orderId = "GPA.3366-1774-9486-05325"
▶ oo purchase.purchaseToken = "dhlancpepcjkmjeffonbggkhw.AO-J1OwEJZiAXmdxN_tVLHw@"
▶   this = {BillingRepository@12203}
▶   purchasesList = {ArrayList@12227} size = 1
▶ p purchase = {Purchase@12228} "Purchase. Json: {"orderId":"GPA.3366-1774-9486-05325",
```

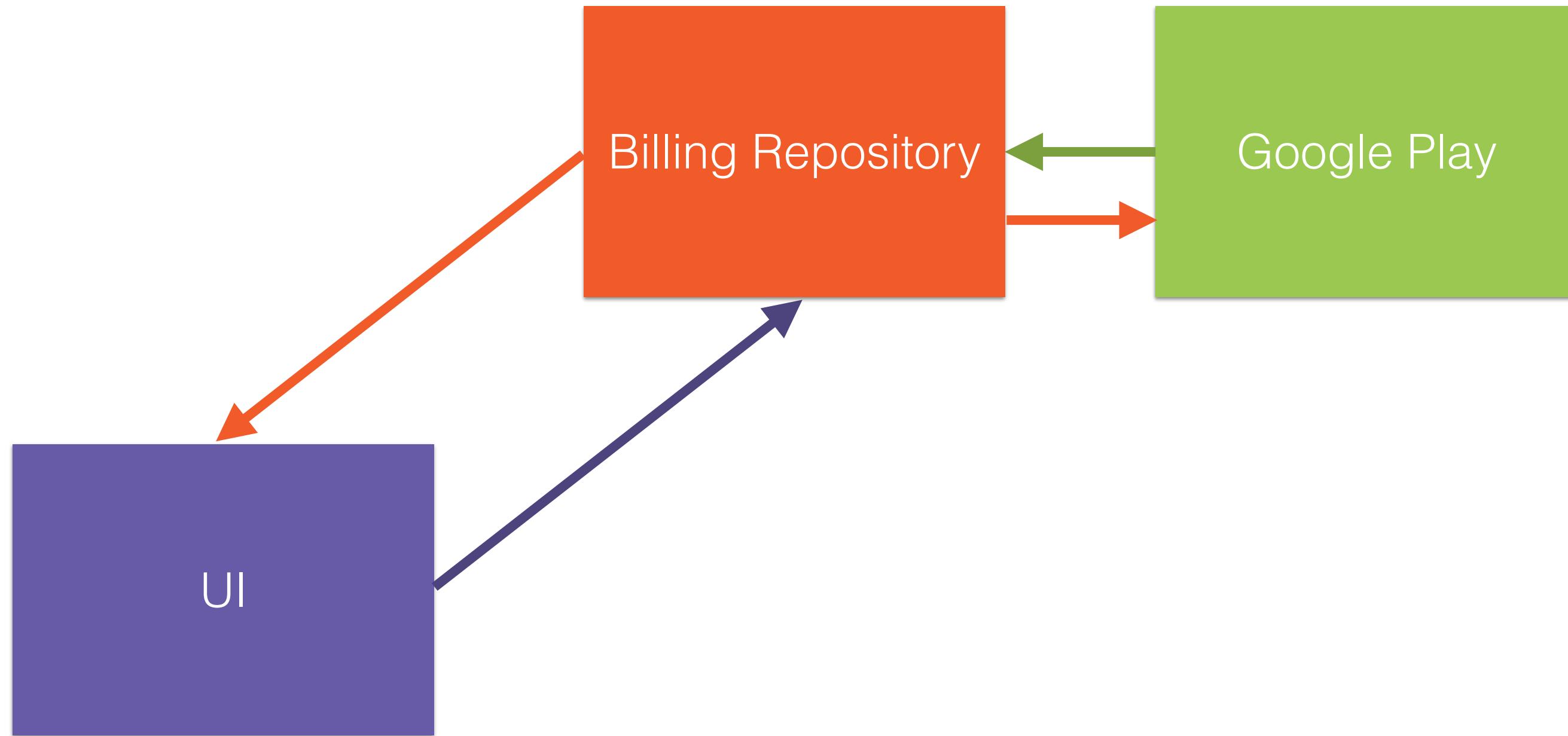
# After Purchase

Product	Action
<b>Consumable product</b>	consumeAsync()
<b>Non-consumable product</b>	acknowledgePurchase()
<b>Subscription</b>	acknowledgePurchase()

# Architecture



# Alternative Architecture



Demo

**Integrate Google Play Billing Library**

▶ ↗ Store performance

Quality

▶ 📄 Ratings and reviews

▶ 📈 Android vitals

Monetize

▼  Products

App pricing

In-app products

Subscriptions

 Promo codes

▶ 💰 Financial reports

 Monetization setup

