

Google Pay

Overview

\$2.3T

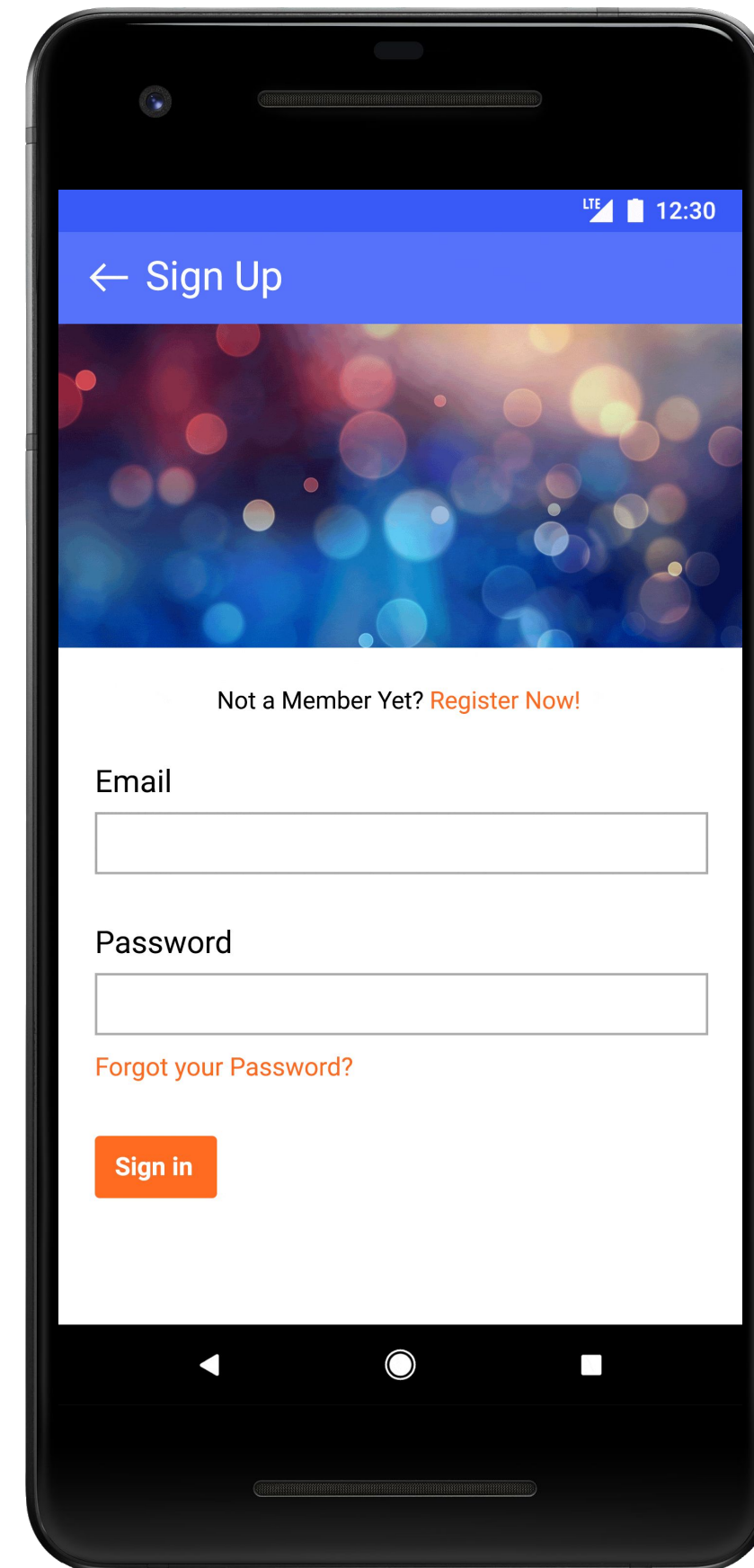
2017 Global e-commerce retail sales

A close-up photograph of a person's hands typing on a laptop keyboard. The image is overlaid with a semi-transparent dark brown filter. The text is centered in the middle of the image.

**But online conversion
is still a big problem**

28%

of cart abandonments
due to “too long/complicated
checkout process”



Source: Baymard Institute:
<https://baymard.com/lists/cart-abandonment-rate>

A woman with dark hair tied back, wearing a dark red sweater, is shown in profile from the chest up. She is looking down at a blue smartphone held in her hands. The background is a blurred city street with buildings and a traffic light showing red and blue lights. The lighting is soft, suggesting late afternoon or early morning.

Pay everywhere with your
Google account





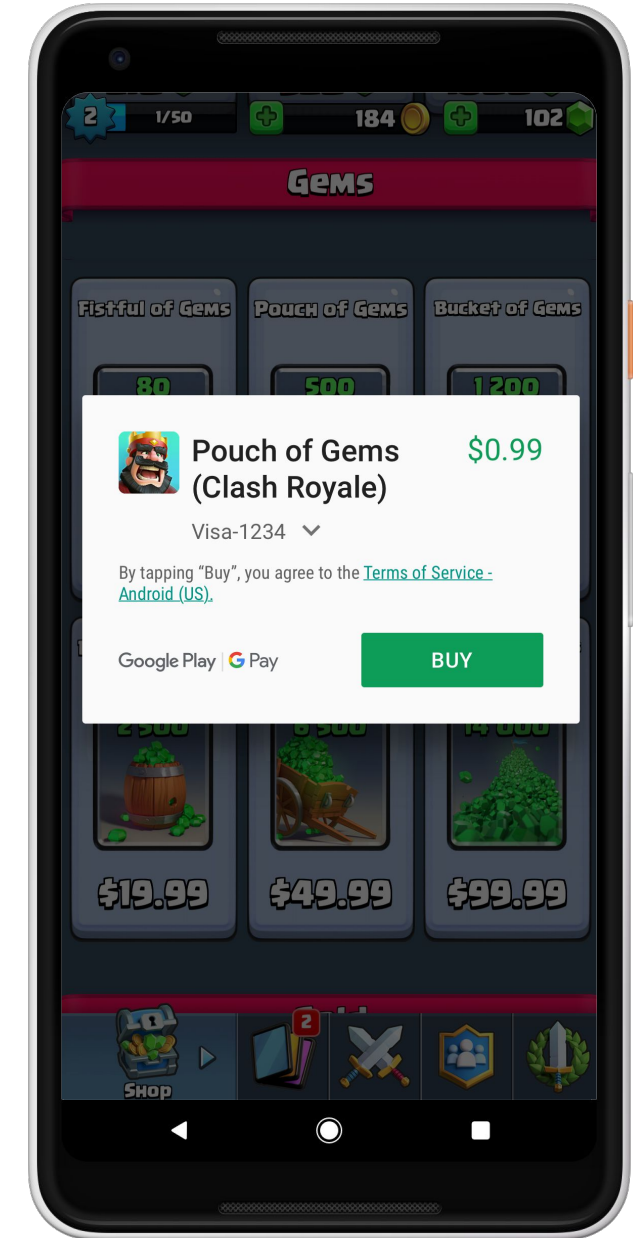
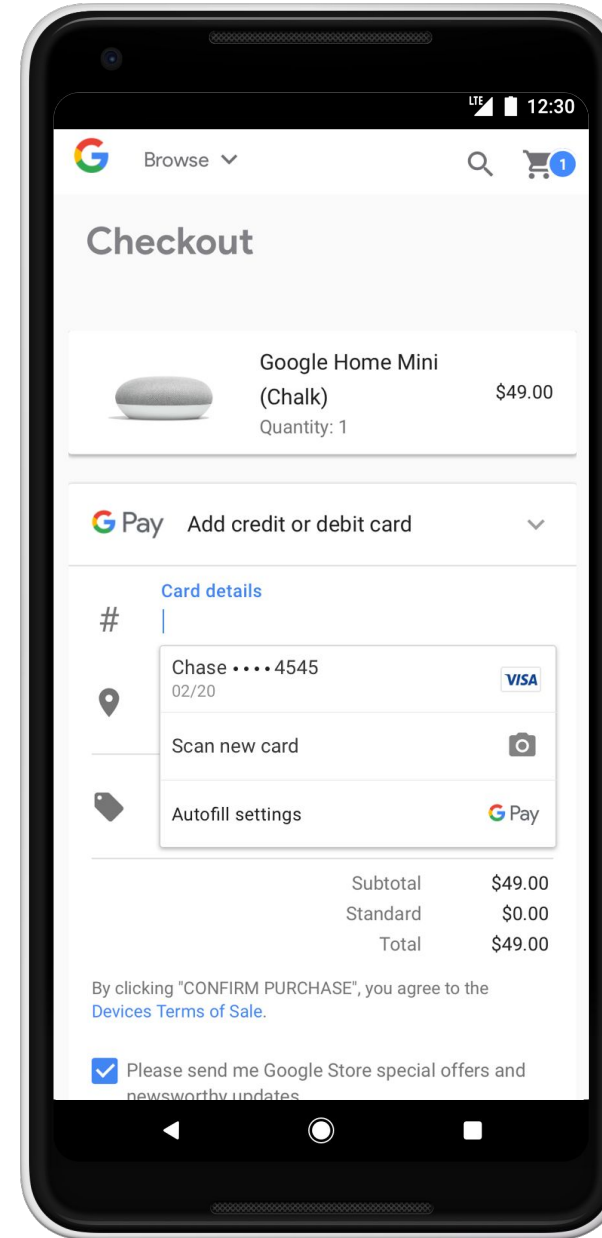
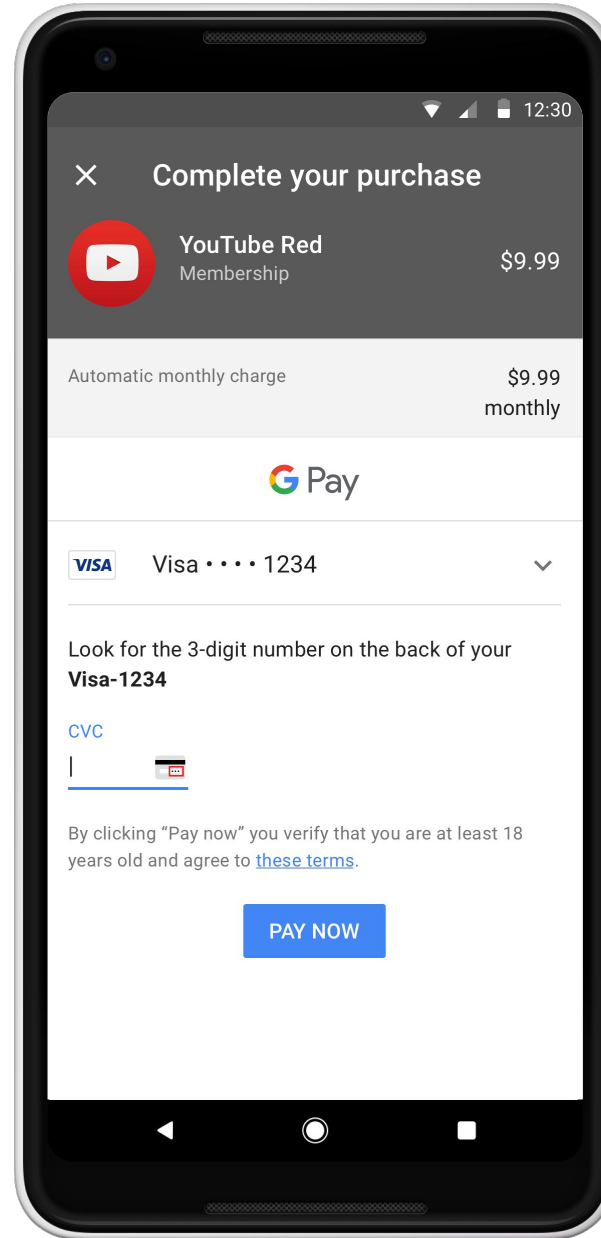
**Billions of Users
across Google**

