Uniwersytet Wrocławski

Rafał Lewandków

PROGRAMOWANIE URZĄDZEŃ MOBILNYCH

WYKŁAD 5
Jetpack Compose

- Fundamenty
- Komponenty
- @Composable
- MutableState

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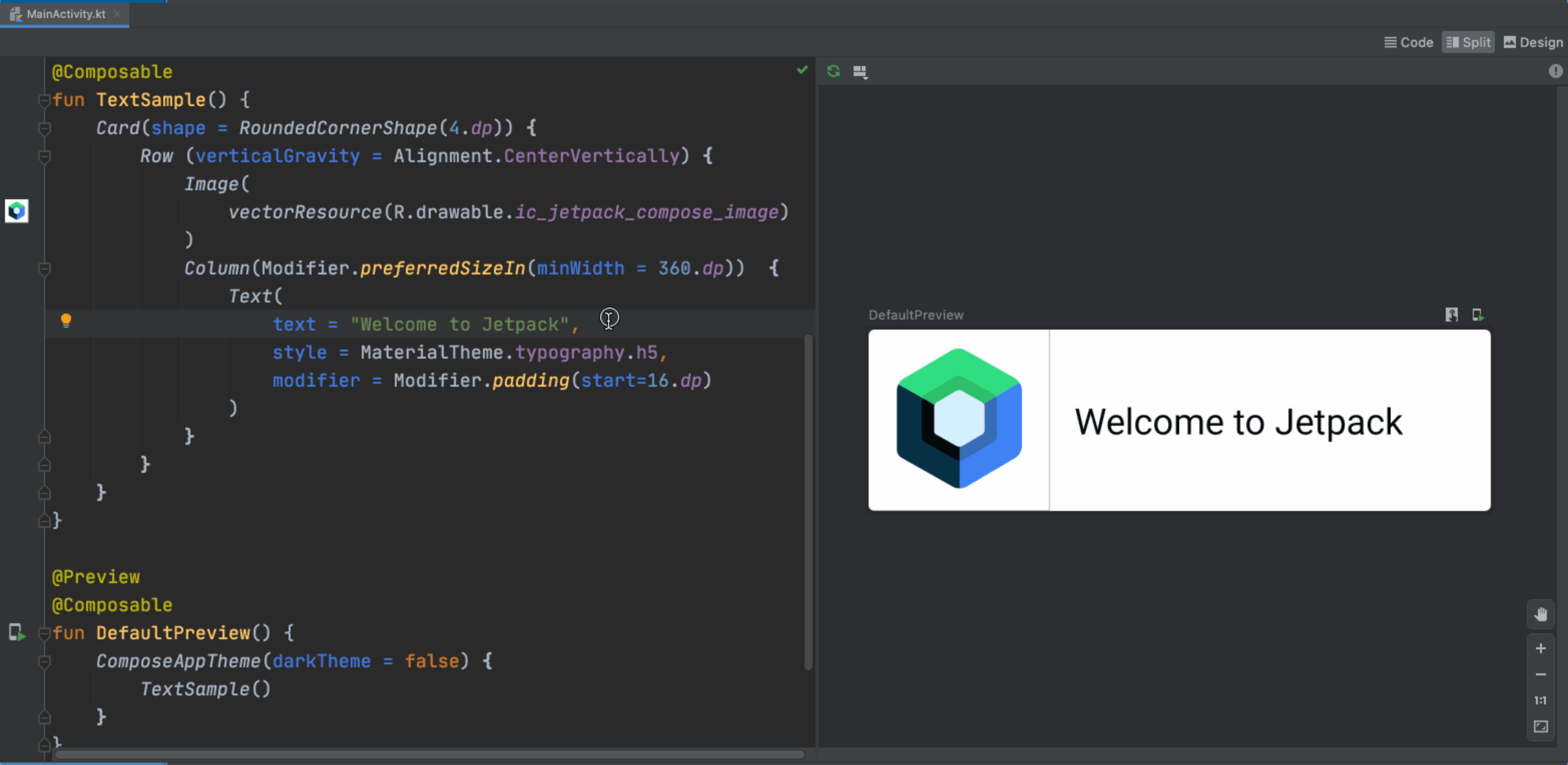
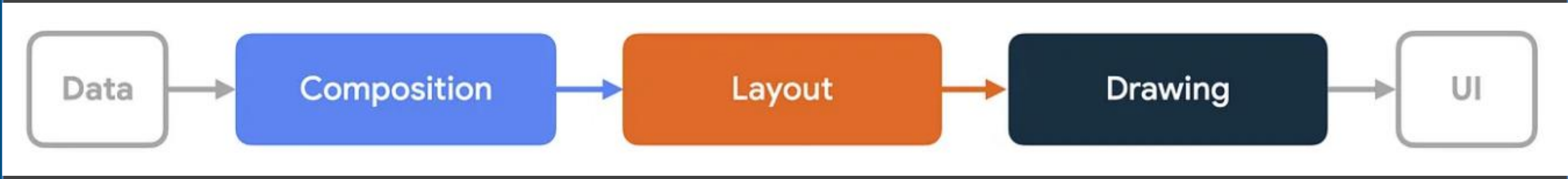
Jetpack Compose

