



```
// You'll need  
// com.google.  
listRef.listAll  
.addOn  
prefixes.  
// All  
// You  
}  
  
it  
} }  
} }  
}  
}  
}
```

# devfest

## From idea to app: jump start into Android dev with Compose



Google Developer Groups

Zambia

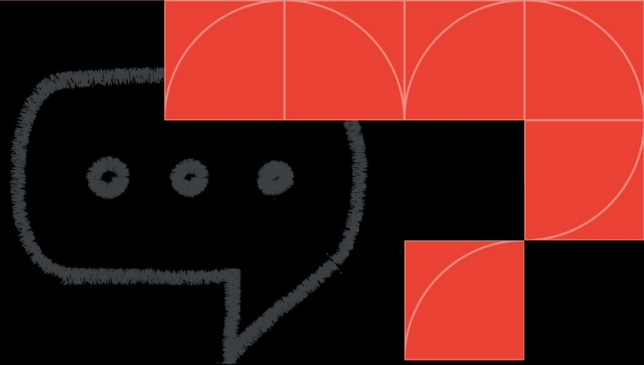


@maiatoday

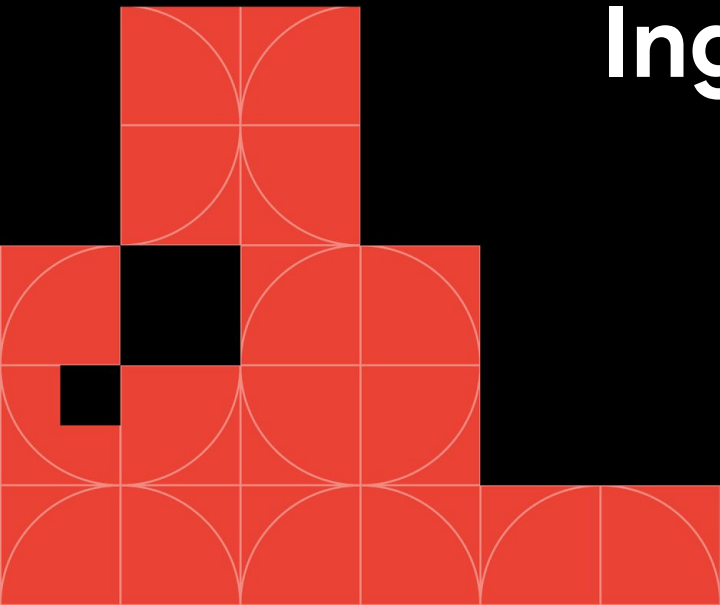
Maia Grotepass

```
Text(  
  'Simple Statement or URL',  
  style: TextStyle(  
    color: Colors.red[200],  
  ),  
),  
),  
s.star,  
r: Colors.red[500],  
Text('23'),
```

# devfest



## Ingredients



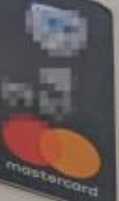
Time  
patience

Computer Internet

Pencil and Paper

Device to  
test  
(optional)

25 USD



```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.green[200],  
  ),  
)  
,  
s.star,  
r: Colors.green[500],  
Text('23'),
```

# devfest

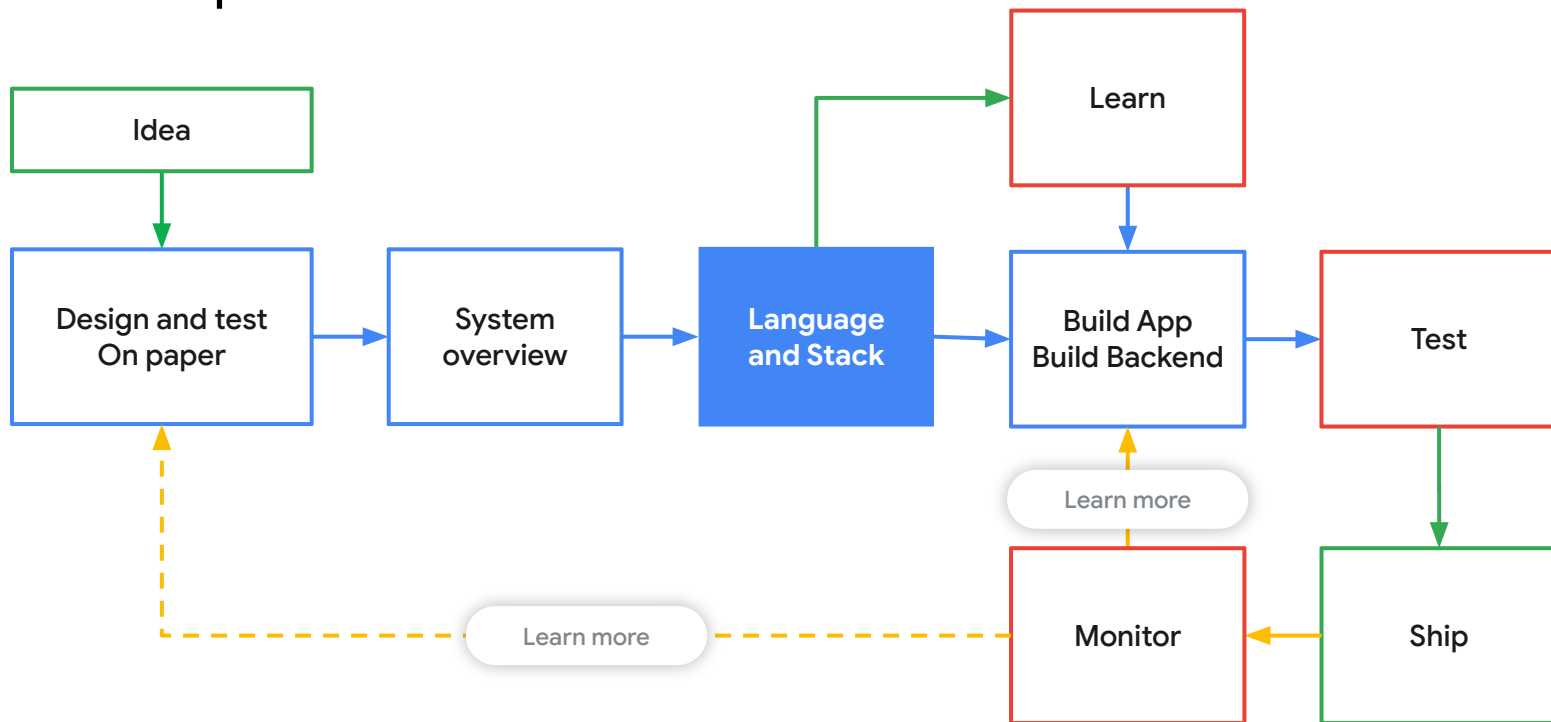


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# A map with resources

+ Compose focus

# The map

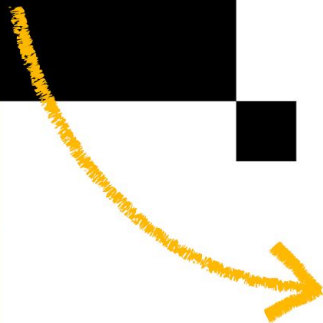


```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.blue[200],  
  ),  
),  
s.star,  
r: Colors.blue[500],  
Text('23'),
```