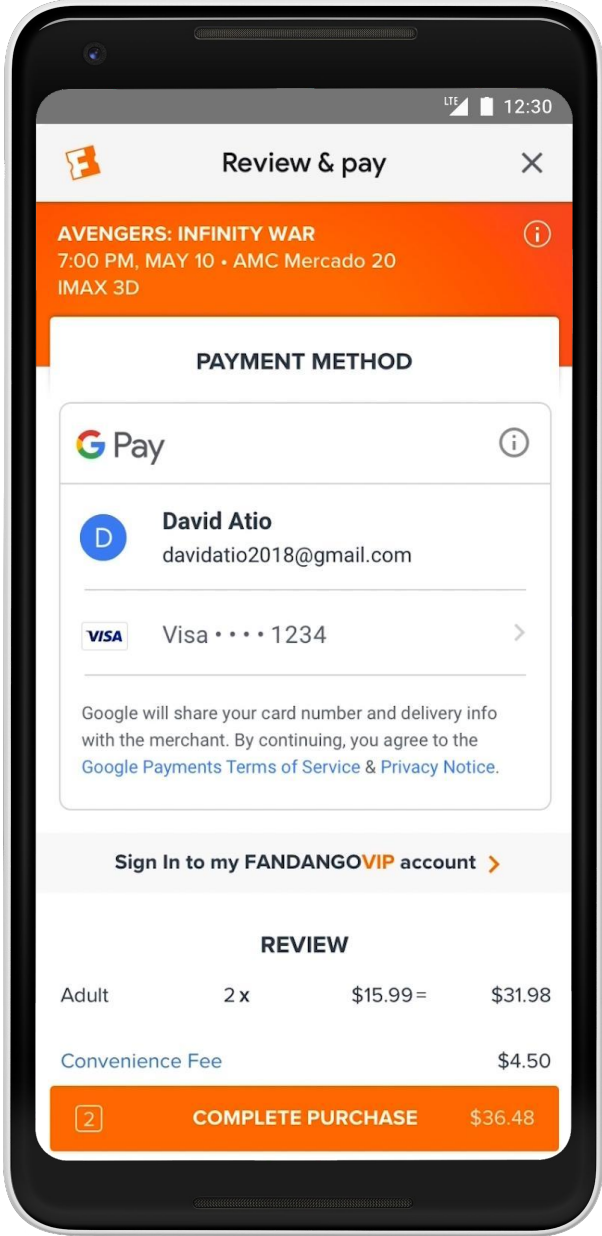
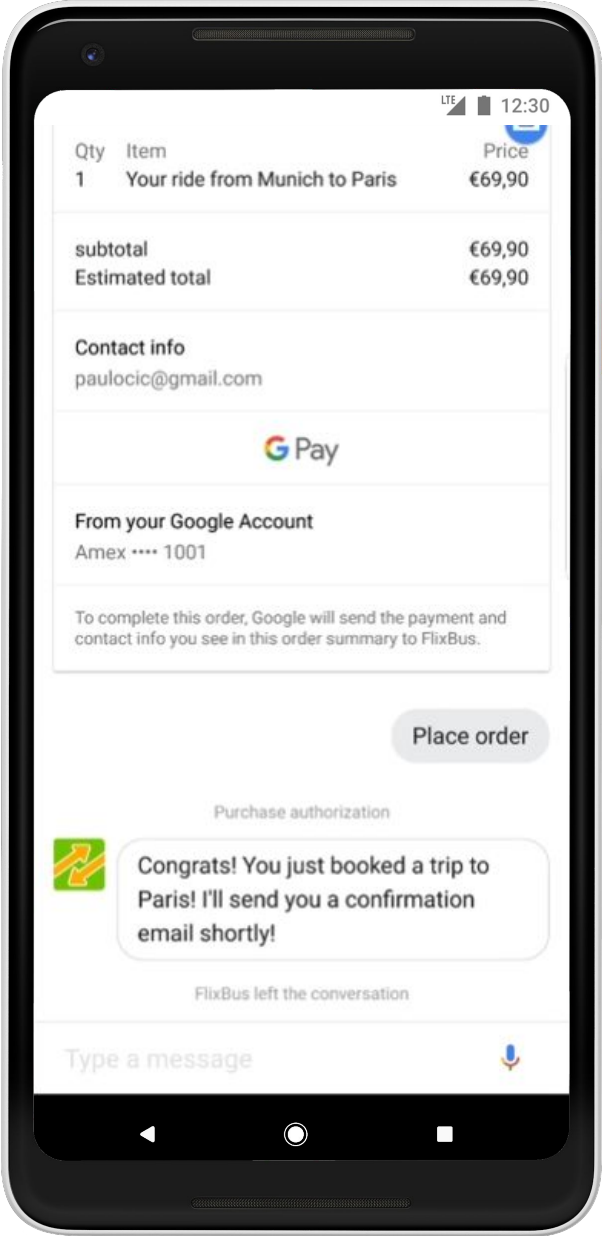
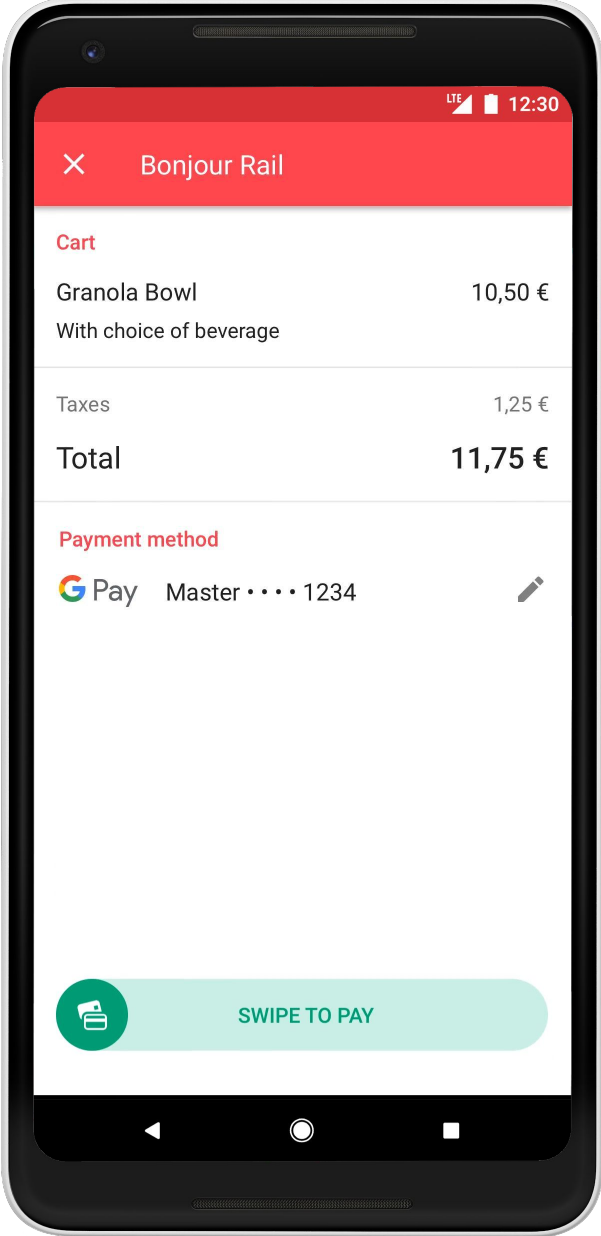


**Hundreds of millions
of forms of payment
saved to their Accounts**



**Users ready
to pay everywhere**





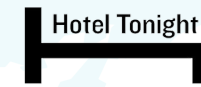


ASOS

BeyondMenu

BOXED

caviar



THE ICONIC



JB HI-FI



KAYAK

KLOOK



magazineluiza

minne



PANDAO



RITUAL



SPOT HERO



StubHub

TouchTunes

UBER



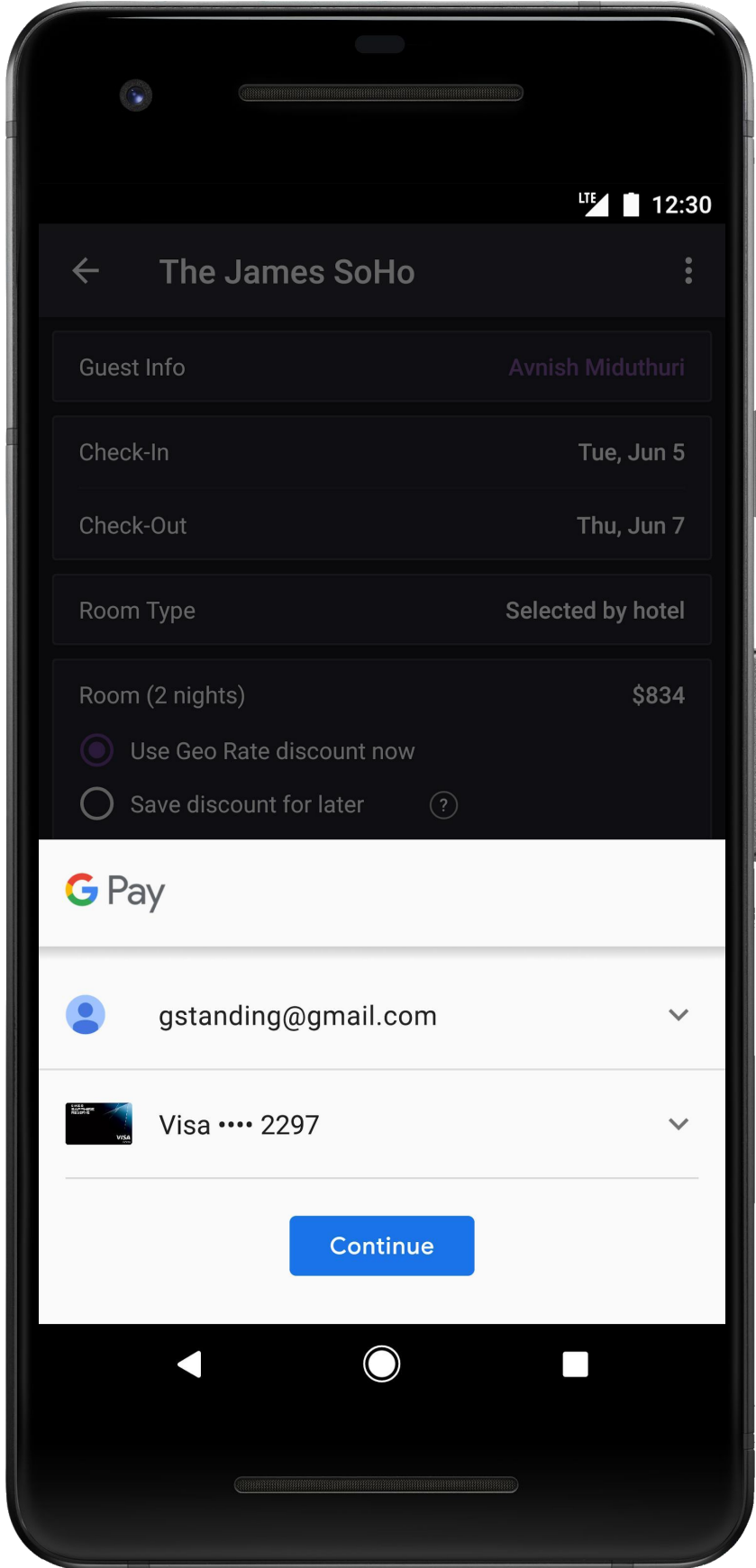
wetherspoon

wish



65%

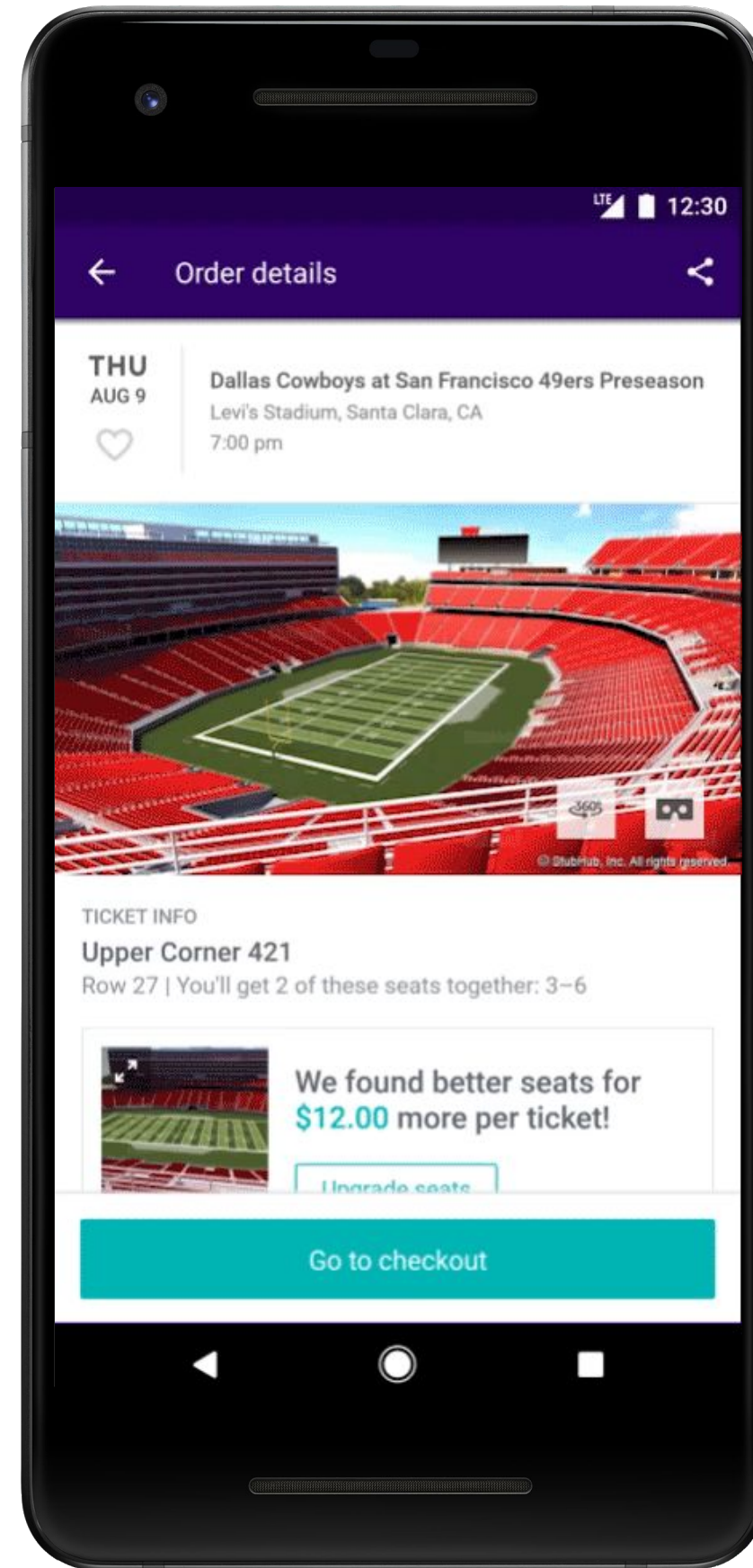
More likely to complete the booking flow, with **Google Pay**