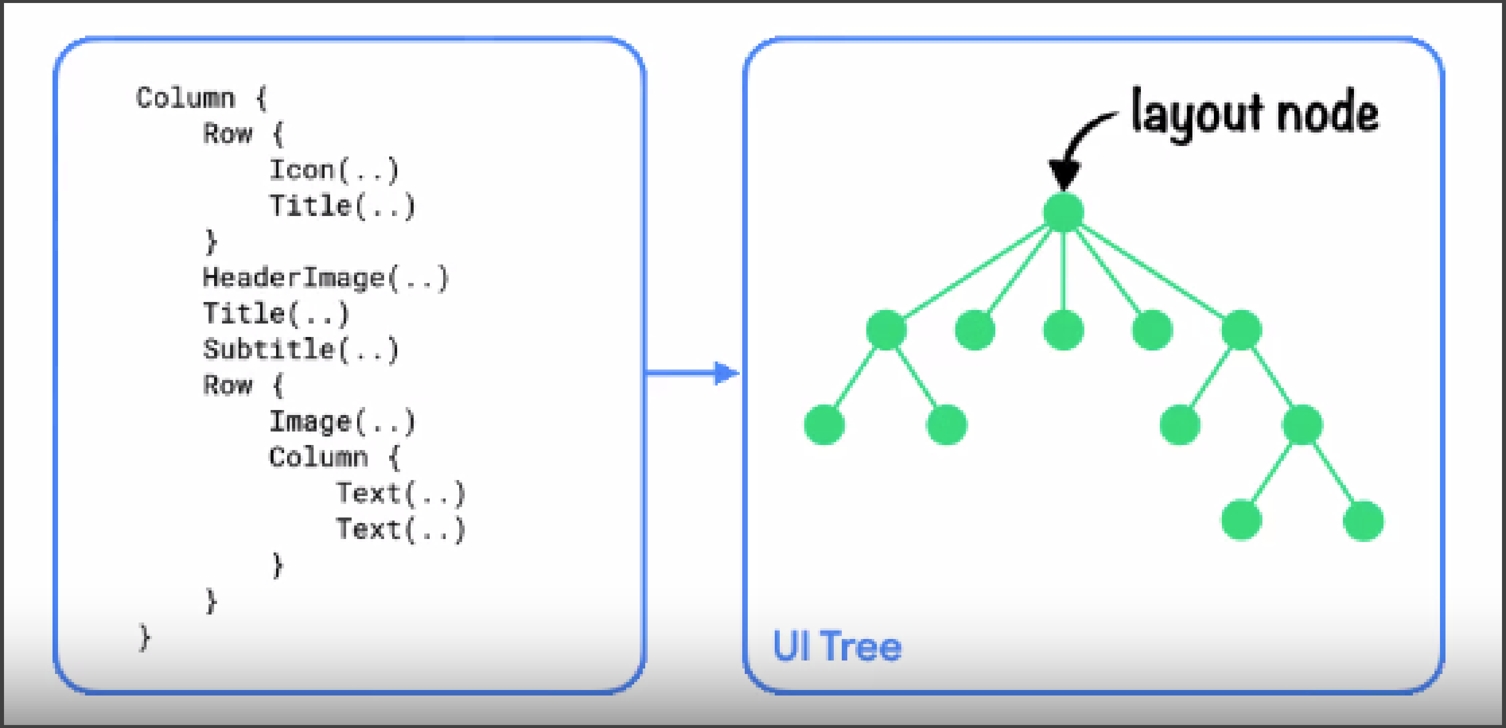


```kotlin
@Composable
fun TextSample() {
    Card(shape = RoundedCornerShape(4.dp)) {
        Row (verticalGravity = Alignment.CenterVertically) {
            Image(
                vectorResource(R.drawable.ic_jetpack_compose_image)
            )
            Column(Modifier.preferredSizeIn(minWidth = 360.dp))  {
                Text(
                    text = "Welcome to Jetpack",
                    style = MaterialTheme.typography.h5,
                    modifier = Modifier.padding(start=16.dp)
                )
            }
        }
    }
}

@Preview
@Composable
fun DefaultPreview() {
    ComposeAppTheme(darkTheme = false) {
        TextSample()
    }
}
```