# devfest

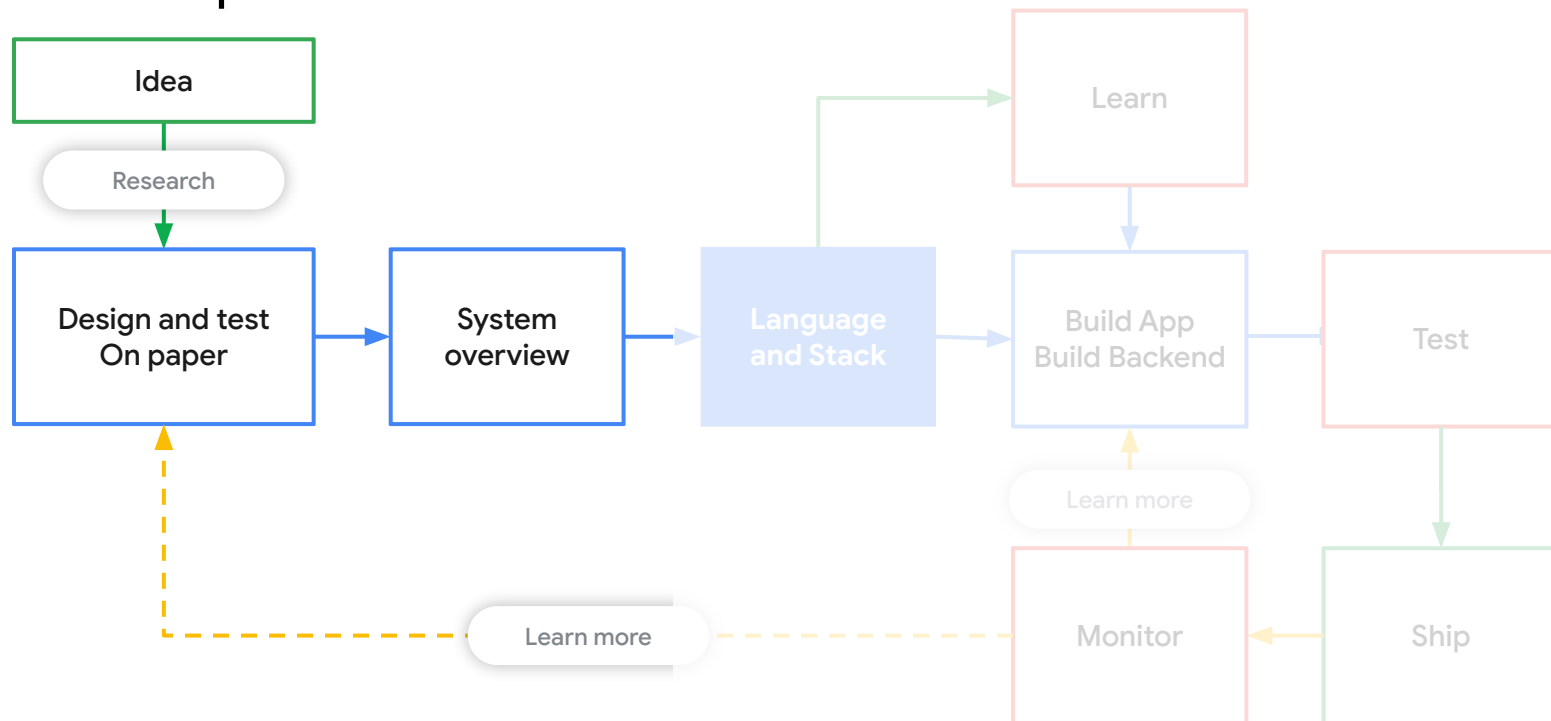


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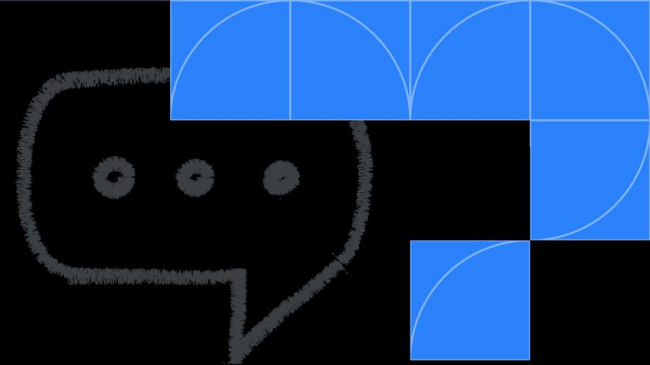


## From idea to design to overview

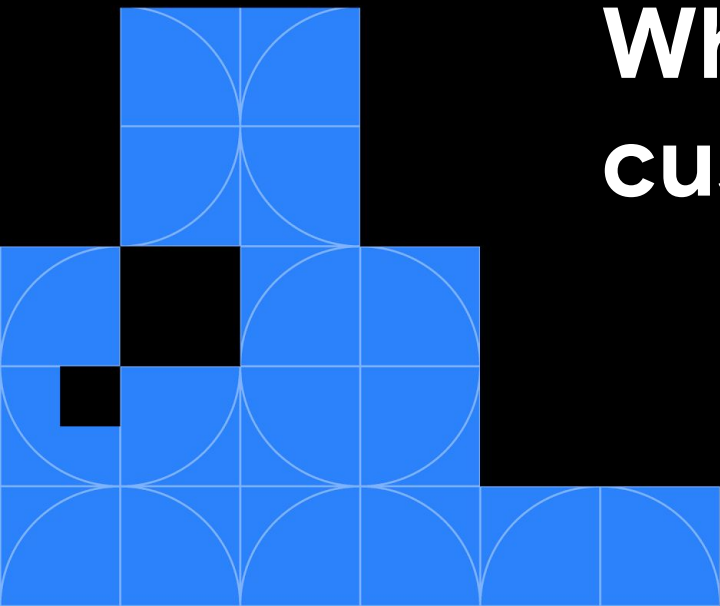
# The map



# devfest



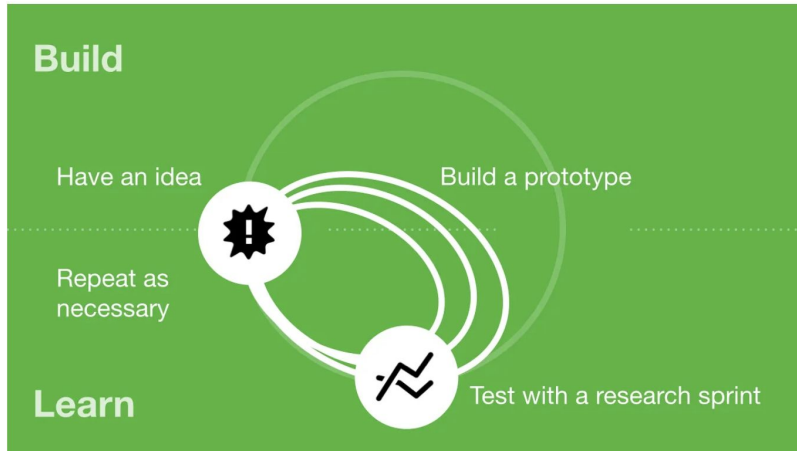
# What does your customer(you) need?





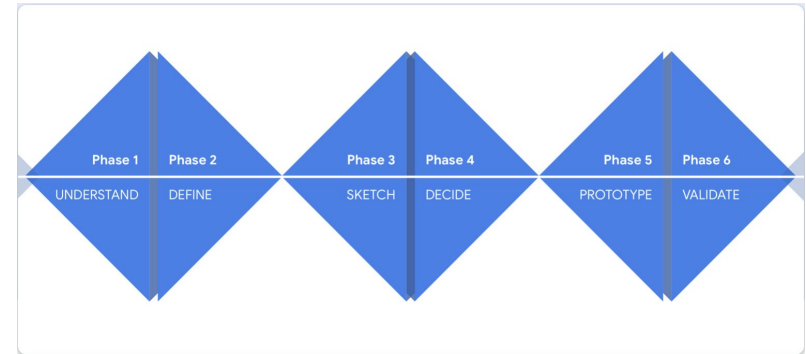
# Sprint

Research Sprint (4 days)



Design Sprint (5 days)

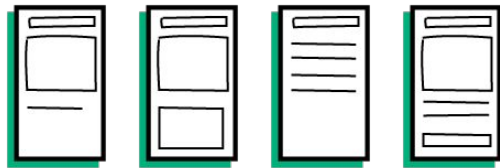
Paper prototype



# Answers

- **Who** are your target customers?
- What specific **characteristics** distinguish your target users?
- What **problems, needs, and motivations** do people have?
- Do people **understand** your product's value proposition?
- Can people **figure out how to use** your product?
- Why do people stop using your product?