7X

Increase in the number of unique users paying with Google Pay



Works on:

Safari

Opera

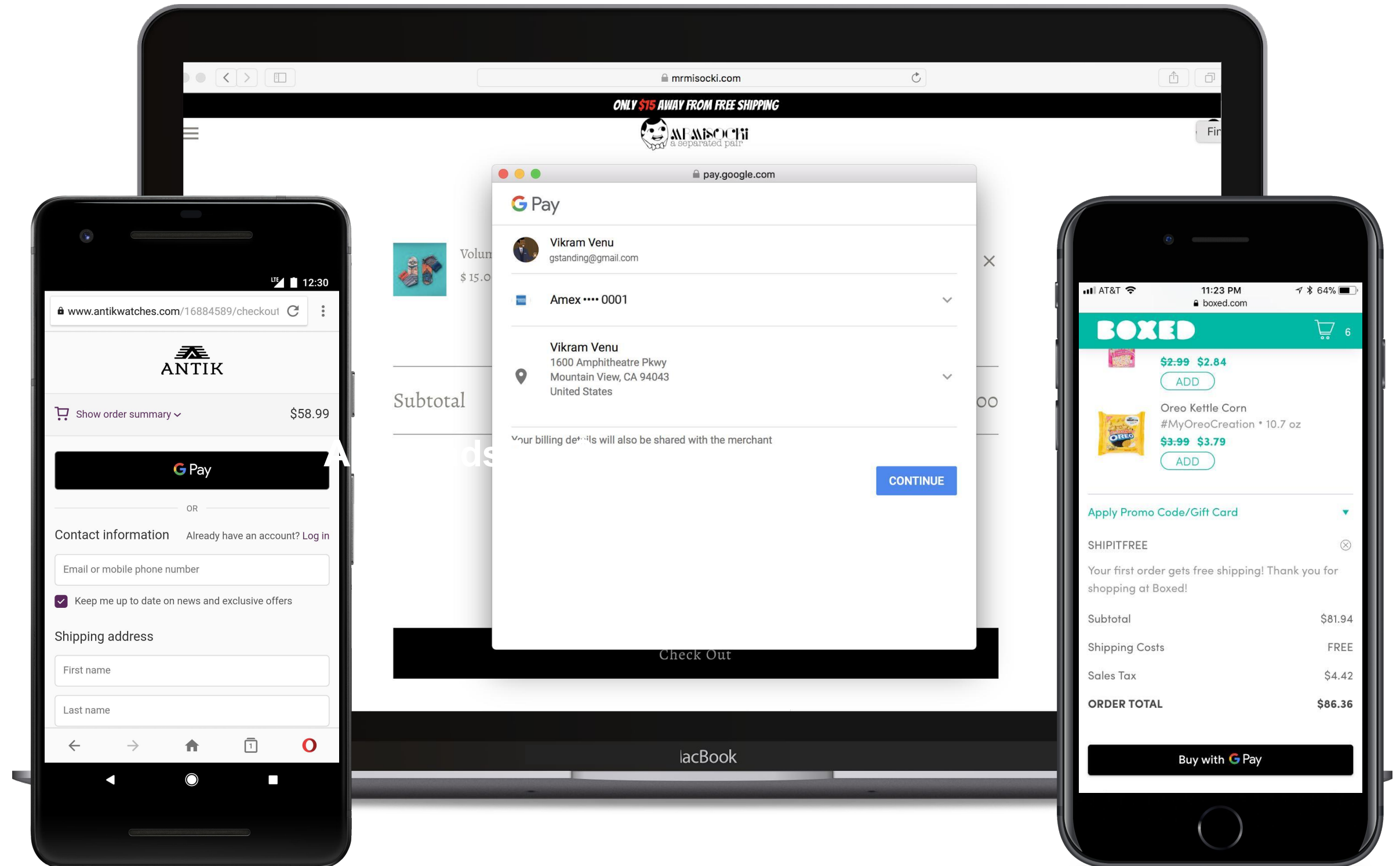
Firefox

Chrome

UC Browser

Microsoft Edge

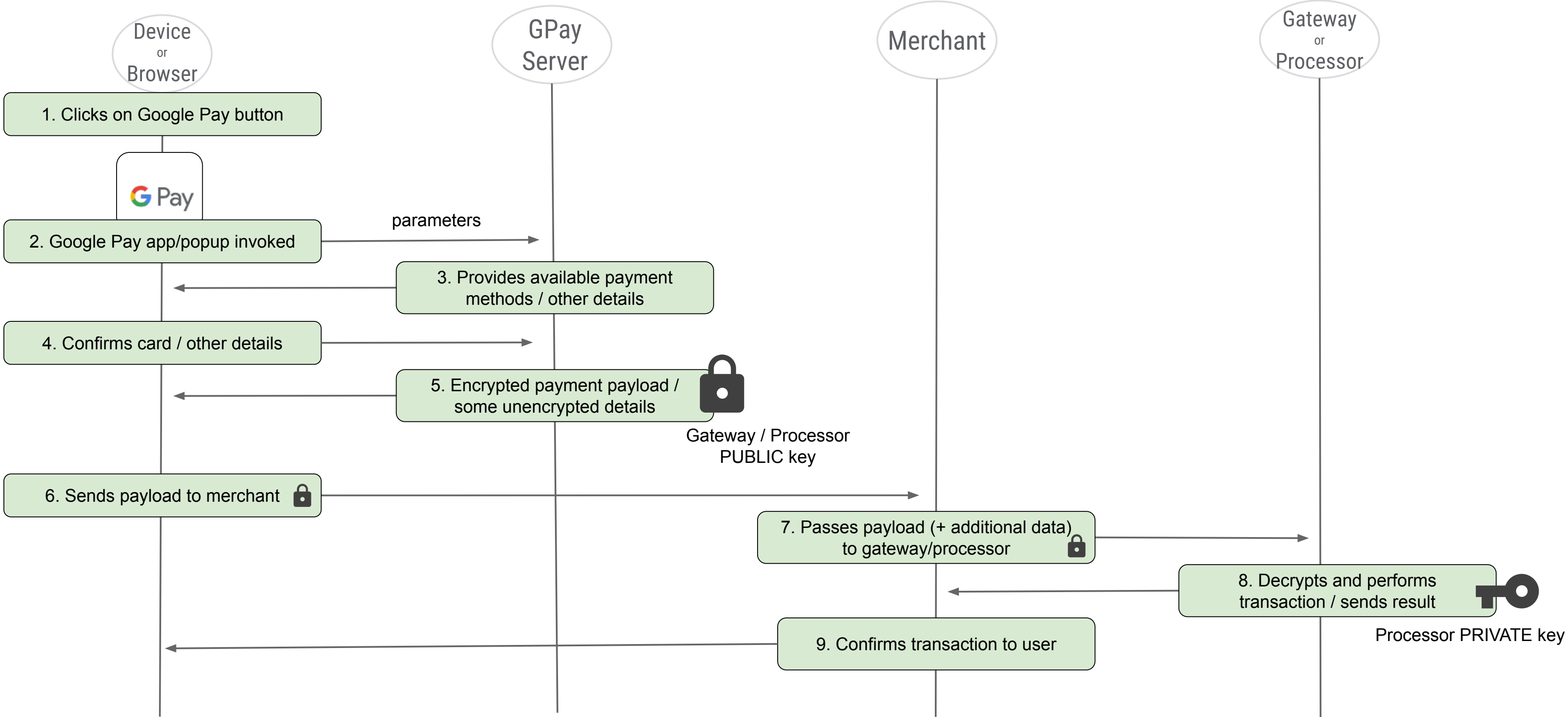
(coming soon)



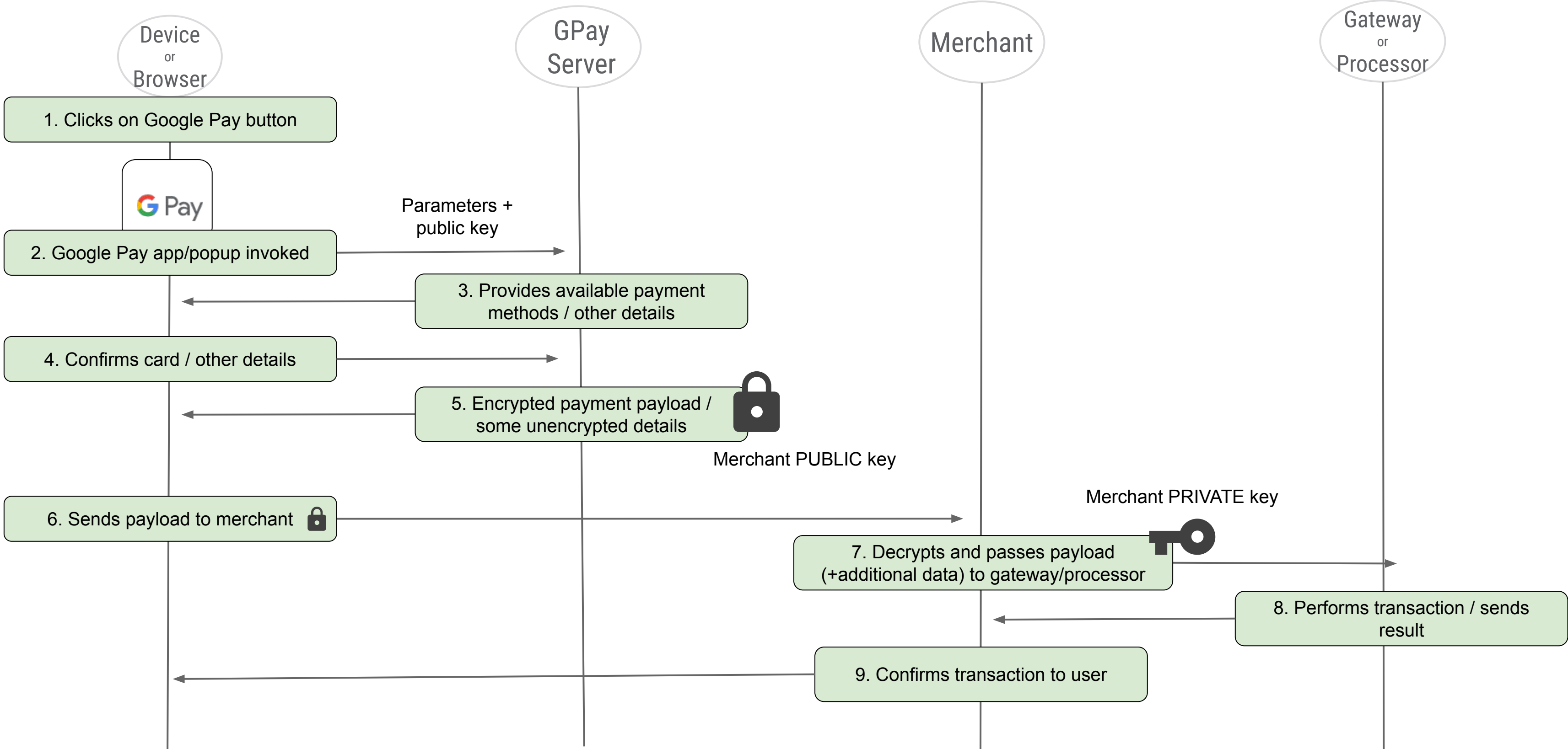
Compatible browsers: June 2018



Processor Integration - logical data flow



Direct Integration - logical data flow



User experience recommendations

- **Display** Google Pay **early** and **prominently** as payment method
- **Display** all relevant **purchase information** including final price and items/services purchased, before confirming an order
- If you display payment information on **confirmation screens or emails**, you may display the payment card description returned by Google Pay API
- Use only the official button styles and logo [assets](#) in your app/web



Google Pay vs Android Pay

- Brand new SDK
 - ~~1 hour for initial integration~~
 - New brand new sdk – a bit more complicated
 - Migration from Android Pay needed
 - Review needed

Google Pay

Reasons to use:

- Free
- Safe
- Commonly used

Android perks overview

Sceneform + Dynamic delivery

Slices

App indexing

App Actions

Shortcuts

Firebase analytics

Sceneform + Dynamic delivery

Simply not working

Sceneform + DD

- Unable to load Texture
registryId='android.resource://com.arfeature.arprofile/drawable/scen
eform_plane' java.util.concurrent.CompletionException:
java.lang.IllegalStateException: java.io.FileNotFoundException: No
package found for authority:
android.resource://com.arfeature.arprofile/drawable/sceneform_pla
ne java.util.concurrent.CompletionException:
java.io.FileNotFoundException: No package found for authority:
android.resource://com.arfeature.arprofile/raw/sceneform_plane_sh
adow_material

Sceneform + DD

- <https://goo.gl/GmufL3> - demo project
- <https://goo.gl/aVSFJf> - GitHub issue to spam Google with reports and force fix