## In-app products

Offer products for sale in your app for a one-off charge, like extra lives, or access to premium content. [Show more](#)

 Search products by name or ID Import  Export[Create product](#)

Product name	Product ID	Price	Last updated	Status	
Change to a timer	com.pluralsight.counting.tim	SEK 15.00	Sep 17, 2020	 Active	
Add a new counter	com.pluralsight.counting.co	SEK 10.00	Sep 17, 2020	 Active	

Show rows: 50 ▾ 1 - 2 of 2    

▶ ↗ Store performance

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Quality

▶ 📄 Ratings and reviews

▶ 📈 Android vitals

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Monetize▼  Products

App pricing

In-app products

**Subscriptions** Promo codes▶  Financial reports Monetization setup

Search Play Console



## Subscriptions

Subscriptions are in-app content or services that are billed to users on a recurring basis. [Learn more](#)

### Subscription settings

Account hold: Enabled for License Testers • Pause: Disabled • Subscription restore: Enabled • Free trial limit: One across all subscriptions

[Manage subscription settings →](#)

### Manage subscriptions

Search products by name or ID

**Create subscription**

Product name	Product ID	Price	Billing period	Last updated	Status	
Subscription	com.pluralsight.counting.subscri	SEK 20.00	Monthly	Sep 19, 2020	 Active	

Show rows: 50 ▾ 1 - 1 of 1    

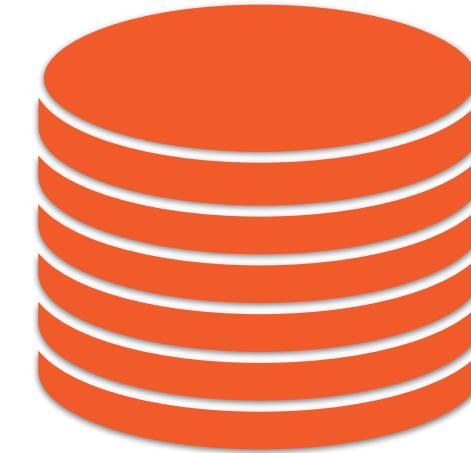
Reminder

**Purchases must be acknowledged within 3 days**

Demo

**Purchase flow in the demo app**

# After Consumption



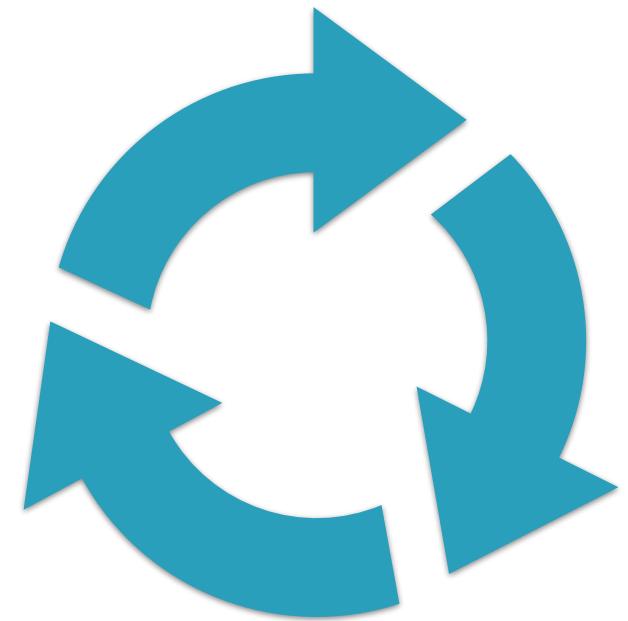
Consumable One-time Product

# After Acknowledgement



Non-consumable One-time Product

# Subscription Lifecycle



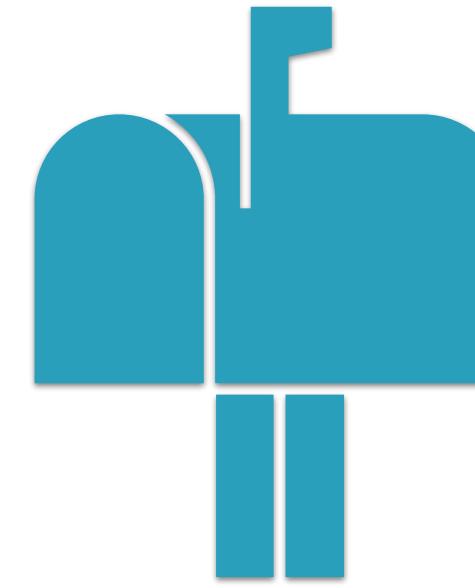
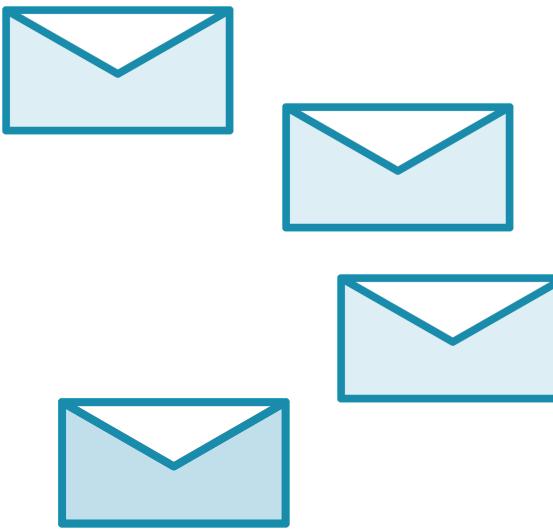