Design solution to a problem

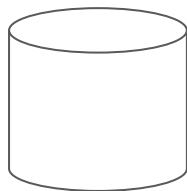




What does the API  
look like?



What data is  
stored remotely?  
Do we need user  
login?



What data is  
stored locally?

```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.green[200],  
  ),  
),  
),  
s.star,  
r: Colors.green[500],  
Text('23'),
```

# devfest

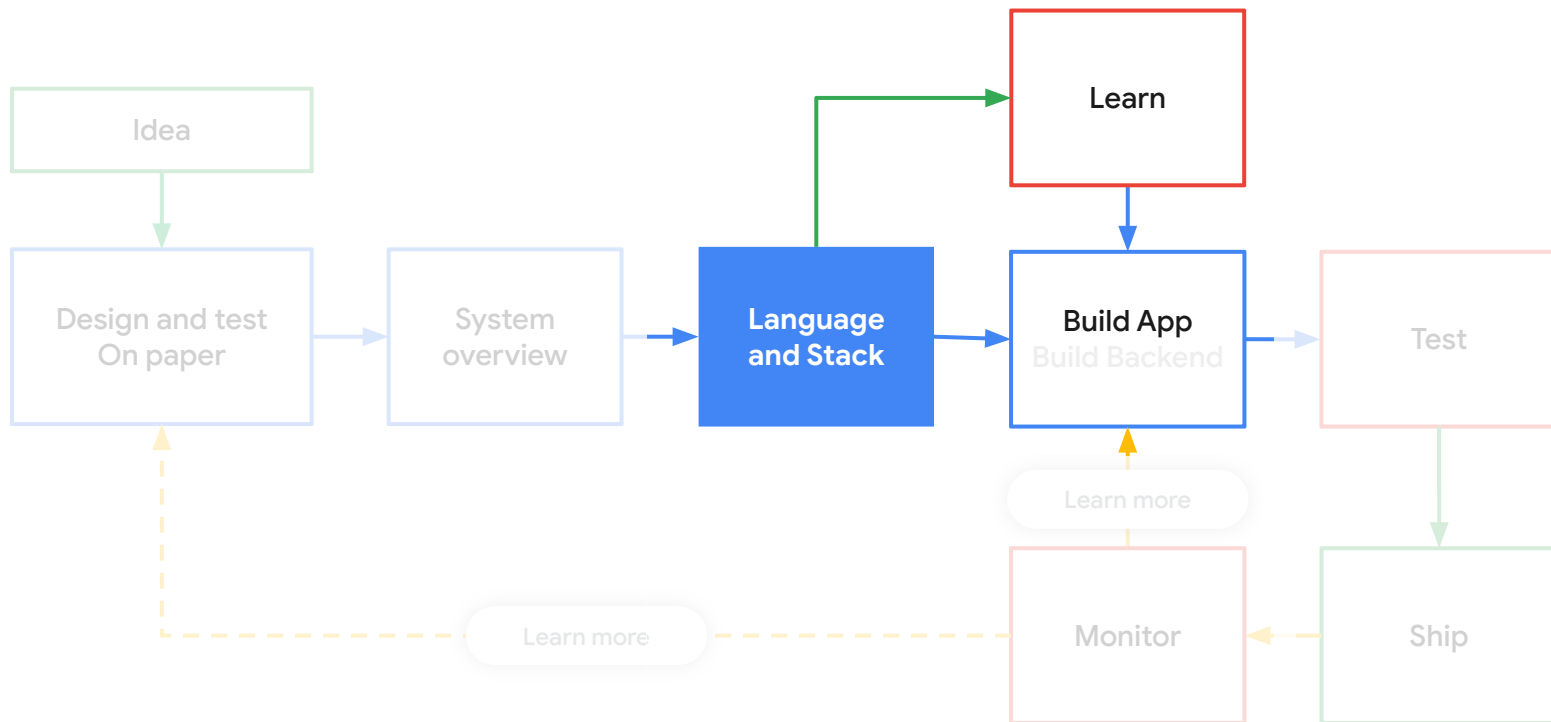


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# Choices, Learn, Build

Frontend

# The map



# Frontend questions

Android &/ iOS?

Web? Desktop?

Dart or Kotlin?

Flutter or  
Kotlin Multiplatform?

SwiftUI

~~views?~~  
Compose

Flutter

# Frontend questions

**Android** &/ iOS?

Web?

Dart or **Kotlin**?

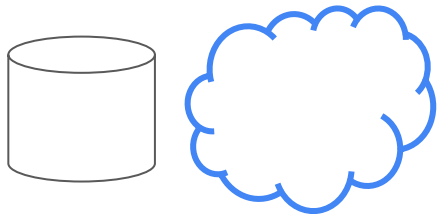
Flutter or  
Kotlin Multiplatform?