App Bundle in August

- Series of unreproducible crashes on some of the devices

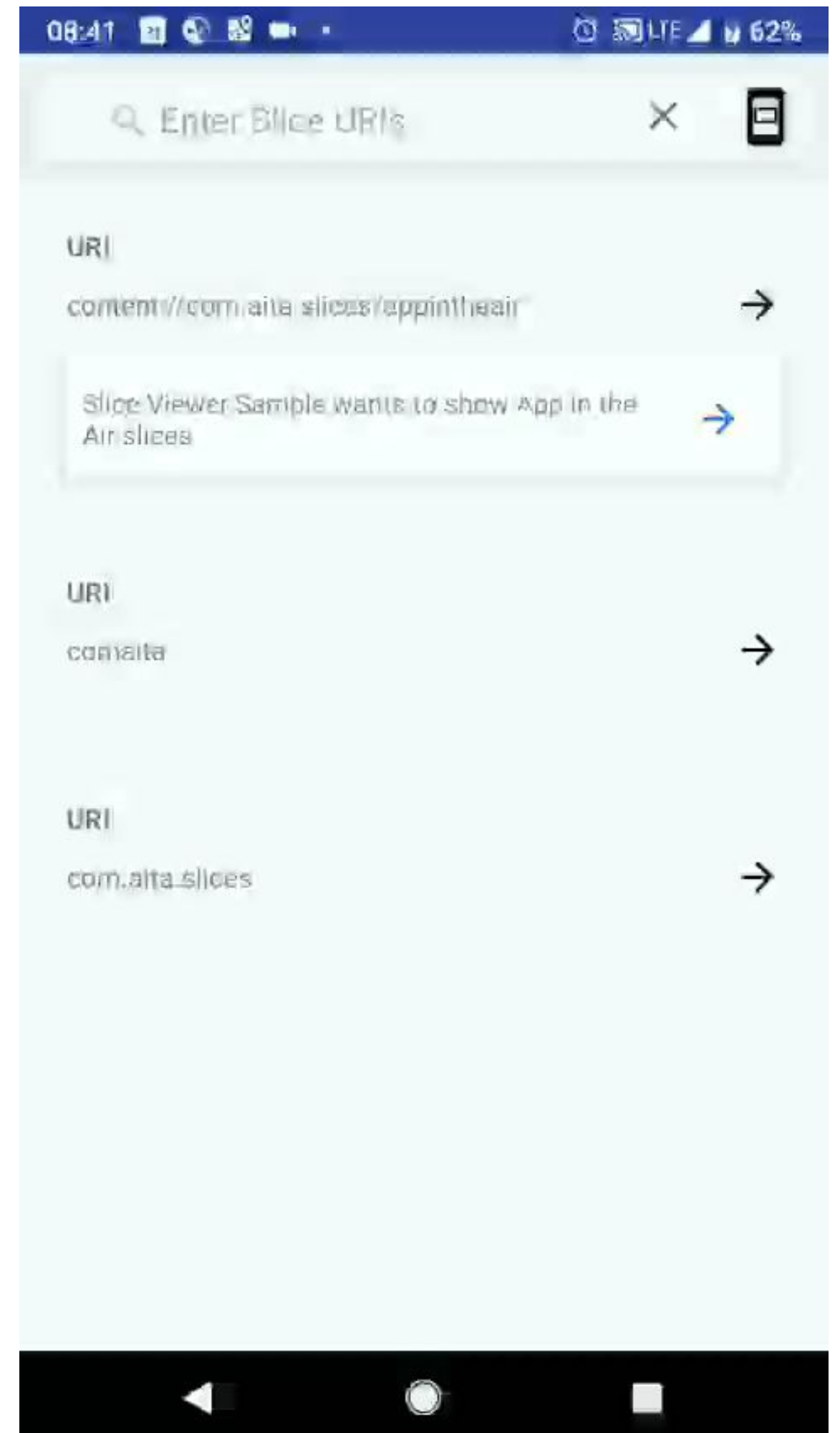
Slices

Idea:

- Create shareable components of your app

Purpose:

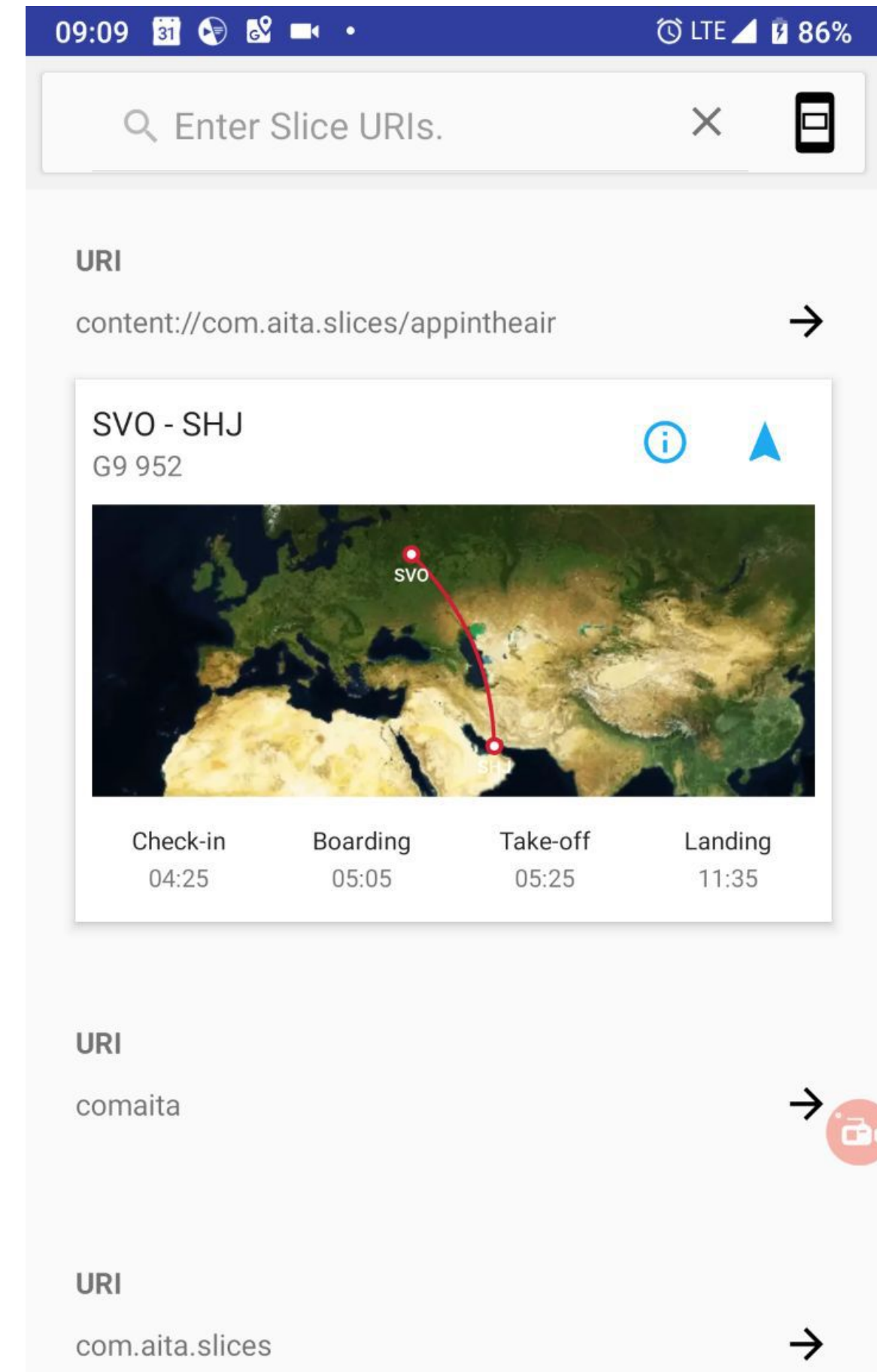
- Support native widgets Assistant & Search apps



Slices

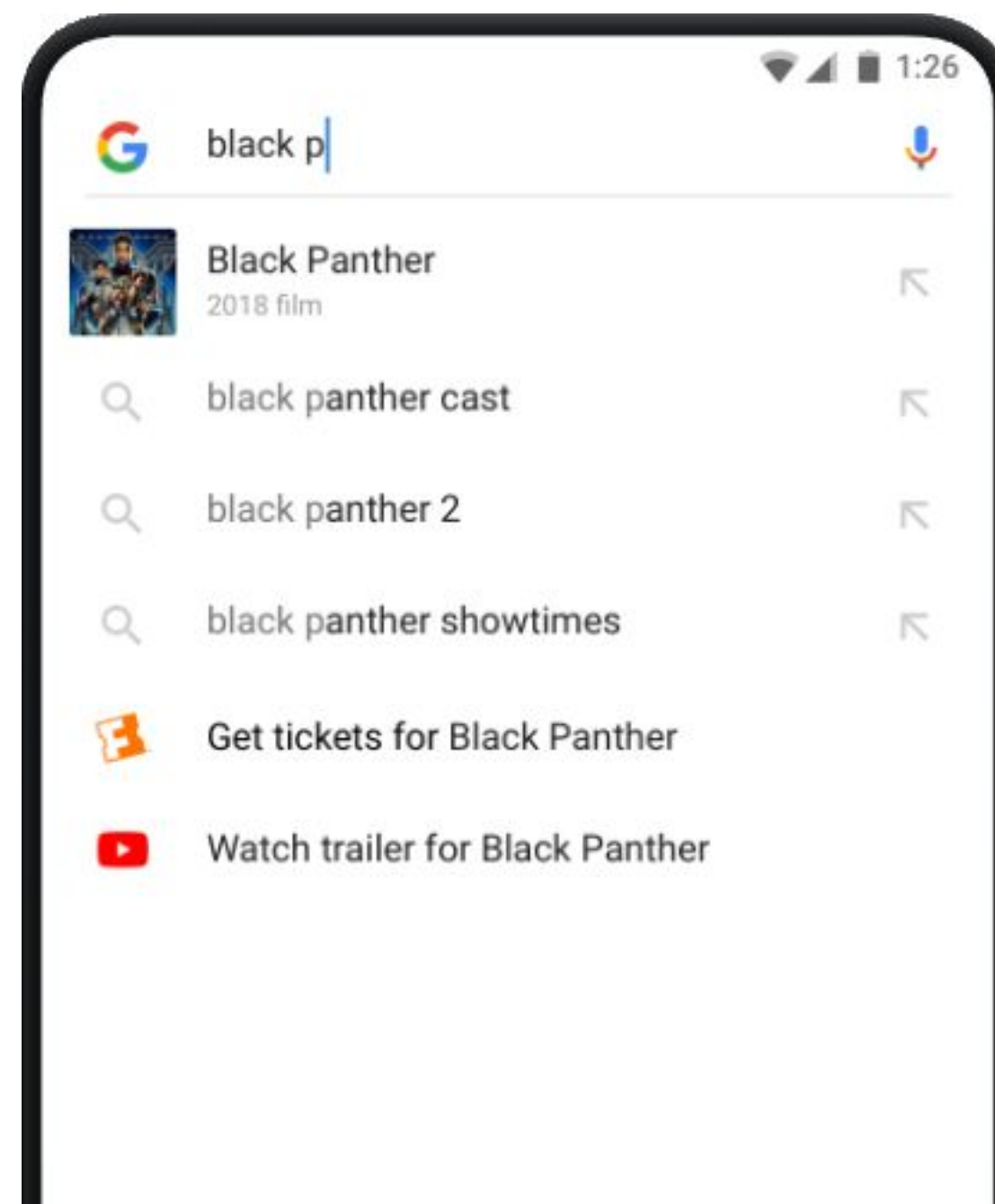
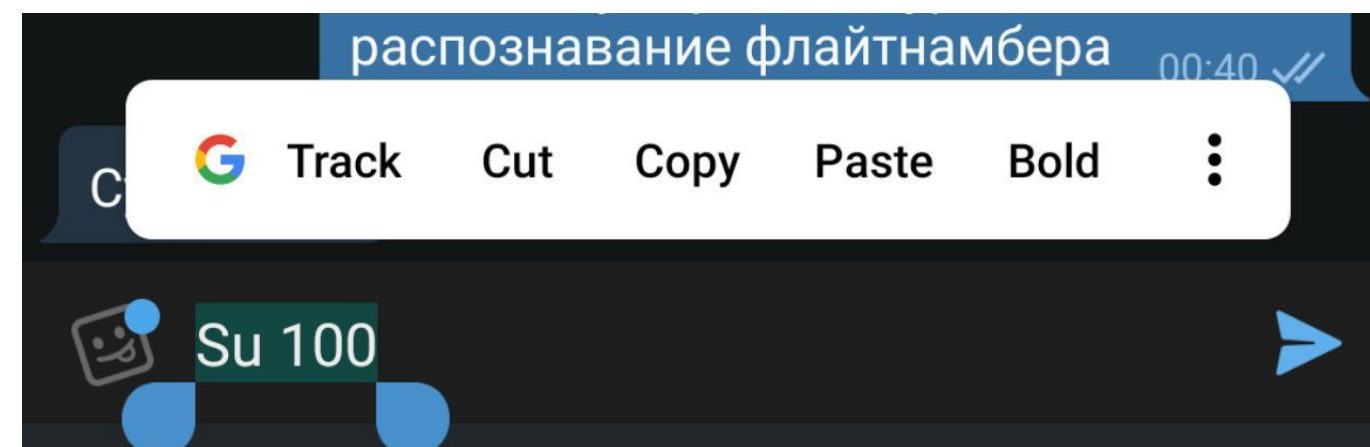
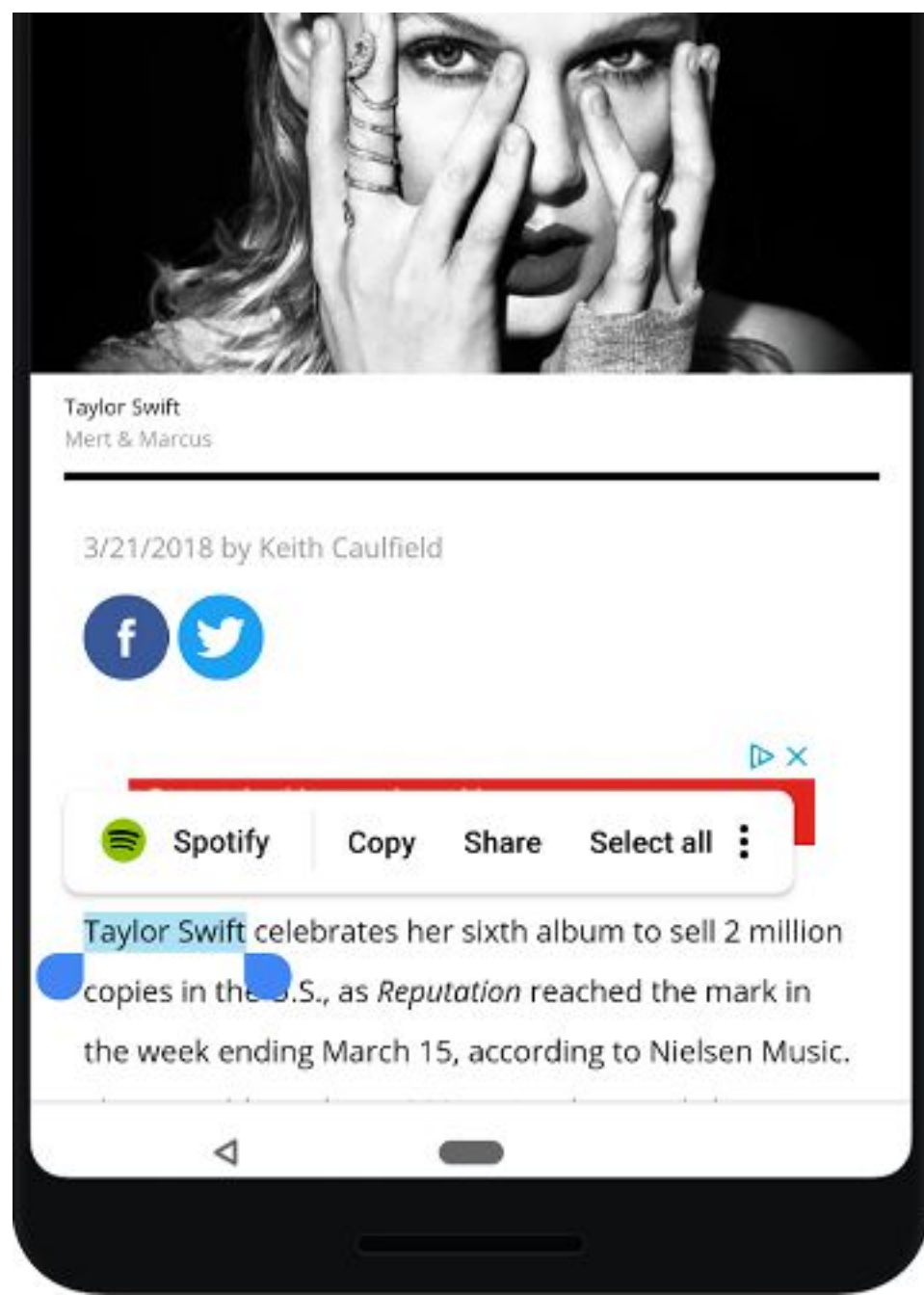
Alternative usage:

- Give access to UI for user without sharing any internal code|data



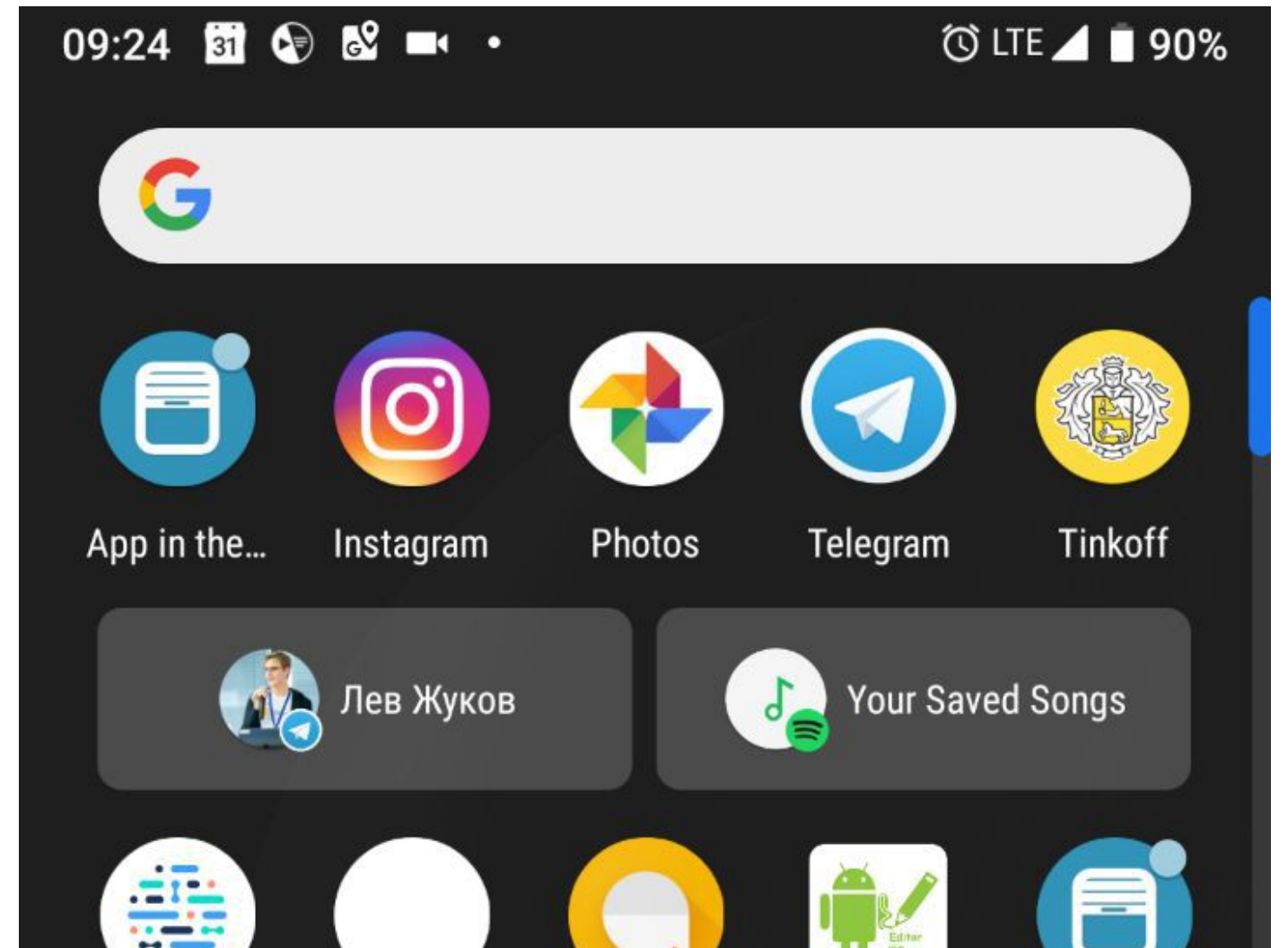
App actions

- No SDK available yet
- No EAP



App Indexing

- Public content indexing
- Personal content indexing
- Log user actions



App Indexing

- Search results
- Installs from webpage
- Autocompletions in Google app
- Assistant – screen search
- Ad targeting

Personal App Indexing IRL

- ~1,5 years ago – 1-2% of users
- Now – 0.01%

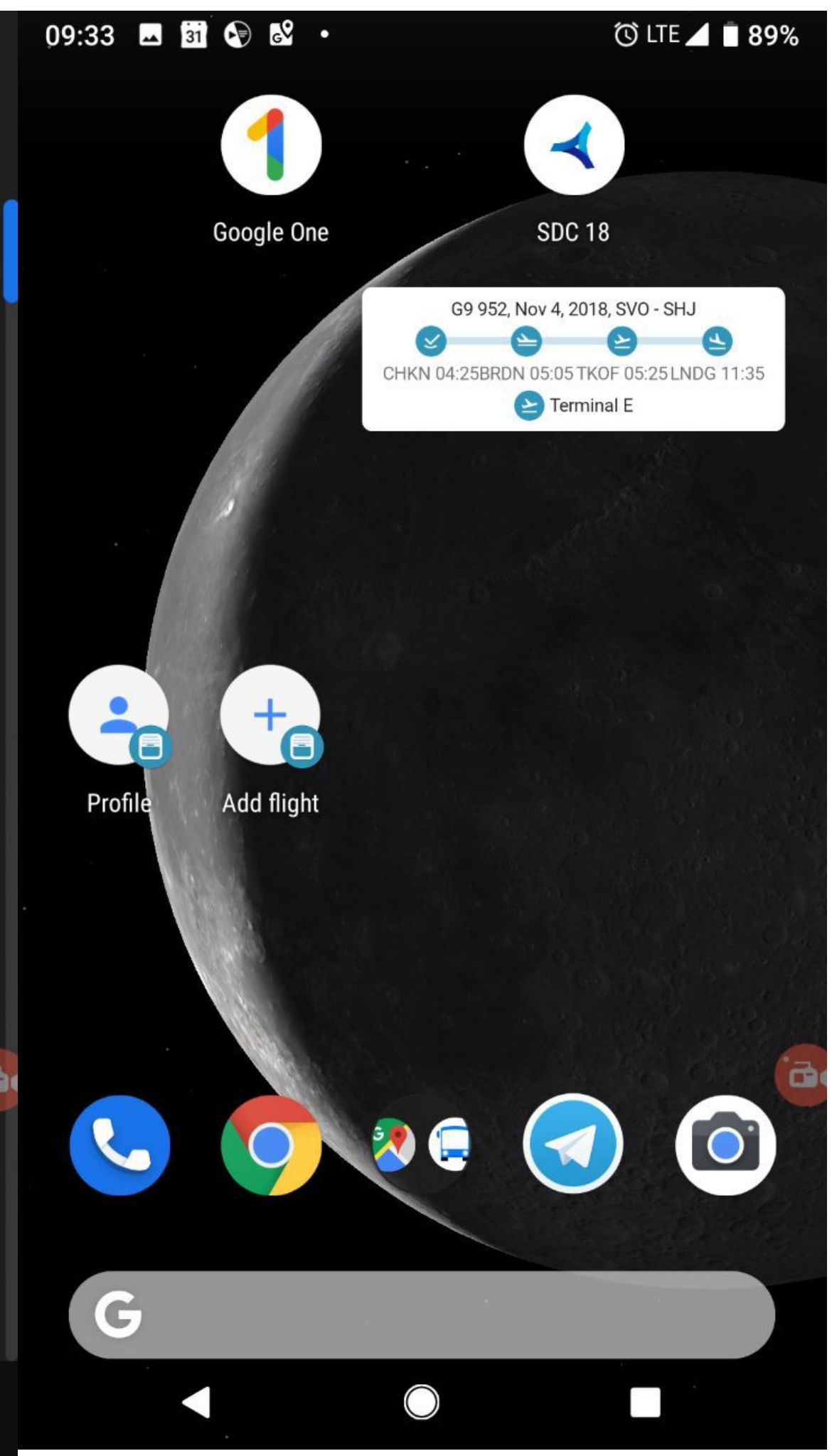
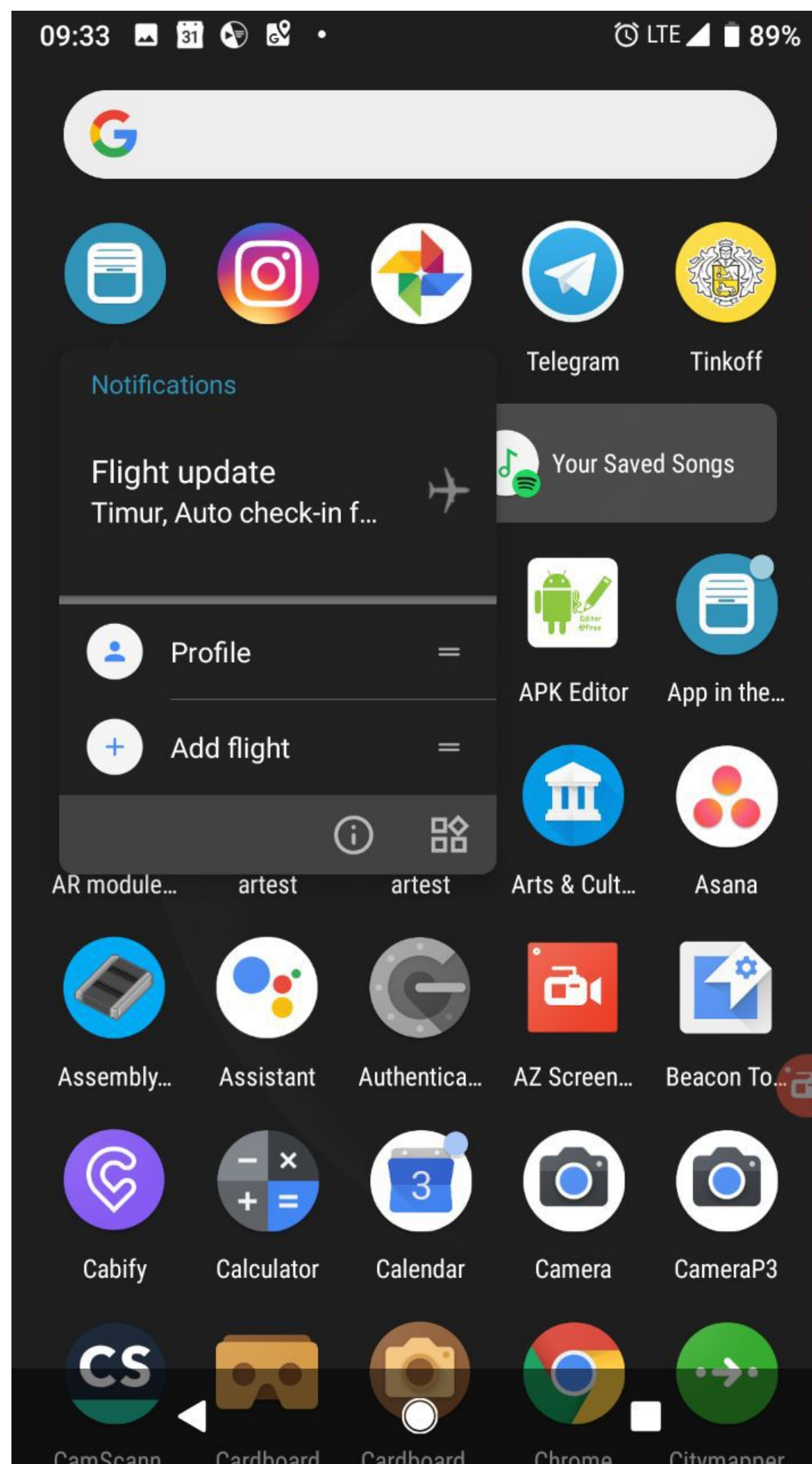
Shortcuts