# Users Might Want to Change Subscriptions

Pause

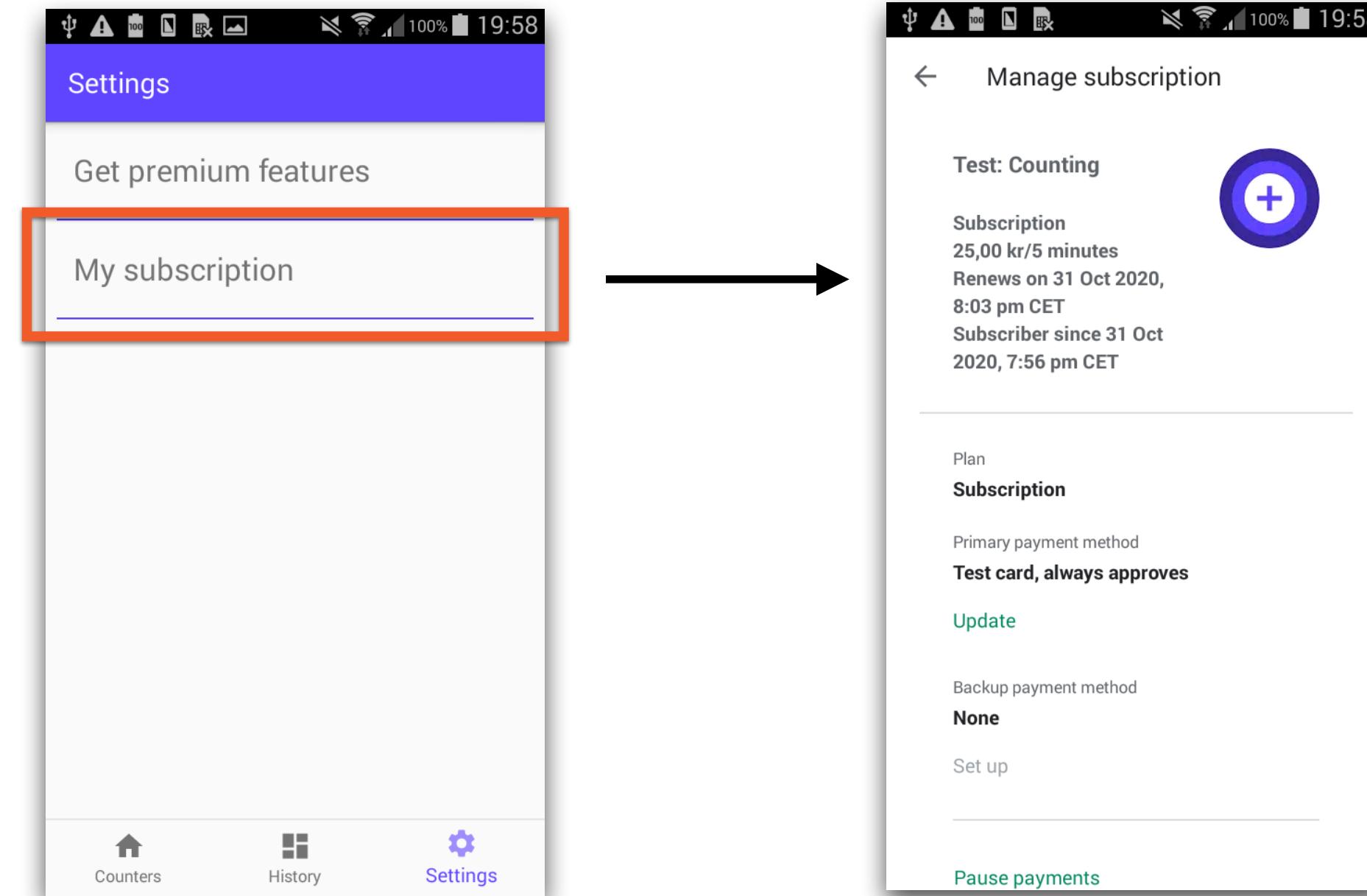
Cancel

Resubscribe

# Cumbersome Support Work

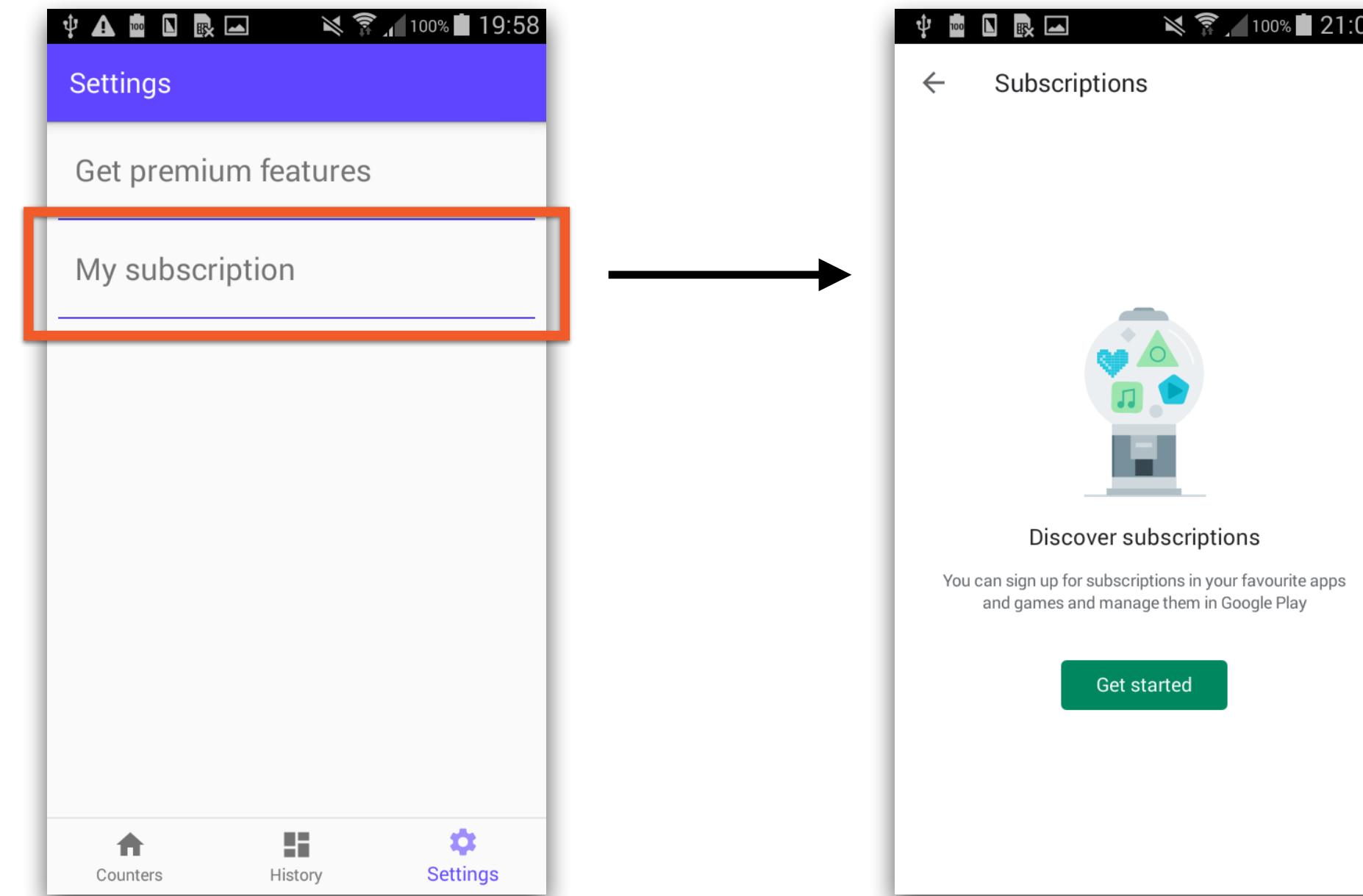


# Show Subscription for Users with Active Subscription



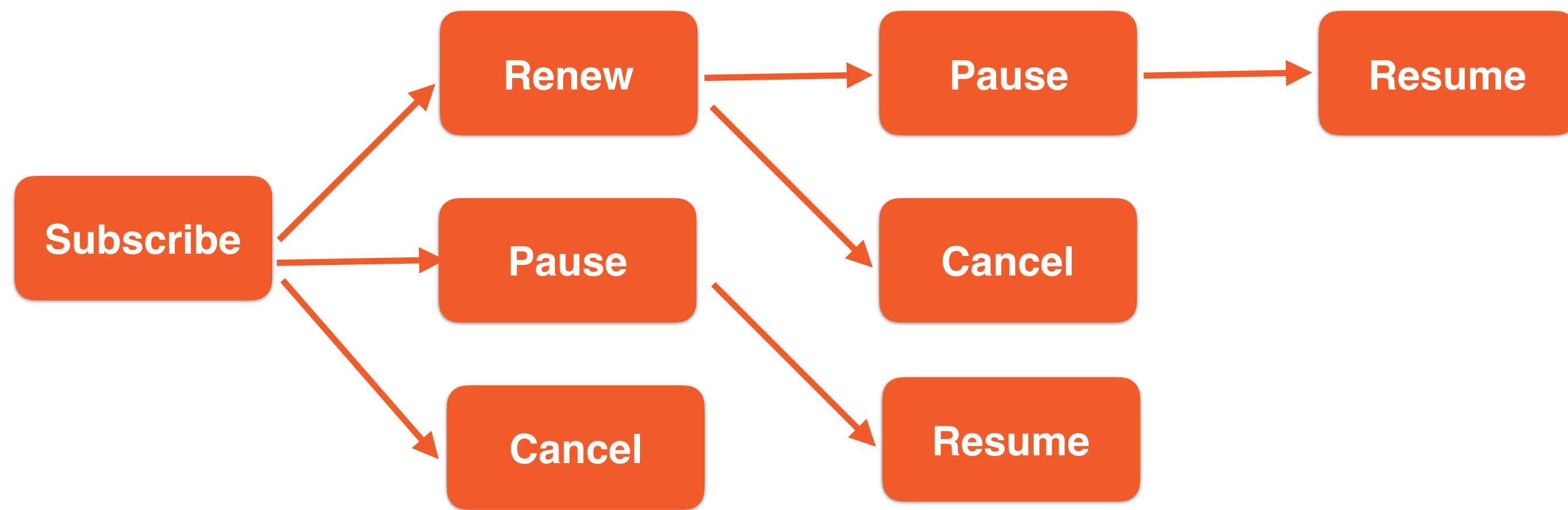
<https://play.google.com/store/account/subscriptions?sku=your-sub-product-id&package=your-app-package>

# Show Subscription for Users without Active Subscription



<https://play.google.com/store/account/subscriptions>

# Subscription Lifecycle



# Happy Case: Subscription is Active Forever

December 2020						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
\$ 30 	1 Dec 	2 	3 	4 	5 	6 
\$ 7 	8 	9 	10 	11 	12 	13 
\$ 14 	15 	16 	17 	18 	19 	20 
21	22	23	24	25	26	27
28	29	30	31	1 Jan	2	3

# Configure Pause in Google Play Console

## Subscription settings

Account hold ⓘ

Enabled for License Testers ▾