SwiftUI

**Compose**

Flutter

## Architecture



Data Layer

Domain Layer  
optional

## Sample

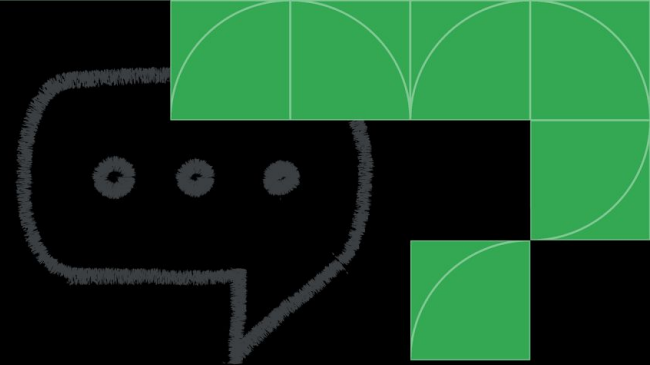


UI Layer

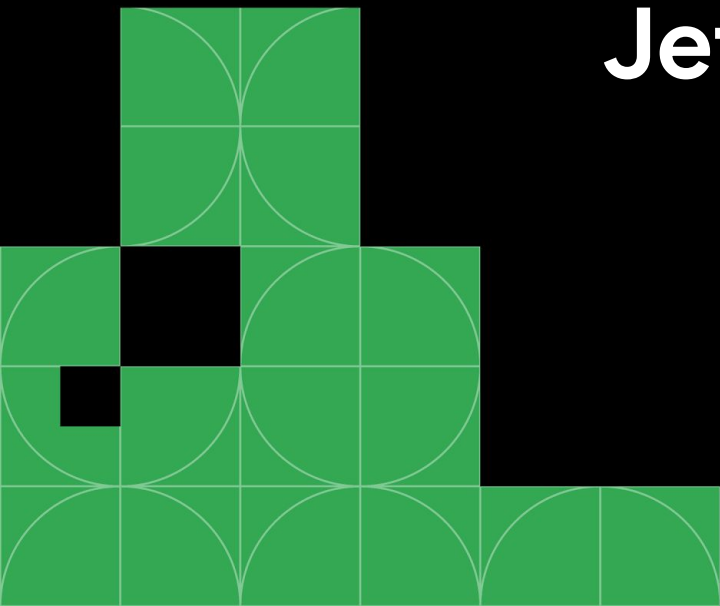


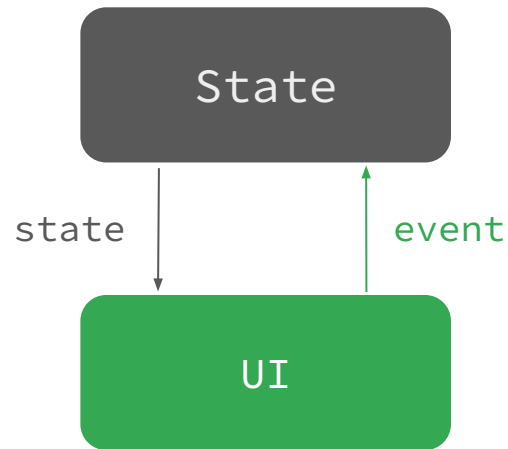
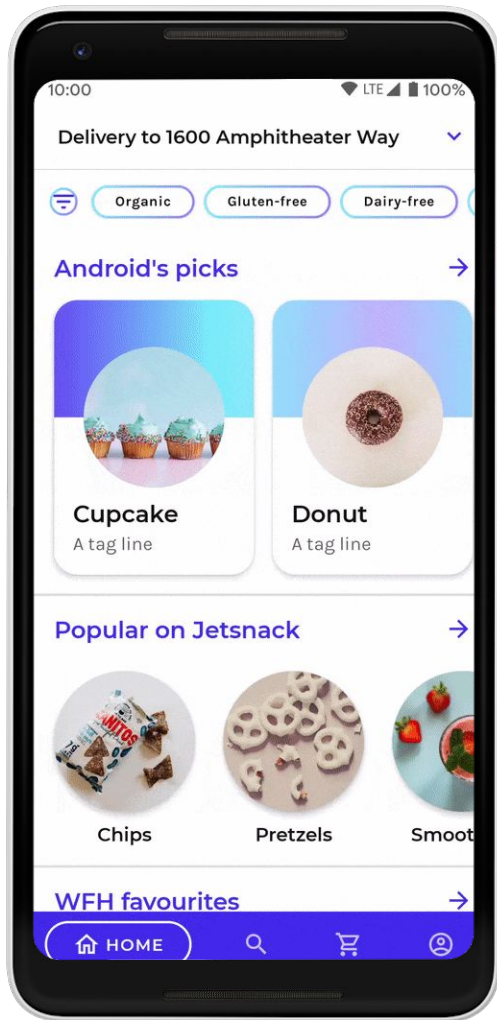
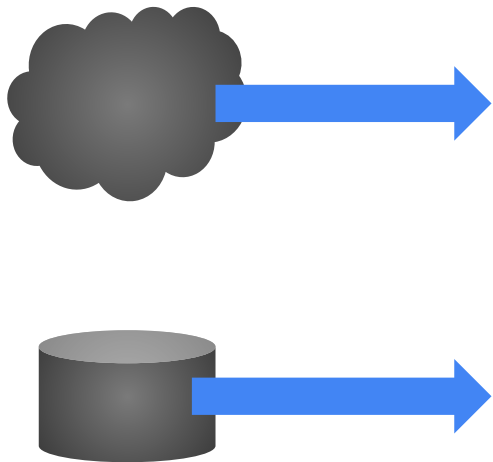
```
Text(  
    'Simple Statement or URL',  
    style: TextStyle(  
        color: Colors.green[200],  
    ),  
),  
),  
s.star,  
r: Colors.green[500],  
Text('23'),
```

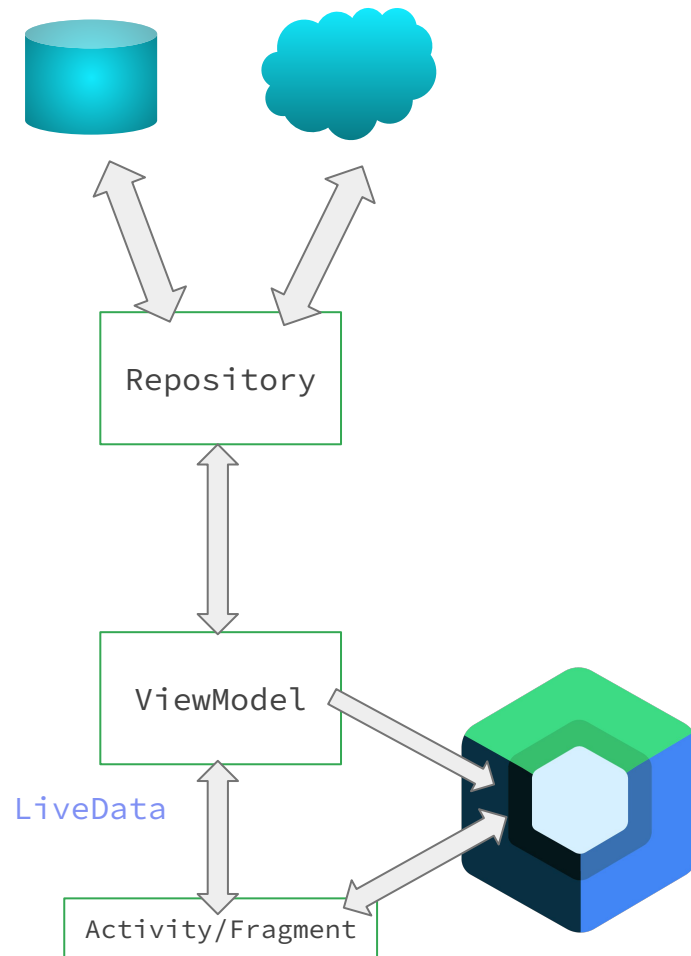
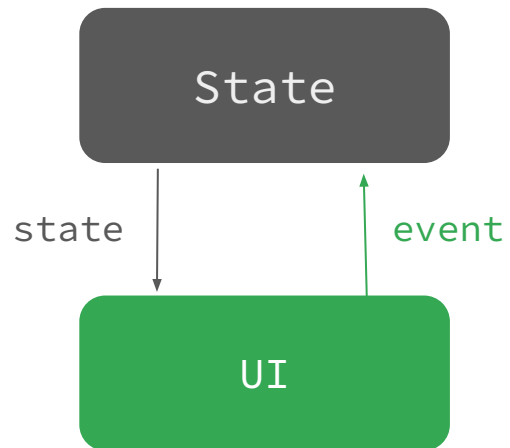
# devfest