Shortcuts:

- 0.31% of users

Simple Android widget:

- 5% of users



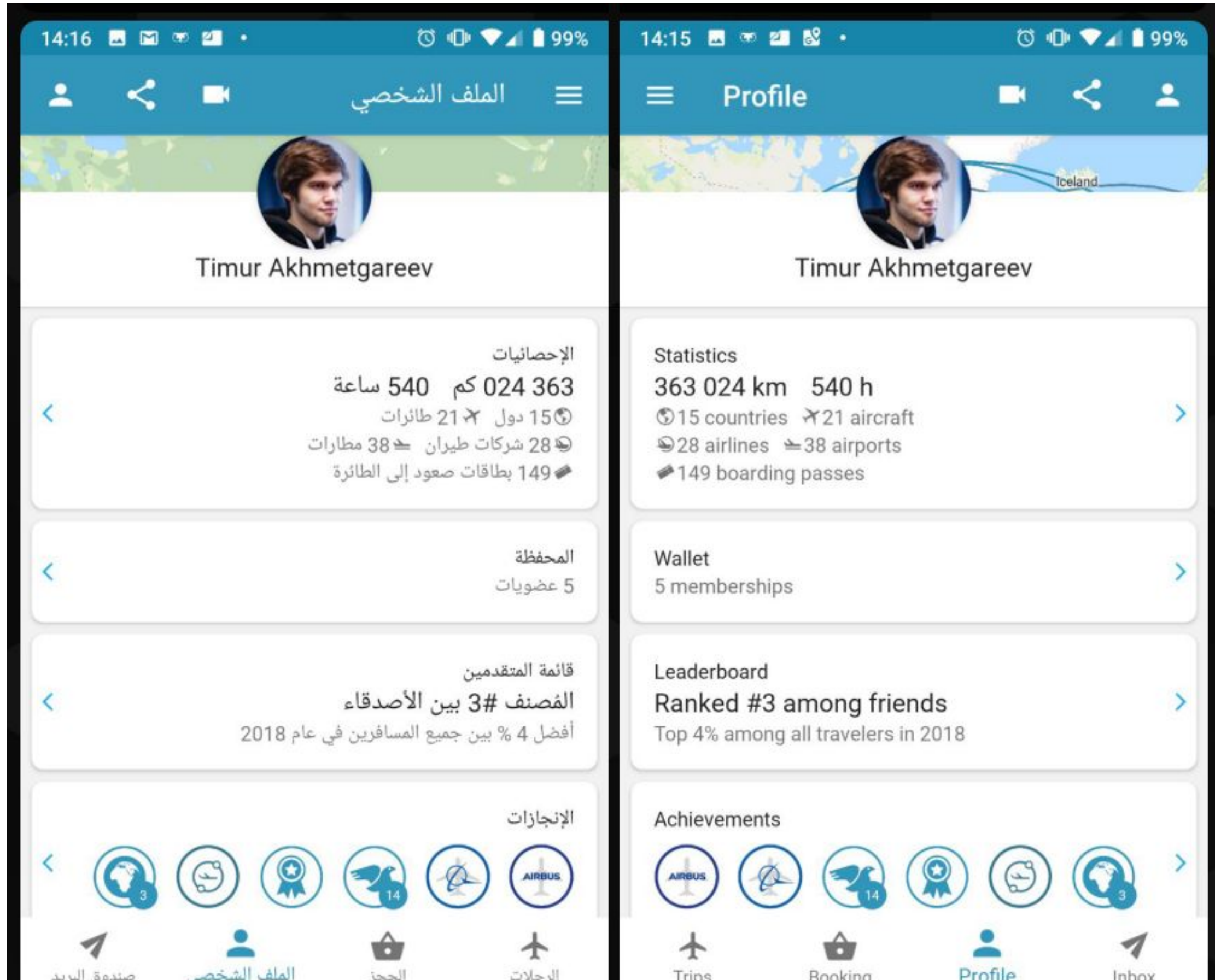
Firestore Analytics

- Dynamic auditing
- Enable BigQuery integration

Middle East Adaptation

Kuwait, Saudi Arabia, UAE, Oman, Bahrein, Qatar

RTL



Expectation – 3 days

- Check RTL implementation for some views
 - Lint for XML
 - Manual check for all custom views (~30)
- Translations proofreading
- ??????
- PROFIT!

Reality: 4 weeks

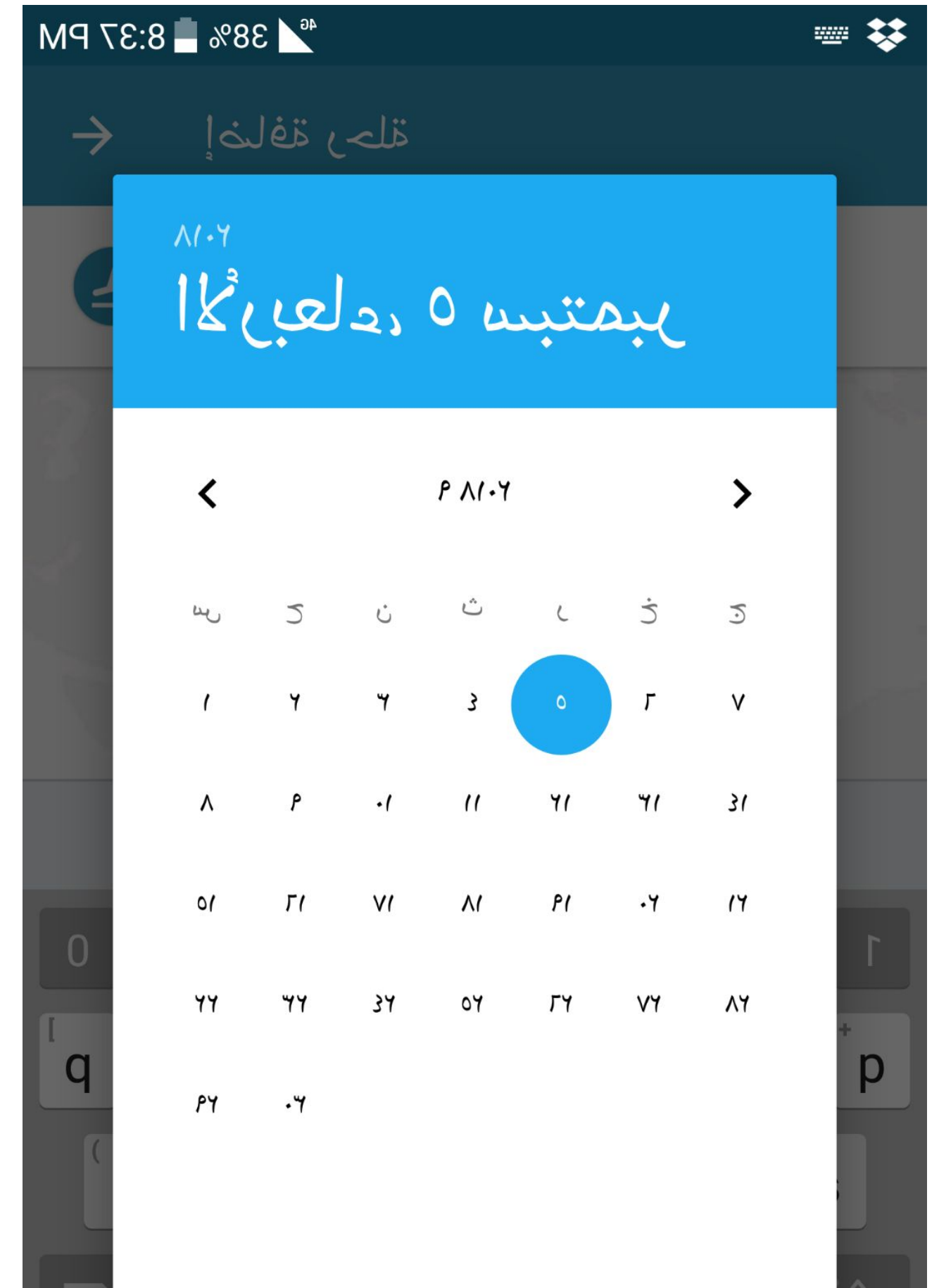
Without much sleep 😊

Translations proofreading

- “Almost all strings are from Google Translate”
 - Translated.com – official provider from GP
- No abbreviations allowed
- We should offer language switch:
 - Onboarding
 - Settings

Translations: numbers

- Arabic: ٩ ٨ ٧ ٥ ٤ ٣ ٢ ١ ٠
- Latin: 0 1 2 3 4 5 6 7 8 9



Translations: numbers

String.format(
 "SELECT column FROM db WHERE column_2 > %d", 12)

Translations: numbers

- Arabic numbers are not welcomed in 'ar' locale:
 - Emirate Airlines, Qatar airlines, WeGo use Latin numbers
- Can't simply insert non-Arabic text into Arabic text

Translations: numbers

- Arabic numbers are not welcomed in 'ar' locale:
 - Use `String.format(Locale.US, "%d xxxx", 12)`

Translations: numbers

- Arabic numbers are not welcomed in 'ar' locale:
 - ~~Use `String.format(Locale.US, "%d xxxx", 12)`~~
 - Replace `TextView` with `RobotoTextView`
 - Override `setText()`;

```
@Override
public void setText(CharSequence text, BufferType type) {
    if (type==BufferType.SPANNABLE) {
        super.setText(text, type);
    }else {
        super.setText(arabicToDecimal(getContext(), text), type);
    }
}
```

```
public static String arabicToDecimal(Context context, CharSequence number) {
    if (number != null) {
        if (context != null && !LocaleManager.isPersian(context)
&& isRTL(context)) {
            char[] chars = new char[number.length()];
            for (int i = 0; i < number.length(); i++) {
                char ch = number.charAt(i);
                if (ch >= 0x0660 && ch <= 0x0669)
                    ch -= 0x0660 - '0';
                else if (ch >= 0x06f0 && ch <= 0x06F9)
                    ch -= 0x06f0 - '0';
                chars[i] = ch;
            }
            return new String(chars);
        } else {
            return number.toString();
        }
    } else {
        return "";
    }
}
```

```
public static String arabicToDecimal(Context context, CharSequence number) {
    if (number != null) {
        if (context != null && !LocaleManager.isPersian(context)
&& isRTL(context)) {
            char[] chars = new char[number.length()];
            for (int i = 0; i < number.length(); i++) {
                char ch = number.charAt(i);
                if (ch >= 0x0660 && ch <= 0x0669)
                    ch -= 0x0660 - '0';
                else if (ch >= 0x06f0 && ch <= 0x06F9)
                    ch -= 0x06f0 - '0';
                chars[i] = ch;
            }
            return new String(chars);
        } else {
            return number.toString();
        }
    } else {
        return "";
    }
}
```

```
public static boolean isPersian(Context context) {  
    return getLanguage(context).contains("fa");  
}
```