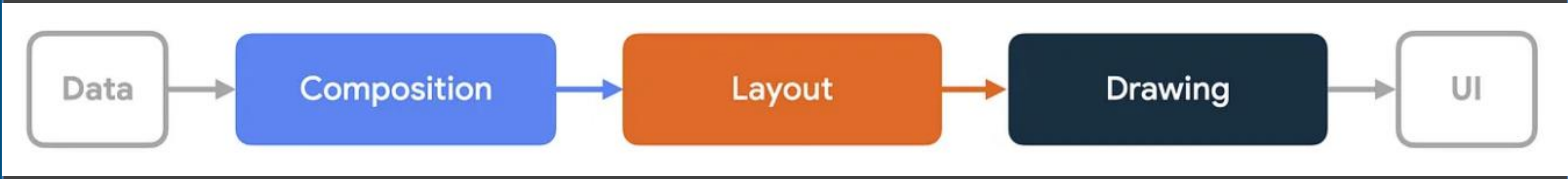
Jetpack Compose - Fazy

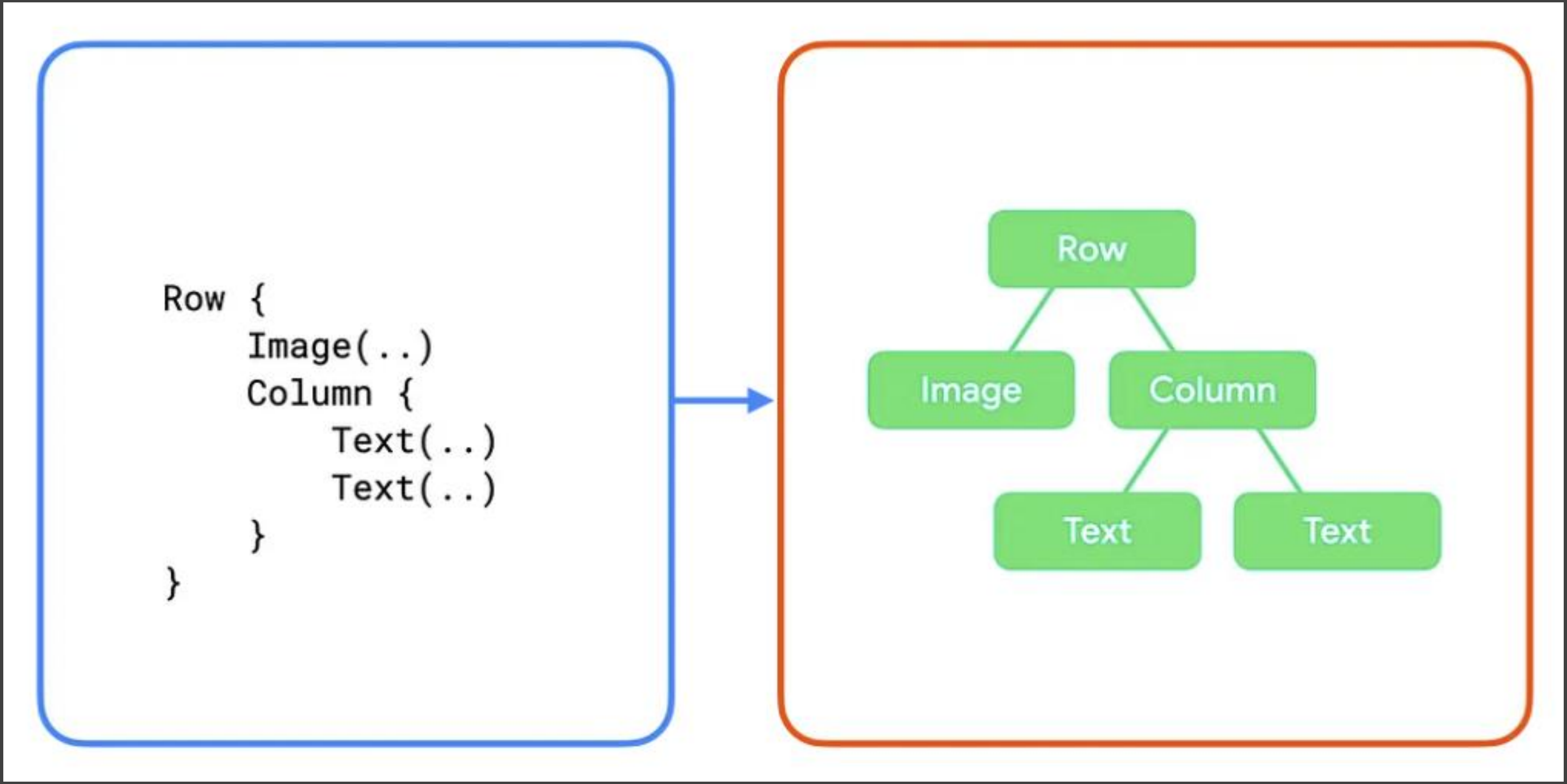




```
Column {
    Row {
        Icon(..)
        Title(..)
    }
    HeaderImage(..)
    Title(..)
    Subtitle(..)
    Row {
        Image(..)
        Column {
            Text(..)
            Text(..)
        }
    }
}
```

Jetpack Compose - Fazy





```
Row {
    Image(..)
    Column {
        Text(..)
        Text(..)
    }
}
```