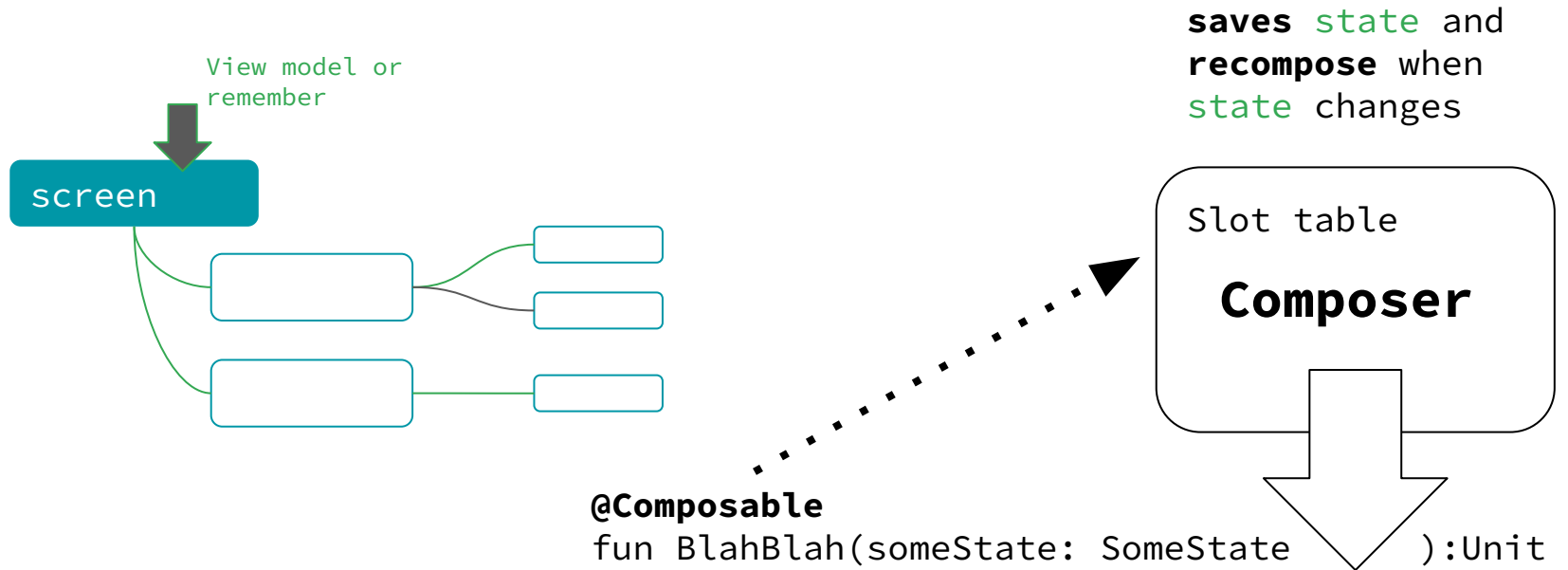
# Jetpack Compose





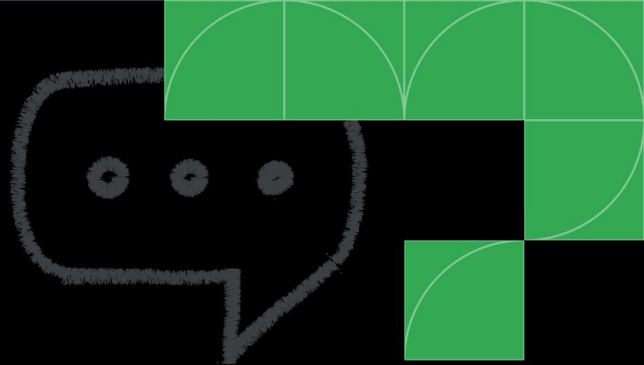


# Basics of Compose

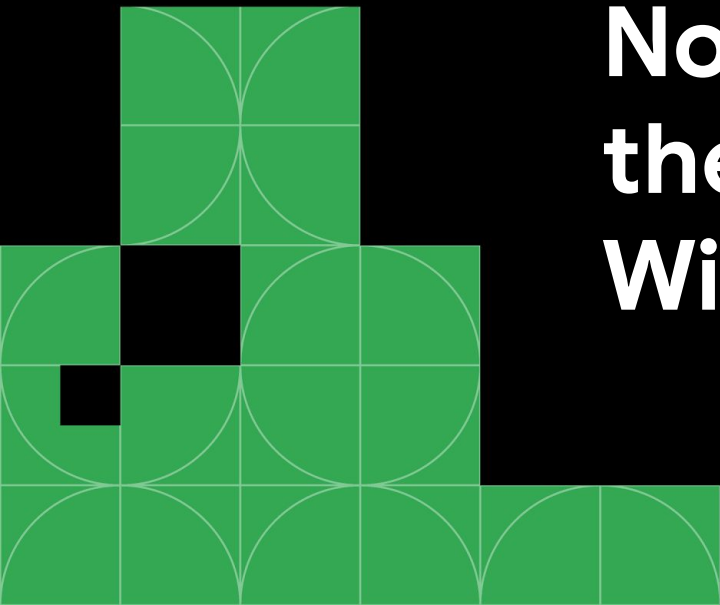


```
Text(  
    'Simple Statement or URL',  
    style: TextStyle(  
        color: Colors.green[200],  
    ),  
),  
),  
s.star,  
r: Colors.green[500],  
Text('23'),
```

# devfest

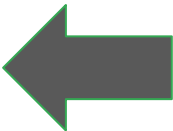


## Now is the time to run the Android Studio Wizard



```
class MainActivity : ComponentActivity() {  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView {  
            Text("Hello world!")  
        }  
    }  
}
```

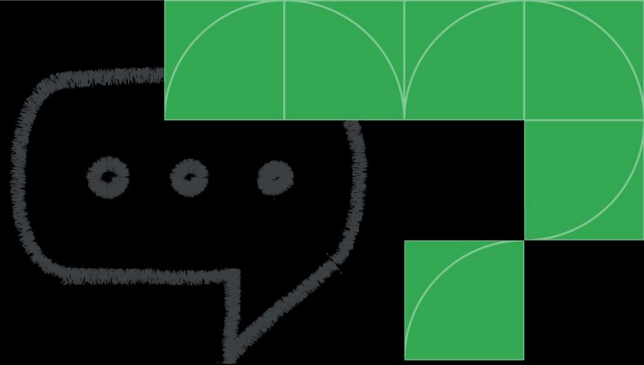
```
class MainActivity : ComponentActivity() {  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContent {  
            Text("Hello world!")  
        }  
    }  
}
```

```
class MainActivity : ComponentActivity() {  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContent {  
            Text("Hello world!")  // We are in compose land  
        }  
    }  
}
```

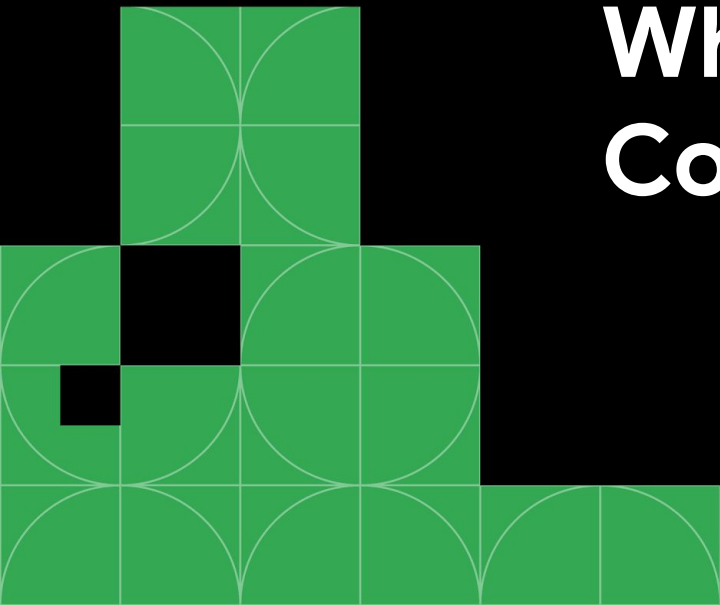


```
Text(  
  'Simple Statement or URL',  
  style: TextStyle(  
    color: Colors.green[200],  
  ),  
),  
),  
s.star,  
r: Colors.green[500],  
Text('23'),
```

# devfest



## What - Components

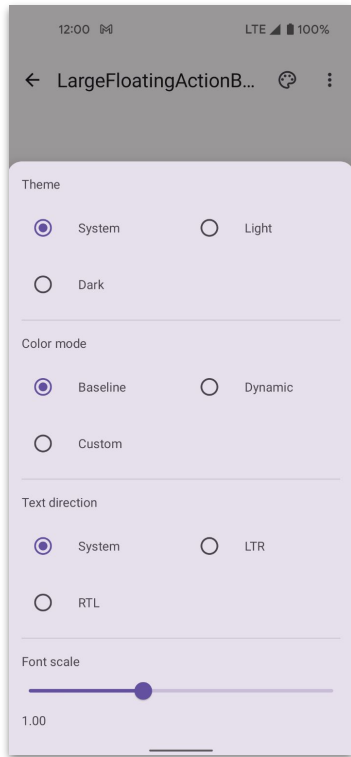
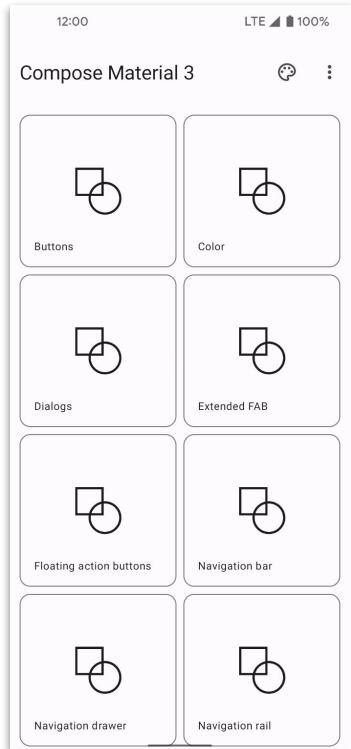