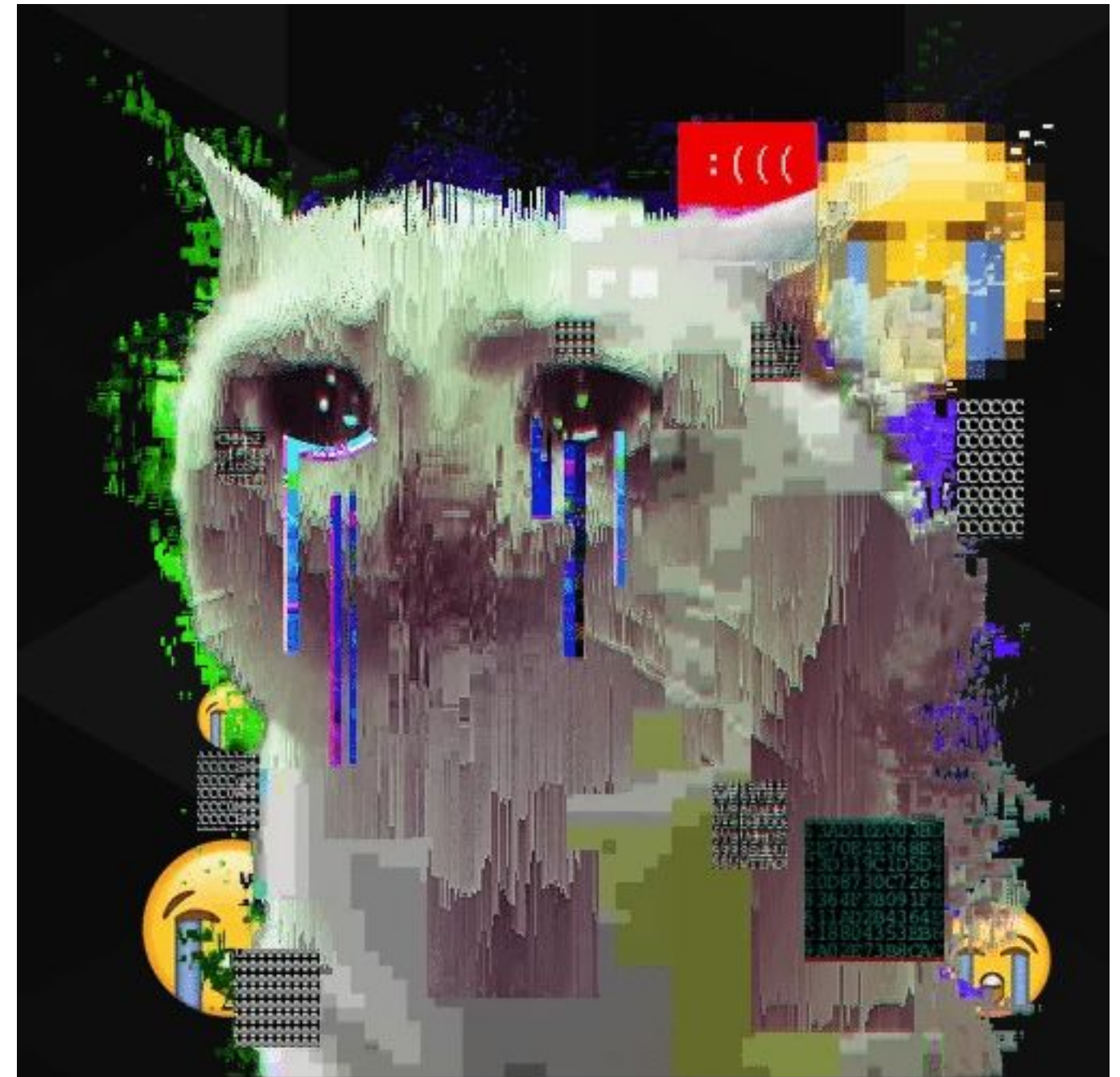
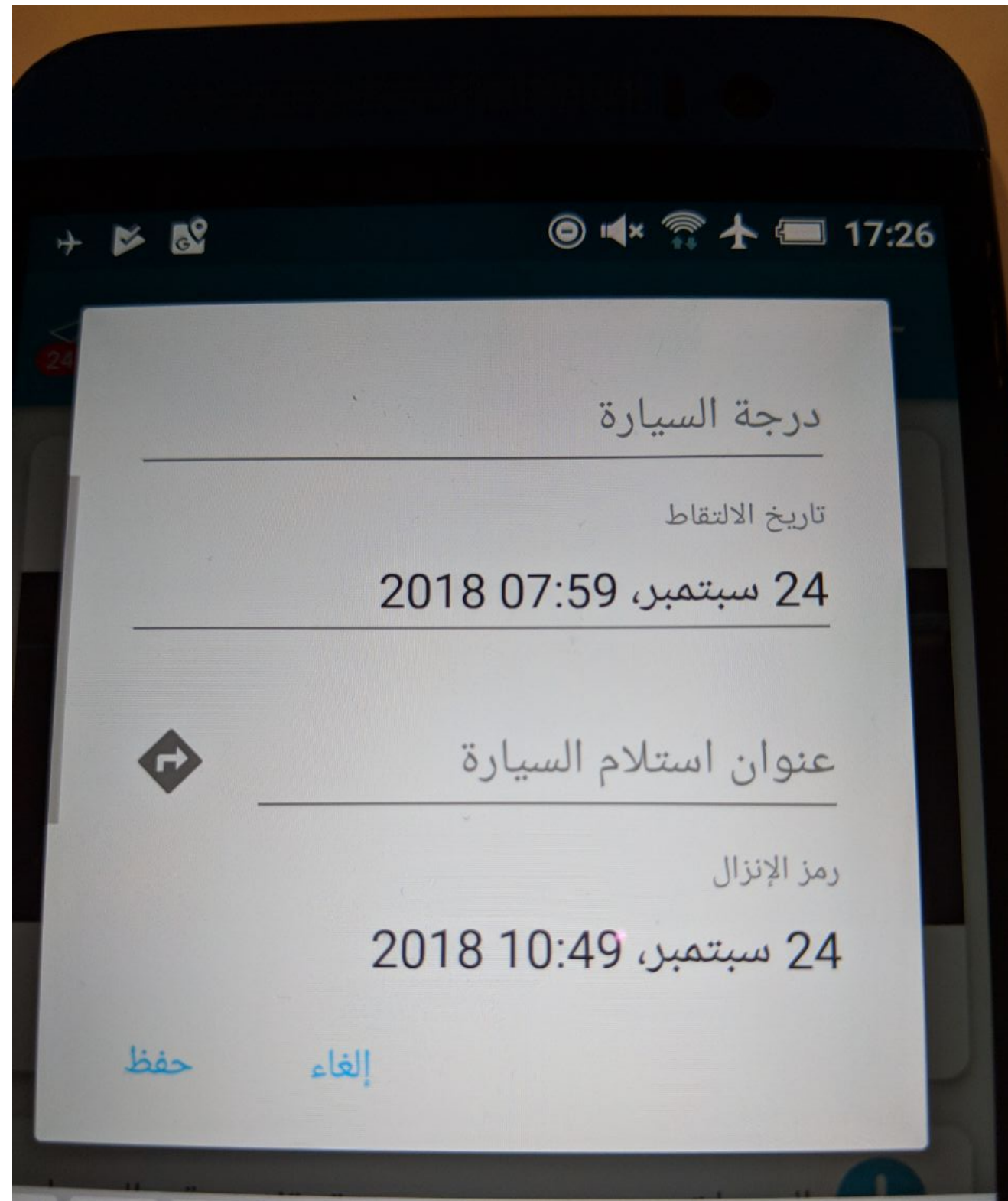
Translations: concatenation

- return `DateFormat.getLongDateFormat(context) + " " +
DateFormat.getTimeFormat(context);`
- Result in English: **October 20, 2018 20:07**

Quiz:

- `return DateFormat.getLongDateFormat(context)+ " " + DateFormat.getTimeFormat(context);`
- Result in English: **October 24, 2018 07:59**
- Result in Arabic:
 1. 07:59 2018 ,24 أكتوبر
 2. 07:59 2018 ,24 أكتوبر
 3. 07:59 24 2018 أكتوبر
 4. 2018 07:59 24 أكتوبر

Translations: concatenation

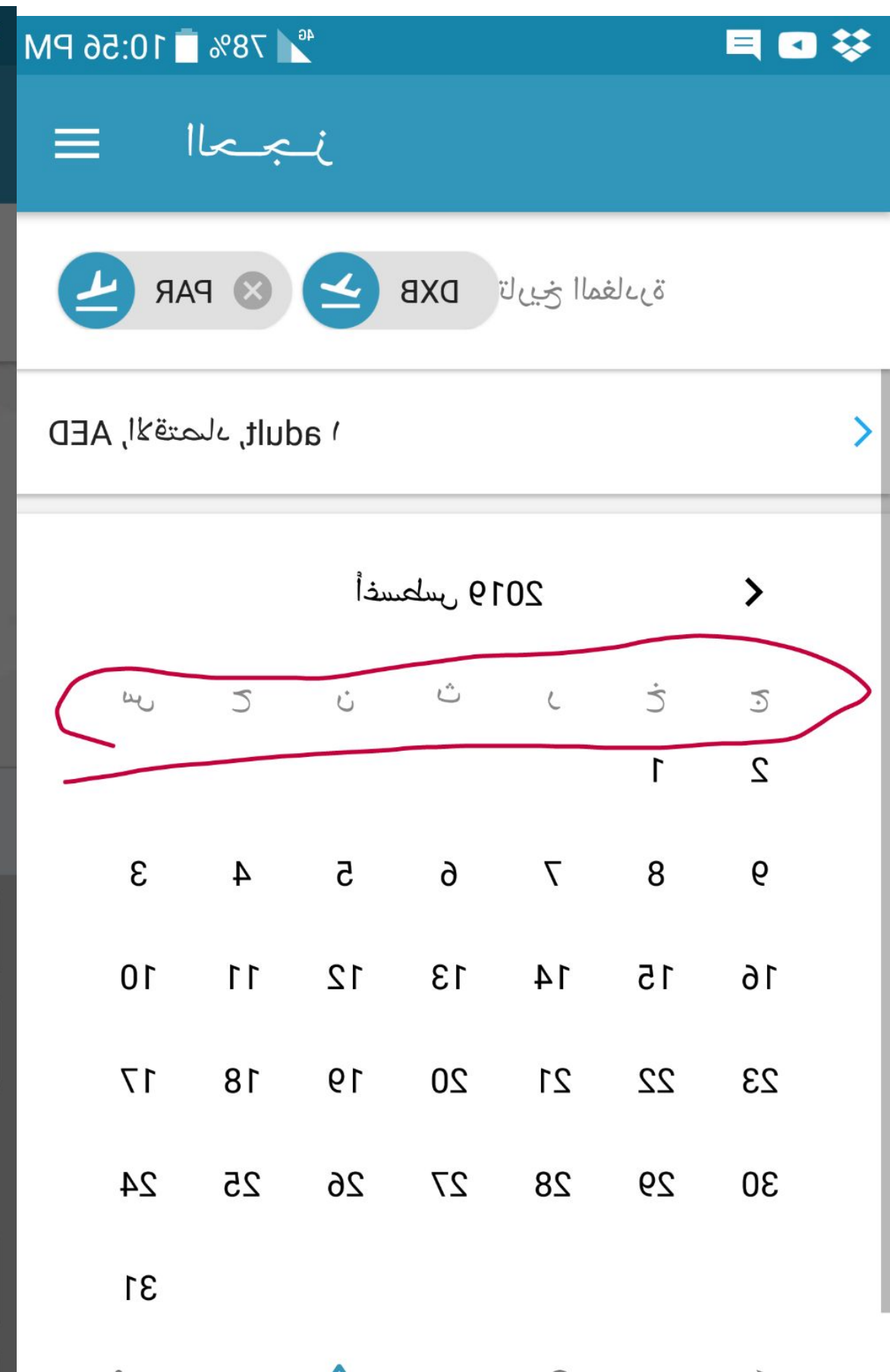
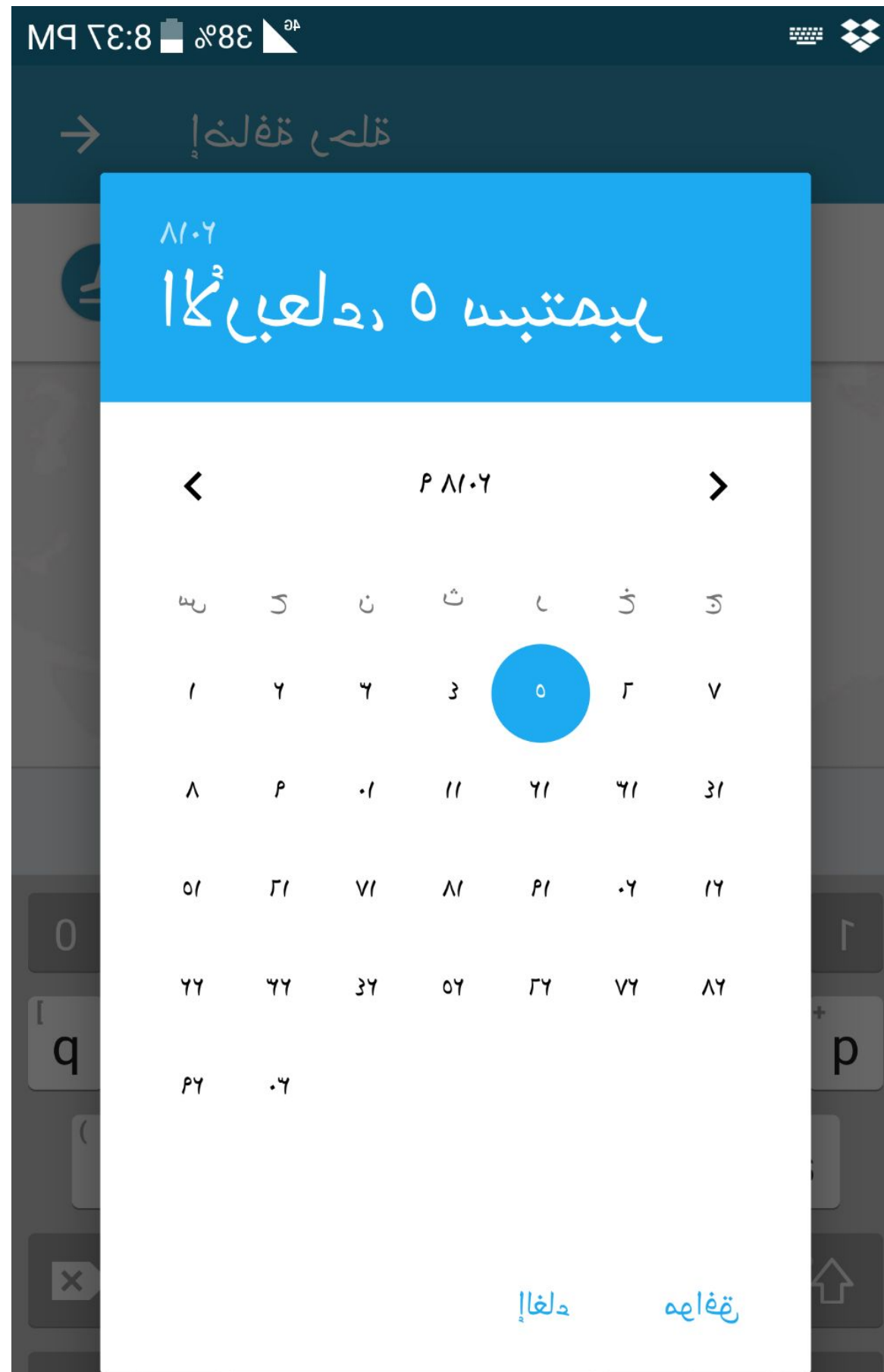