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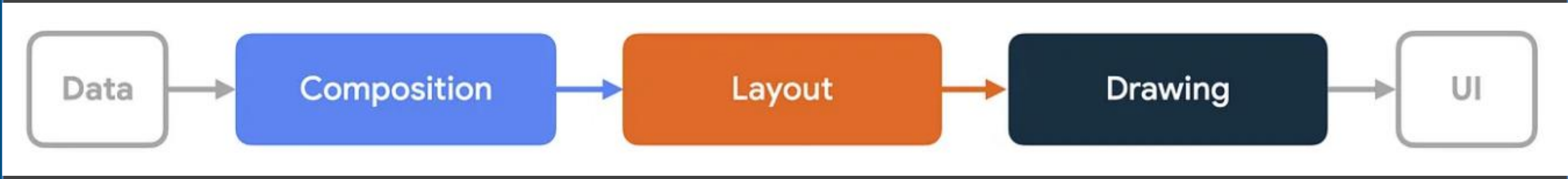
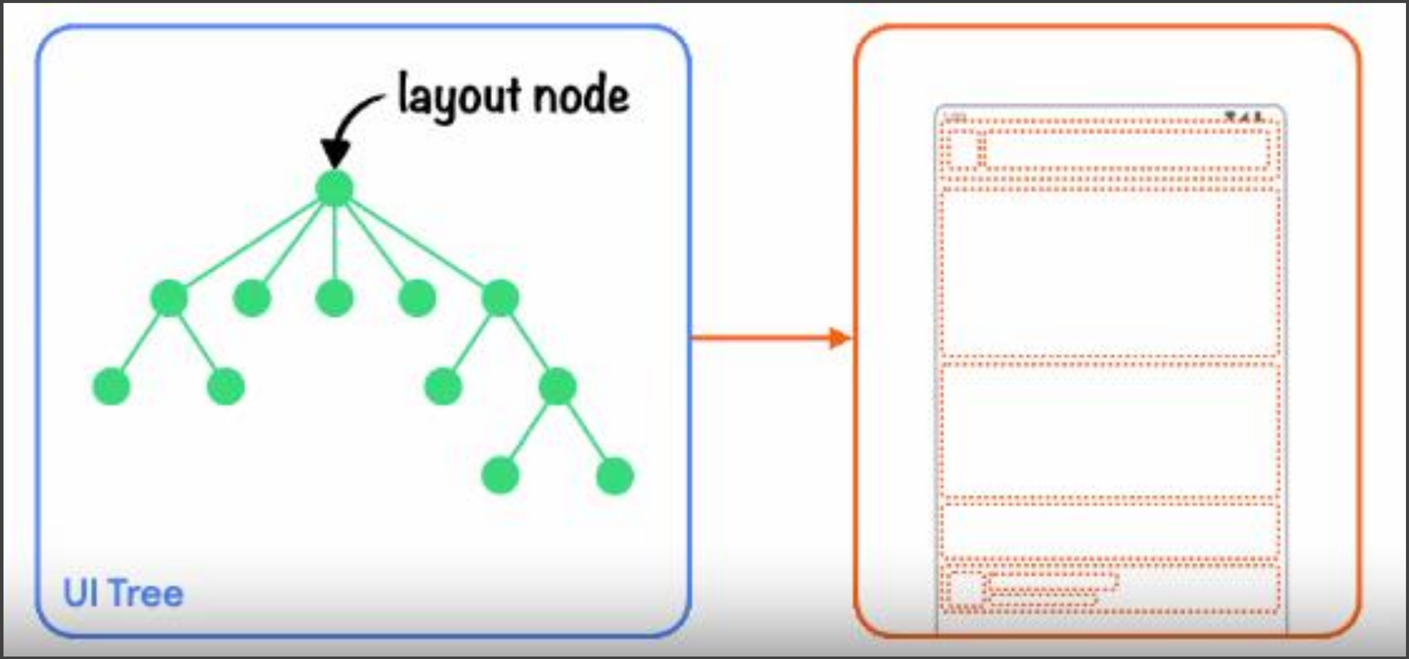
Jetpack Compose - Fazy