# Components

```
Text("Hello World")
```

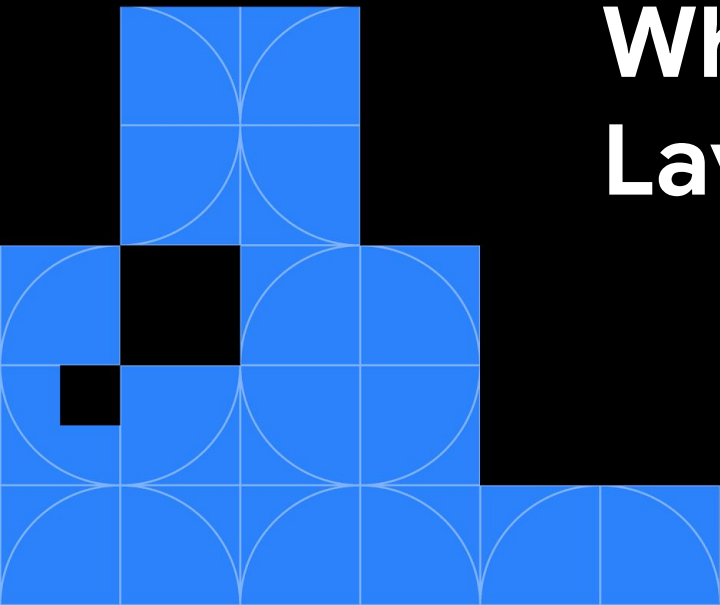
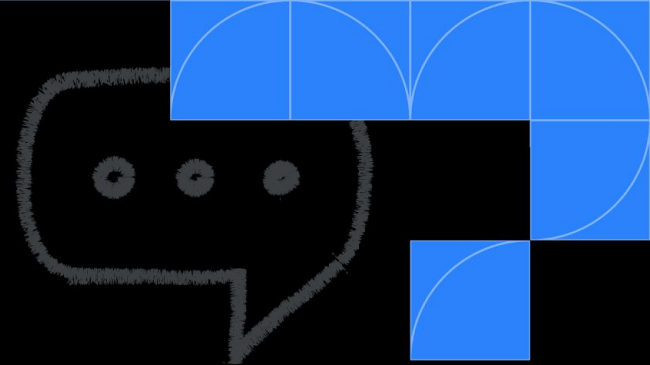
```
Button(onClick = {...}) {  
    Text("Click me")  
}
```

```
Spacer(...)
```



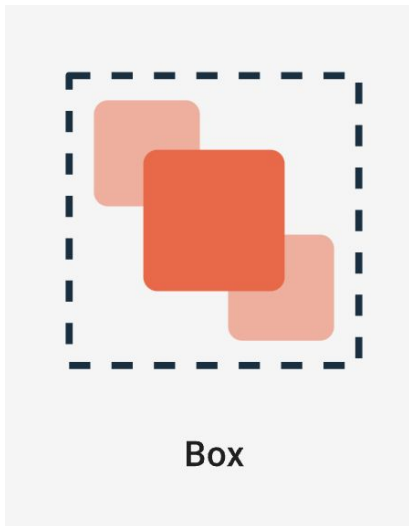
devfest

# Where - Layouts

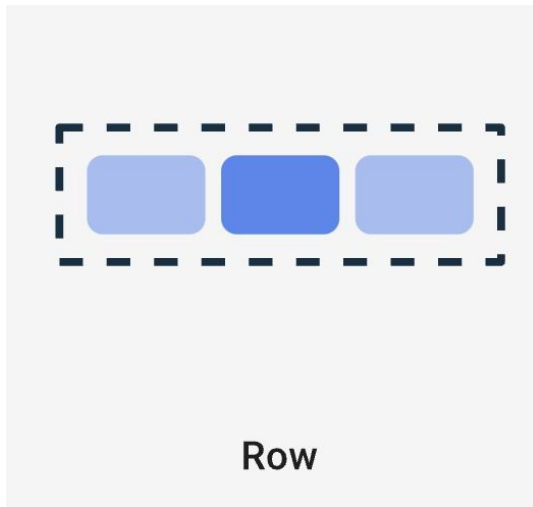


# Layout

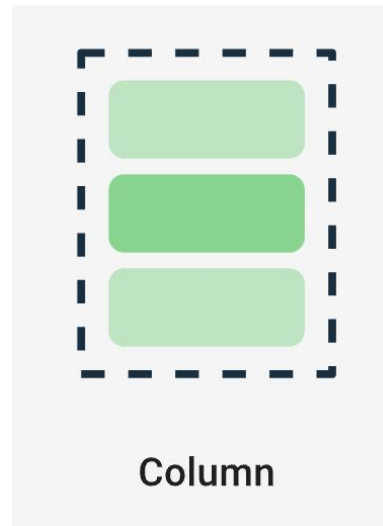
[Compose Layout Documentation](#)



Box { . . . }



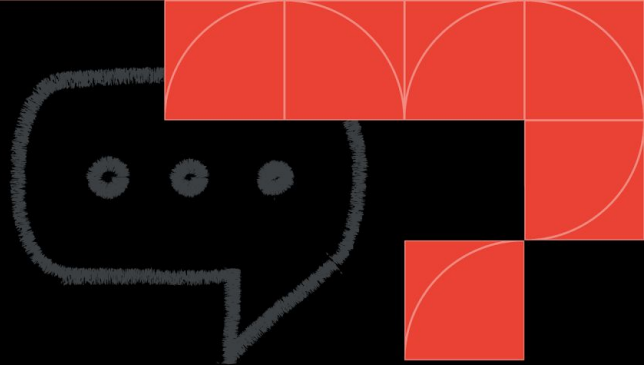
Row { . . . }



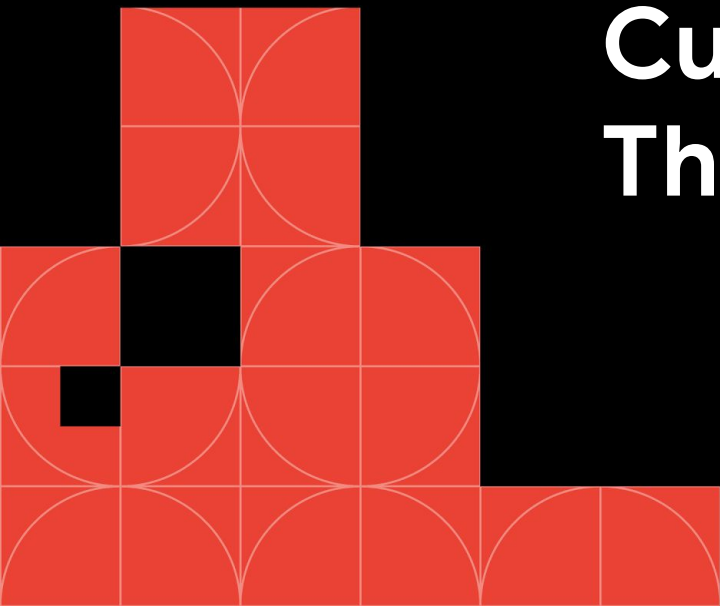
Column { . . . }

```
Text(  
  'Simple Statement or URL',  
  style: TextStyle(  
    color: Colors.red[200],  
  ),  
),  
),  
s.star,  
r: Colors.red[500],  
Text('23'),
```