Translations: concatenation

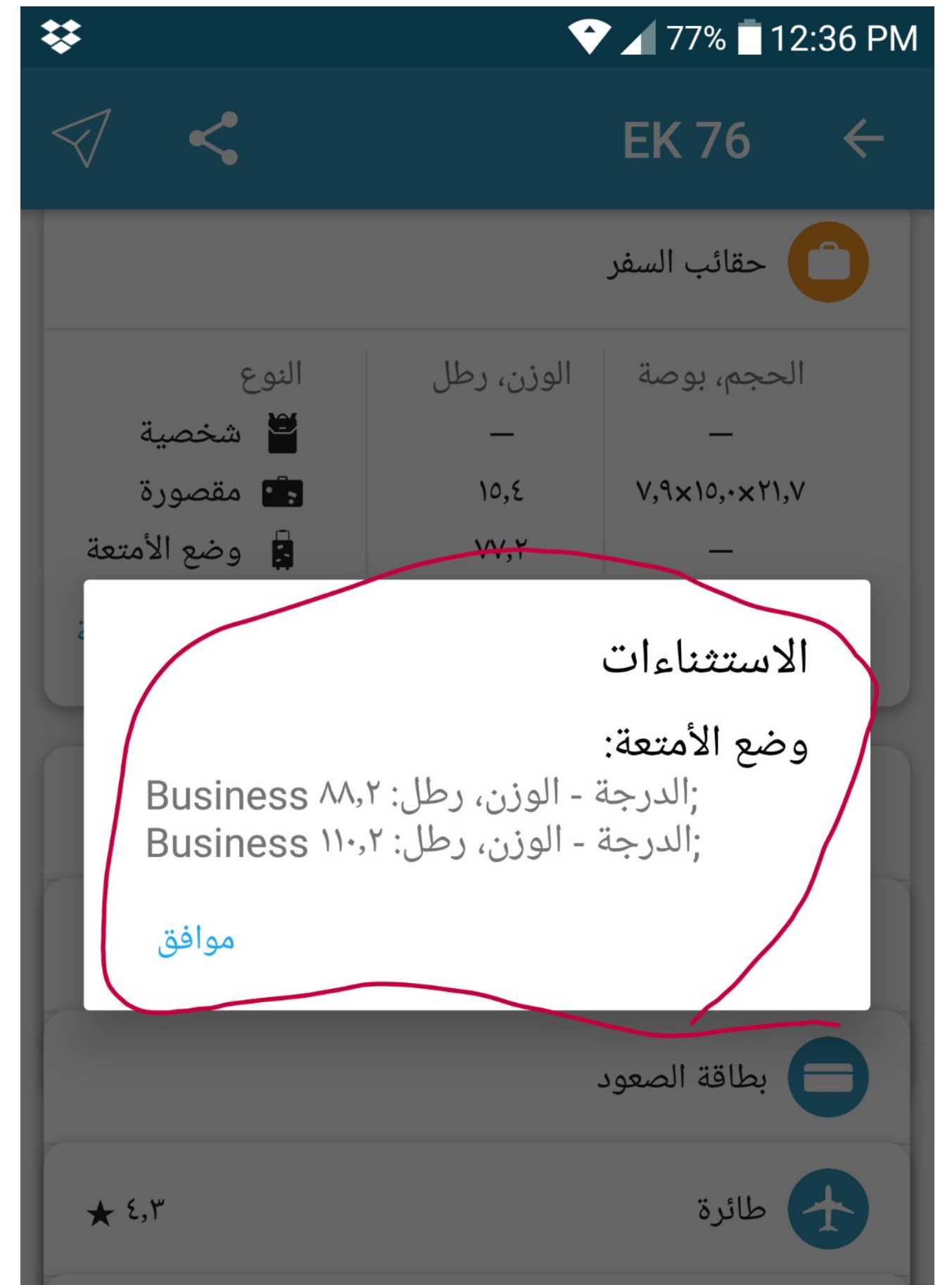
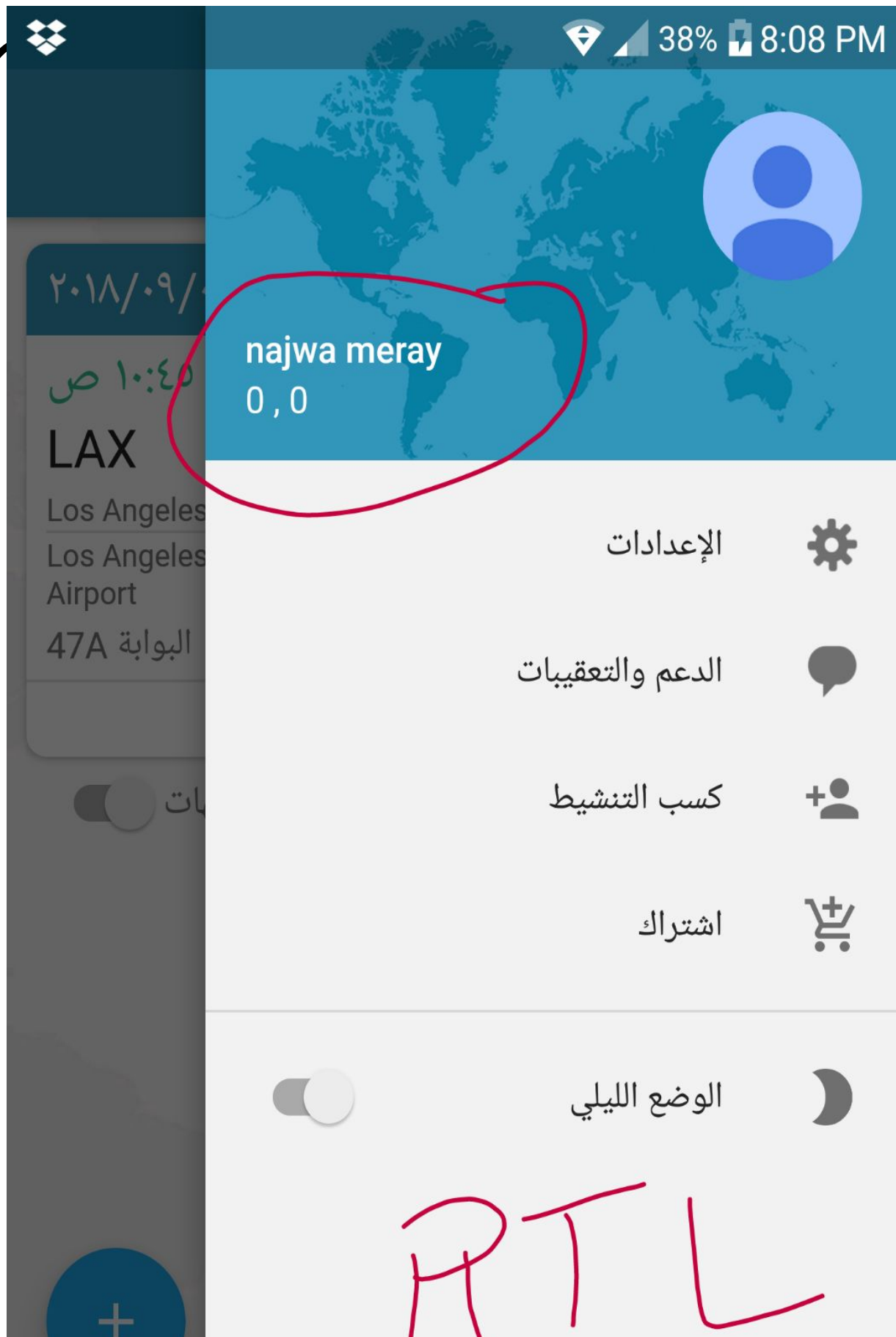
```
myArabicString + "\u202A" + myEnglishString + "\u202C" + moreArabic
```

Translations: ca

- Abbrev in names
- Arabic numbers
- Year picker
- RTL support



Transparency



Translations: text gravity

```
setTextDirection(TEXT_DIRECTION_LOCALE) ;  
setTextAlignment(TEXT_ALIGNMENT_GRAVITY) ;
```

Translations: c

الحجز

٩ ٣٠-٢٤

١ adult, الاقتصاد, AED

سبتمبر 2018

س	ح	ن	ث	ر	خ	ج
1	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					

Translations: date

- SimpleDateFormat
- android.text.format.DateFormat
- DateFormat.getBestDateTimePattern
- Concatenation of Calendar values

Translations: date

75% 11:32 AM

رحلاتي

غير ذلك رحلاتي

15 10 EK 76

(1+) 6:35 ص 9:55 م

DXB CDG

Dubai, AE Paris, FR

Dubai International Airport Charles de Gaulle International Airport

المبنى 3 المبنى 2C

مدة الرحلة: 6 ساعة 40 دقيقة

إيقاف التنبيهات

إخفاء الرحلات السابقة

6 9 AA 1

10:27 ص 7:54 ص

SFO JFK

01:56 22%

أخرى الأشخاص رحلاتي

2018 مايو 15 TP 1048

(1+) 00:43 22:00

BCN LIS

Barcelona, ES Lisbon, PT

Barcelona International Airport Lisbon Portela Airport

المبنى 1 المبنى 1

مدة الرحلة: 1 ساعة 43 دقيقة

2018 مايو 13 Lisbon ← Oakland

Oakland OAK (1), 168 B6 (1+) 06:43 ◀ 22:23

16 ساعة 38 دقيقة

New York JFK (5) المبنى 5

Lisbon LIS (1), 208 TP (1+) 11:24 ◀ 23:21

مدة الرحلة: 28 ساعة 44 دقيقة

2018 مايو 5 AS 1941

19:55 18:38

SFO LAX

Translations: date

- Don't use MMM pattern, replace with LLL
- Use LLLL for arabic

Translations: sum up

- No abbreviations allowed
- Replace arabic numbers with latin
- Language switch
- Use CustomTextView
- MEA != Persian language
- Can't simply insert non-Arabic text into Arabic text

Translations: plurals

Translations: plurals

```
<string name="nearby_users_many">users nearby</string>  
<string name="nearby_users_one">user nearby</string>
```

```
String nearbyUsersCount = usersCount + getUserCountString(usersCount);
```

Translations: plurals

```
<string name="nearby_users_many">пользователей рядом</string>  
<string name="nearby_users_one">пользователь рядом</string>
```

```
String nearbyUsersCount = usersCount + getUserCountString(usersCount);
```

Translations: plurals

```
<string name="nearby_users_many">пользователей рядом</string>  
<string name="nearby_users_one">пользователь рядом</string>
```

```
String nearbyUsersCount = usersCount + getUserCountString(usersCount);
```

ей

Translations: plurals

```
<item quantity="zero"></item>  
<item quantity="one"></item>  
<item quantity="two"></item>  
<item quantity="few"></item>  
<item quantity="many"></item>  
<item quantity="other"></item>
```

Translations: plurals

```
<string name="nearby_users_two">пользователя рядом</string>  
<string name="nearby_users_many">пользователей рядом</string>  
<string name="nearby_users_one">пользователь рядом</string>
```

```
String nearbyUsersCount = usersCount + getUserCountString(usersCount);
```

```
<plurals name="d_users_nearbyusers">  
  <item quantity="one">пользователь рядом</item>  
  <item quantity="few">пользователя рядом</item>  
  <item quantity="many">пользователей рядом</item>  
  <item quantity="other">пользователей рядом</item>  
</plurals>
```

```
String nearbyUsersCount = usersCount +
```


The end?

Zh-TW

Translations: plurals

```
<string name="nearby_users_many">users nearby</string>  
<string name="nearby_users_one">user nearby</string>
```



```
<plurals name="d_users_nearbyusers">  
  <item quantity="one">%s user nearby</item>  
  <item quantity="other">%s users nearby</item>  
</plurals>
```

Internal

- Lib module:
 - Essential custom views
 - Density helper
 - Date & time formatting helper
 - Locale manager – changing languages
 - RTL Helper

Can be shared across projects

QA notes

The end