Make sure you meet implementation requirements before enabling this feature. [Learn more](#)

Pause ⓘ

Enabled ▾

Make sure you meet implementation requirements before enabling this feature. [Learn more](#)

Subscription restore

Enabled ▾

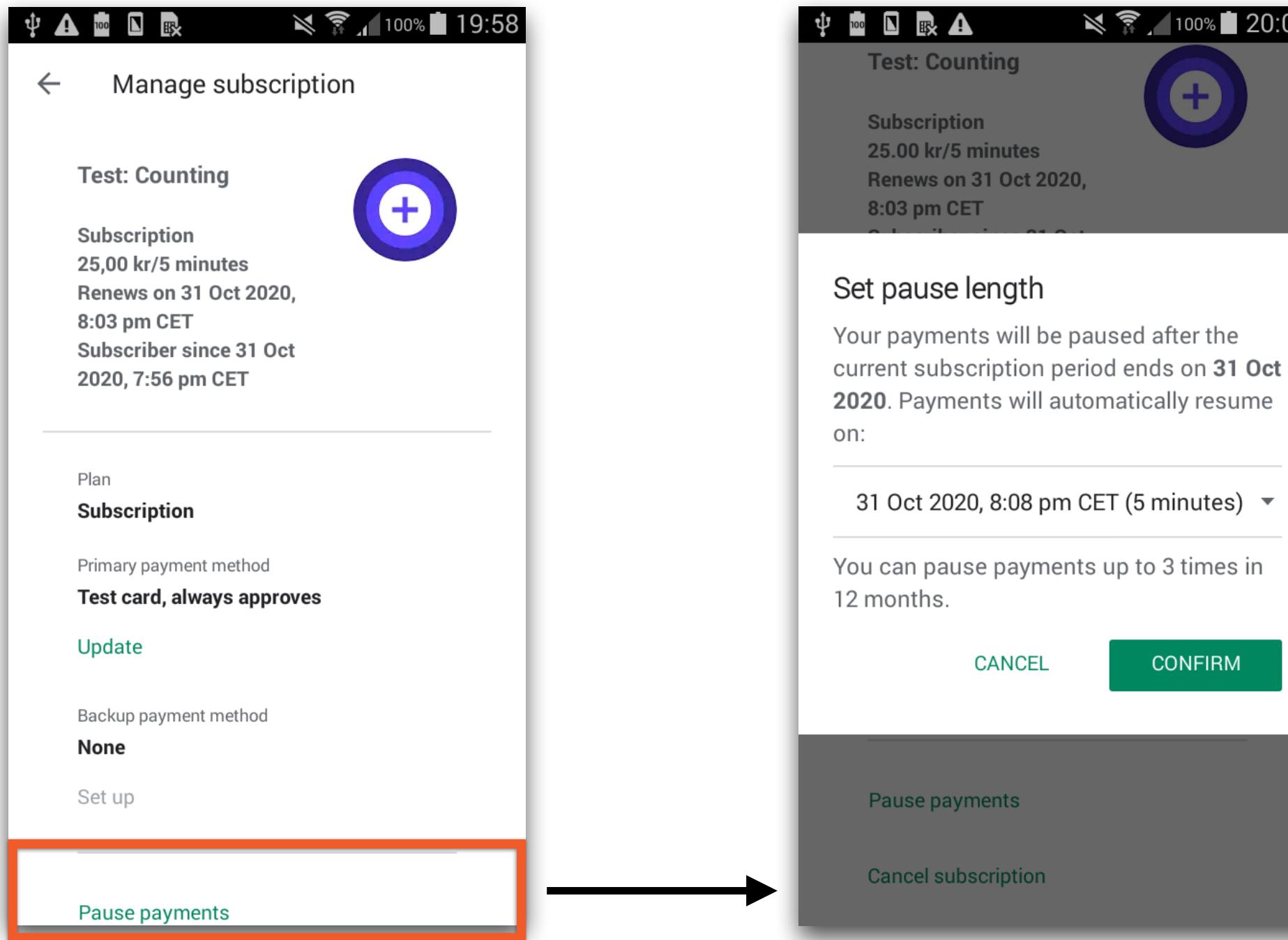
Make sure you meet implementation requirements before enabling this feature. [Learn more](#)

Free trial limit

One across all subscriptions ▾

Whether users are able to get one free trial per subscription, or one free trial across all subscriptions in your app.

# Pause Subscription in Play Store



# Pause -> Resume

December 2020						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
\$ 30 <b>Paused</b>	1 Dec X	2 X	3 	4	5	6
7 X	8 X	9 X	10 X	11 X	12 X	13 X
14 \$	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1 Jan	2	3

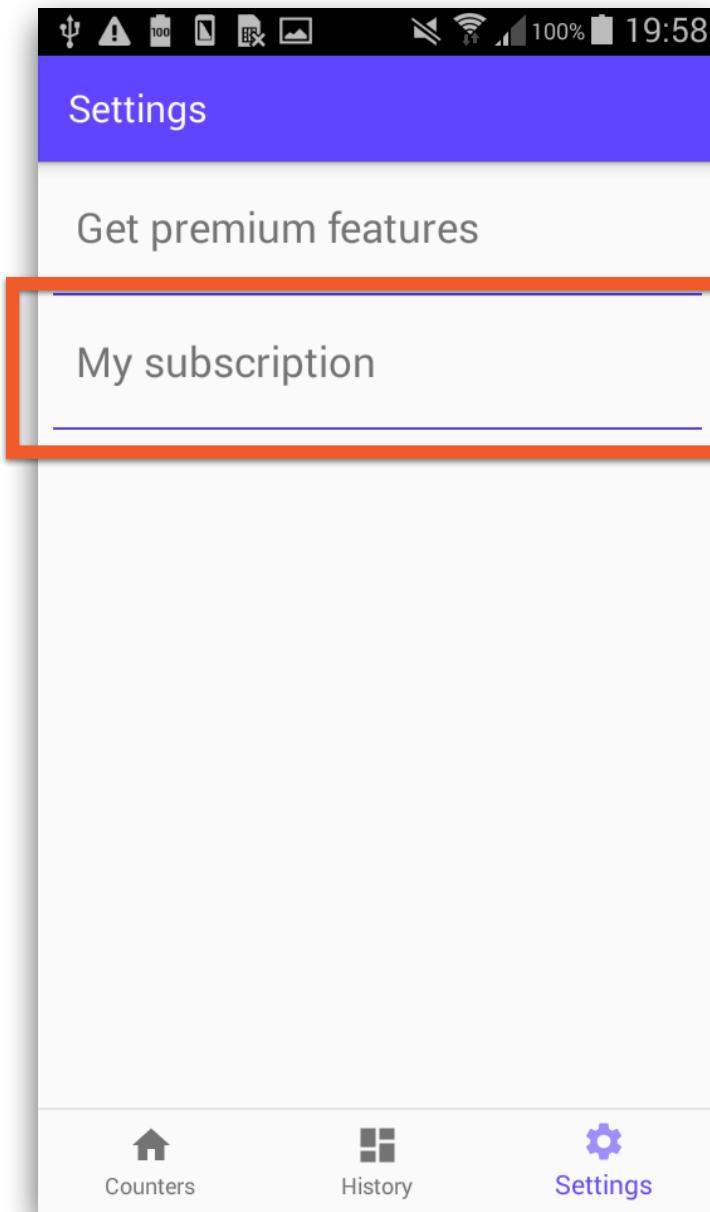