# devfest



## Customise - Themes and Modifiers



# Modifiers

[list](#)

```
Row(modifier = Modifier.fillMaxWidth().padding(8.dp)) { . . . }
```

```
Button(modifier = Modifier.size(56.dp).padding(8.dp)) { . . . }
```

```
Column(modifier = Modifier.background(Color.LightGray))  
{ . . . }
```

# Themes and design systems

[Docs](#)

Material [2](#) or [3](#)  
or  
[Custom design](#)

Color

Typography

Shape

```
MyTheme {  
    MyCustomScreen()  
}
```

```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.yellow[200],  
  ),  
)  
,  
s.star,  
r: Colors.yellow[500],  
Text('23'),
```

# devfest

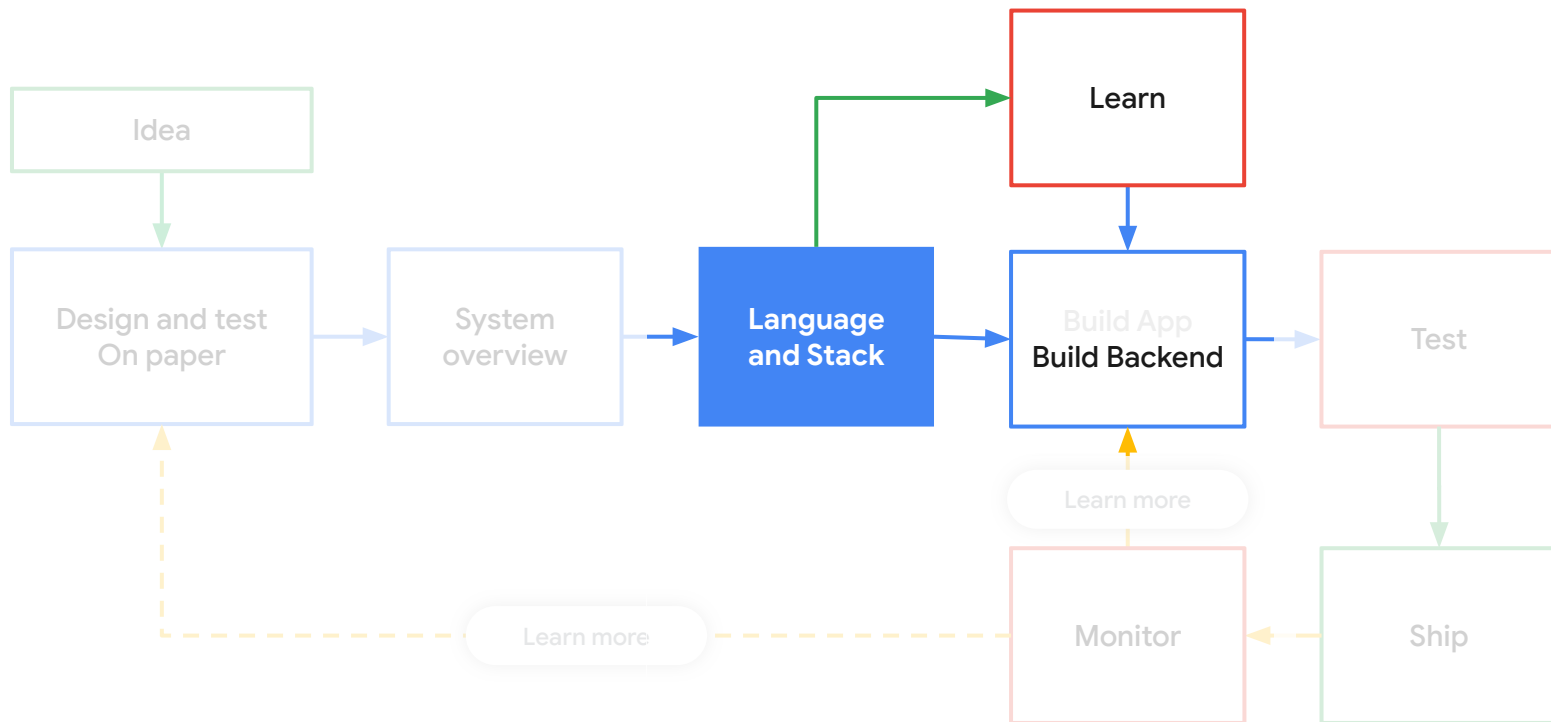


# Choices, Learn, build

Backend



# The map



# Backend questions

Who will build it?

Existing systems?

Requirements?



Firebase

# Firestore features

[Docs](#) to integrate features in the app

Connect your project on [Firestore Console](#)

Try out the [spark](#) plan.

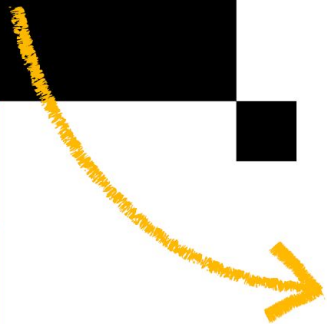
1. Realtime Database
2. User Authentication
3. Push notifications
4. Remote config
5. And more



# Firestore

```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.red[200],  
  ),  
),  
),  
  
s.star,  
r: Colors.red[500],  
  
Text('23'),
```

# devfest



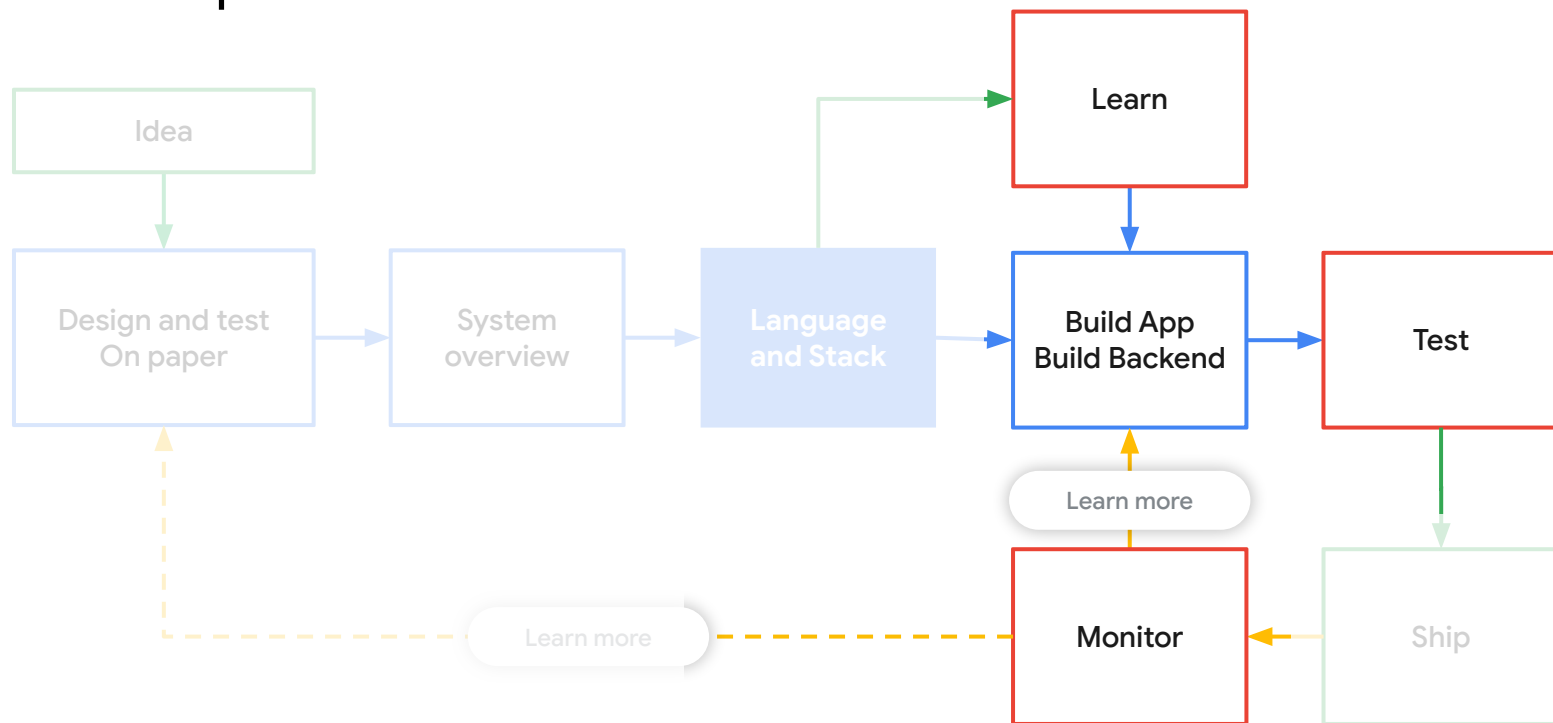
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# Quality matters