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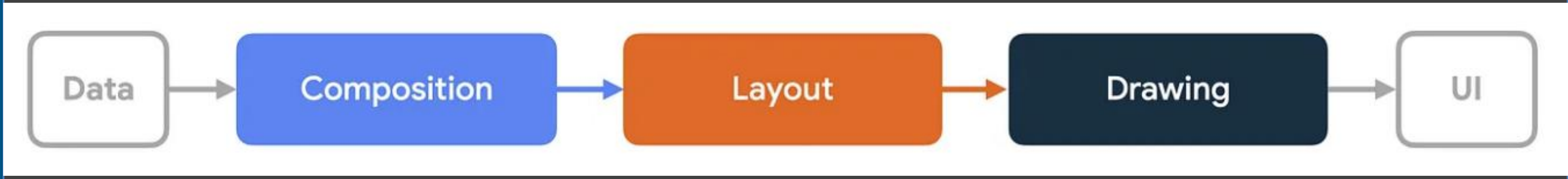
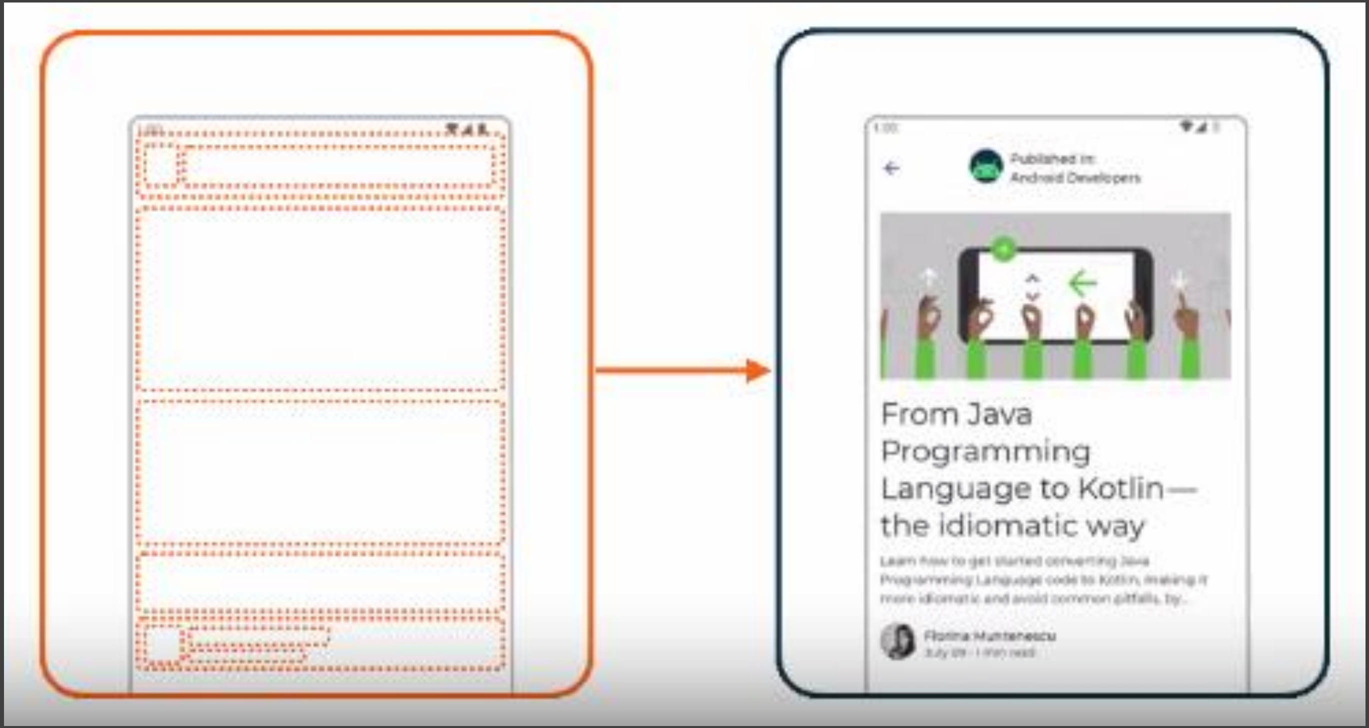
Jetpack Compose - Fazy




Published in:
Android Developers
From Java Programming Language to Kotlin— the idiomatic way
Learn how to get started converting Java Programming Language code to Kotlin, making it more idiomatic and avoid common pitfalls, by...
Florina Muntenescu