# Pause -> Resume

December 2020						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
\$ 30	1 Dec	2	3	4	5	6
Paused	X 7	X 8	X 9	X 10	X 11	\$ 12
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1 Jan	2	3

# Pause -> Account Hold

December 2020						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
\$ 30 <b>Paused</b>	1 Dec X 7	2 X 8	3 X 9	4 X 10	5 X 11	6 X 12
	14 X 21	15 X 22	16 X 23	17 X 24	18 X 25	19 X 26
	28	29	30	31	1 Jan	2

# Supporting Account Hold



**Block access to your content**

**Handle**

- Cancellation
- Restoration
- Repurchase
- Provide message on how to fix payment
- Link to Google Play Subscription Settings

**Required by Google**

# Cancel Subscription

Mon	Tue	Wed	Thu	Fri	Sat	Sun
30	\$ 1 Dec 	2 	3 	4 	5 	6 
7 	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1 Jan	2	3

# Grace Period

**Subscription**

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## Subscription options

Free trial ⓘ

Enabled

3 days

Must be at least 3 days. At the end of the free trial, users will be charged your introductory price (if you have one), or your regular price.

Introductory price ⓘ

None

Grace period ⓘ

None

3 days

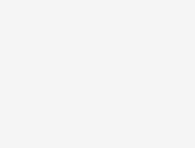
7 days

14 days

30 days

Resubscribe ⓘ

# Grace Period

December 2020						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
\$ 	30 	1 Dec 	2 	3 	4 	5 
 ? 0123 4567 8901 2345 	7 	 ? 0123 4567 8901 2345 	8 	 ? 0123 4567 8901 2345 	9 	10
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1 Jan	2	3

# Purchase Json Returned by queryPurchases()

```
{  
    "orderId": "GPA.3387-5020-0460-03153",  
    "packageName": "com.pluralsight.counting",  
    "productId": "com.pluralsight.counting.subscription",  
    "purchaseTime": 1604061440325,  
    "purchaseState": 0,  
    "purchaseToken": "bakcaeghIldamppccpknanhp.AO-J1OzyRMCQgXTAXwxYjKJ4rR7TYvLFjTn-P8xUkUr18PugHZyq-  
    ggEnIJGR9TeUu_yygAQkfrkHSyGrHB7gMFzEeo9XtKzXXnhOdQ5fdMPYAW-  
    qQWvm7c",  
    "autoRenewing": true,  
    "acknowledged": false  
}
```

# Subscription State

<b>Subscription state</b>	<b>Is returned in queryPurchases</b>	<b>Autorenewing</b>	<b>Has access to the subscription</b>
Active	Yes	TRUE	Yes
Expired	No	N/A	No
In grace period	Yes	TRUE	Yes
Paused	No	N/A	No
On hold	No	N/A	No
Canceled	Yes	FALSE	Yes

# Summary

## **Test with license testers**

- Test card
- Rapidly test subscription

## **Implement in-app purchase in code**

- Query purchases
- Query products
- Purchase flow
- Acknowledge/consume products

## **Subscription lifecycle**

- Users' behaviours change subscription states
- Handle subscription states