Testing and  
monitoring

# The map



# Testing

[docs](#)

## JVM

- Unit testing
- Integration testing
- UI testing - screenshot
- Robolectric

## Device or emulator

- Android specific e.g. db
- Manual testing
- Exploratory testing
- UI tests
- Firebase Test Lab
- Espresso

# Monitoring

- Crashlytics
- Google Analytics
- Performance Monitoring



```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.blue[200],  
  ),  
),  
),  
s.star,  
r: Colors.blue[500],  
Text('23'),
```

# devfest



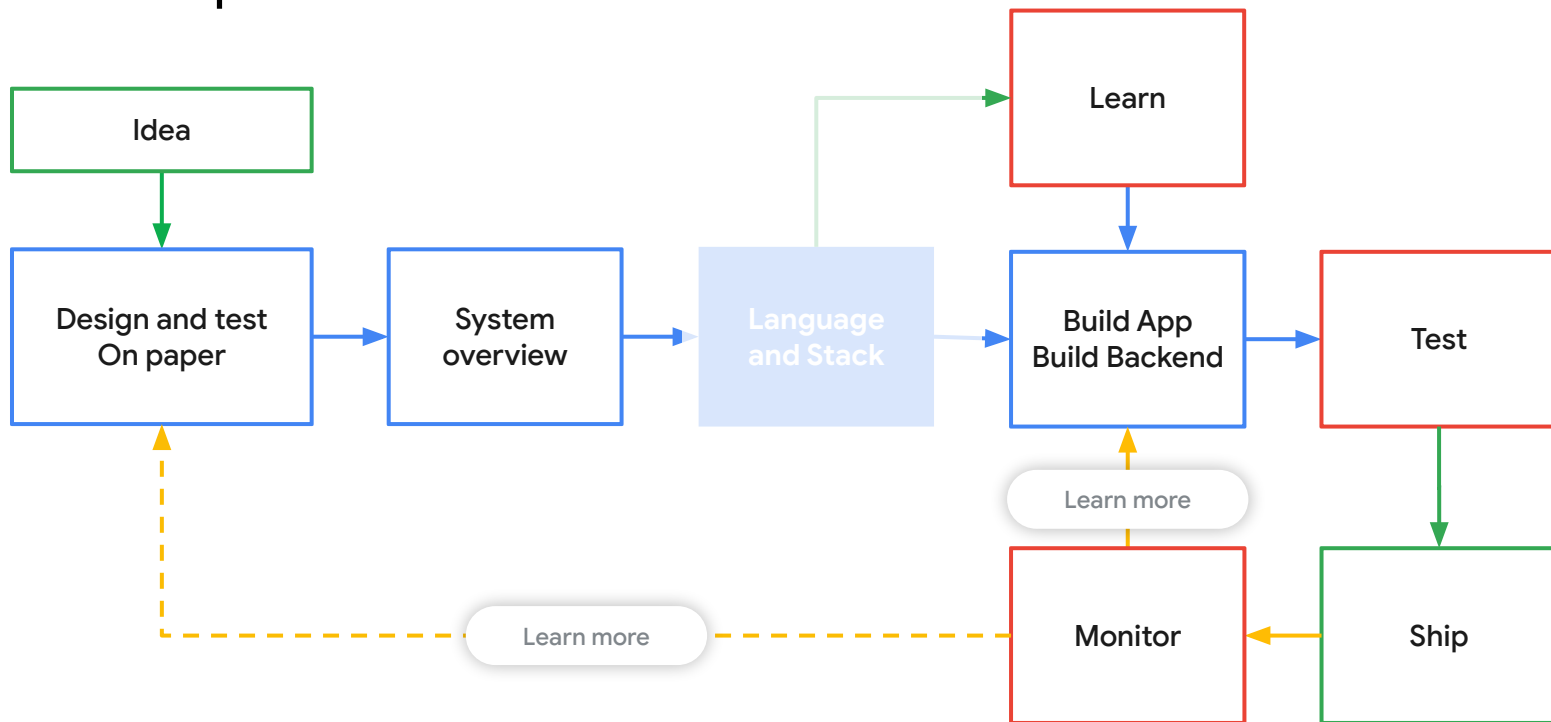
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# Ship it!

More Testing and  
monitoring



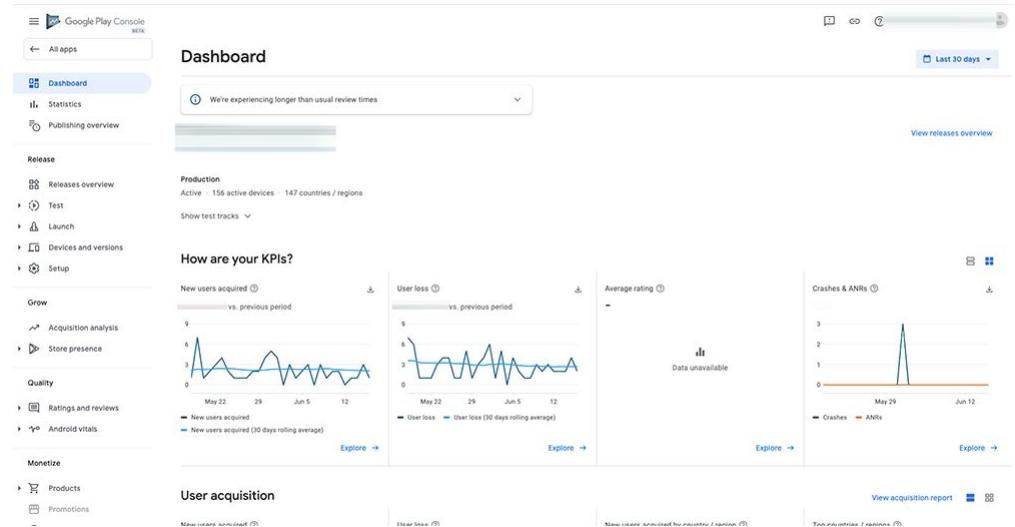
# The map



# Google Play



1. Make an email for the developer account
2. [Register developer account \(25USD\)](#)
3. Setup app and store listing
4. [Build a release version](#)
5. Upload APK
6. [Test](#)
7. Monitor



```
// You'll need  
// com.google.  
listRef.listAll  
.addOn  
    prefixes.  
    // All  
    // You  
}  
  
it  
    ch { item  
    the items  
}  
}
```

# devfest



## Thank you!



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Maia Grotepass