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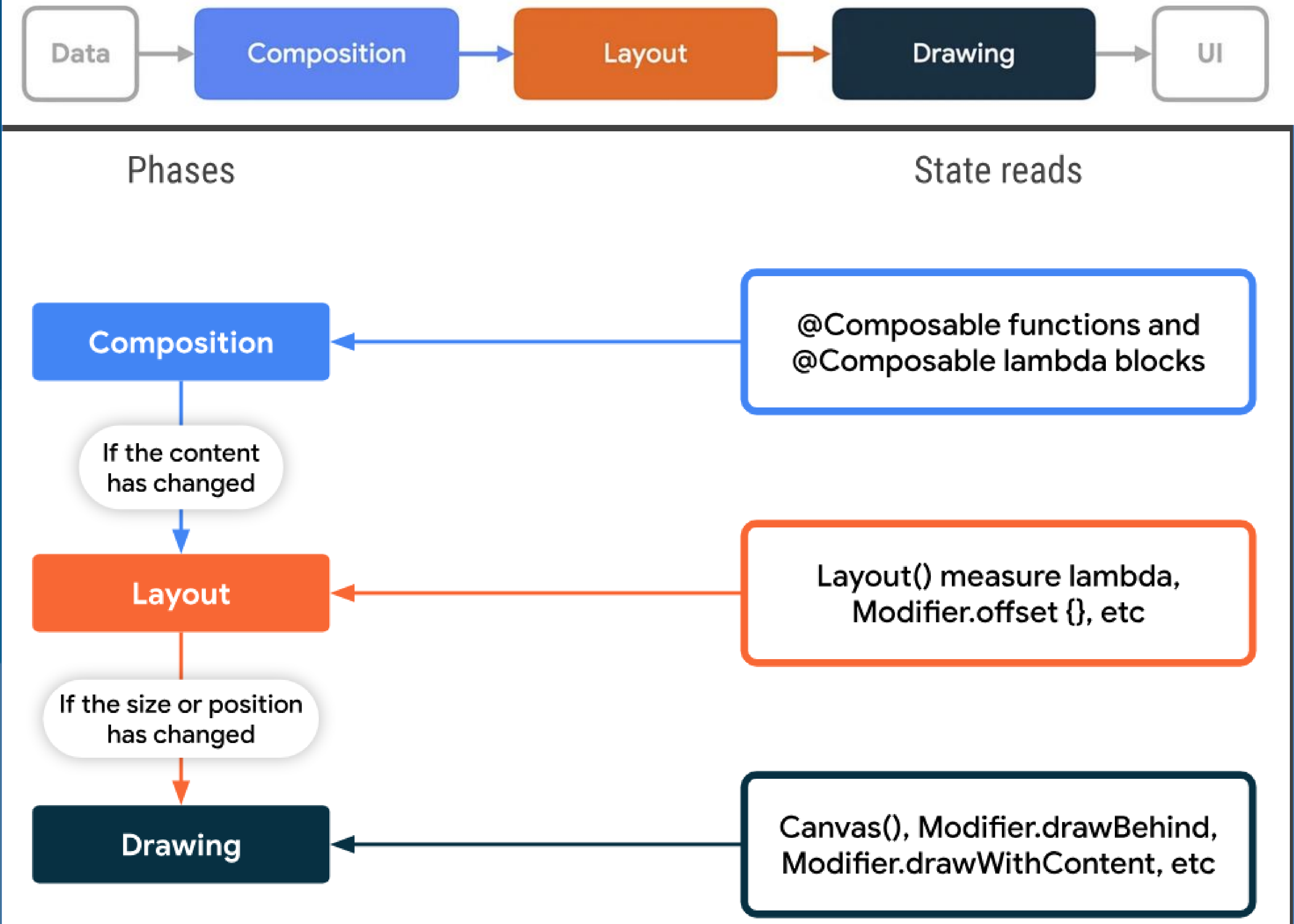
Jetpack Compose - Fazy



Data
Composition
Layout
Drawing
UI
Phases
State reads
Composition
If the content has changed
Layout
If the size or position has changed
Drawing
@Composable functions and @Composable lambda blocks
Layout() measure lambda, Modifier.offset {}, etc
Canvas(), Modifier.drawBehind, Modifier.drawWithContent, etc

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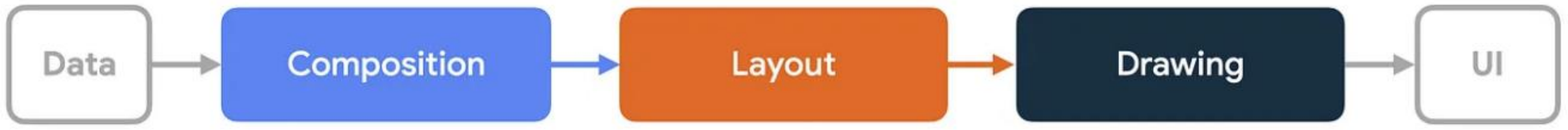
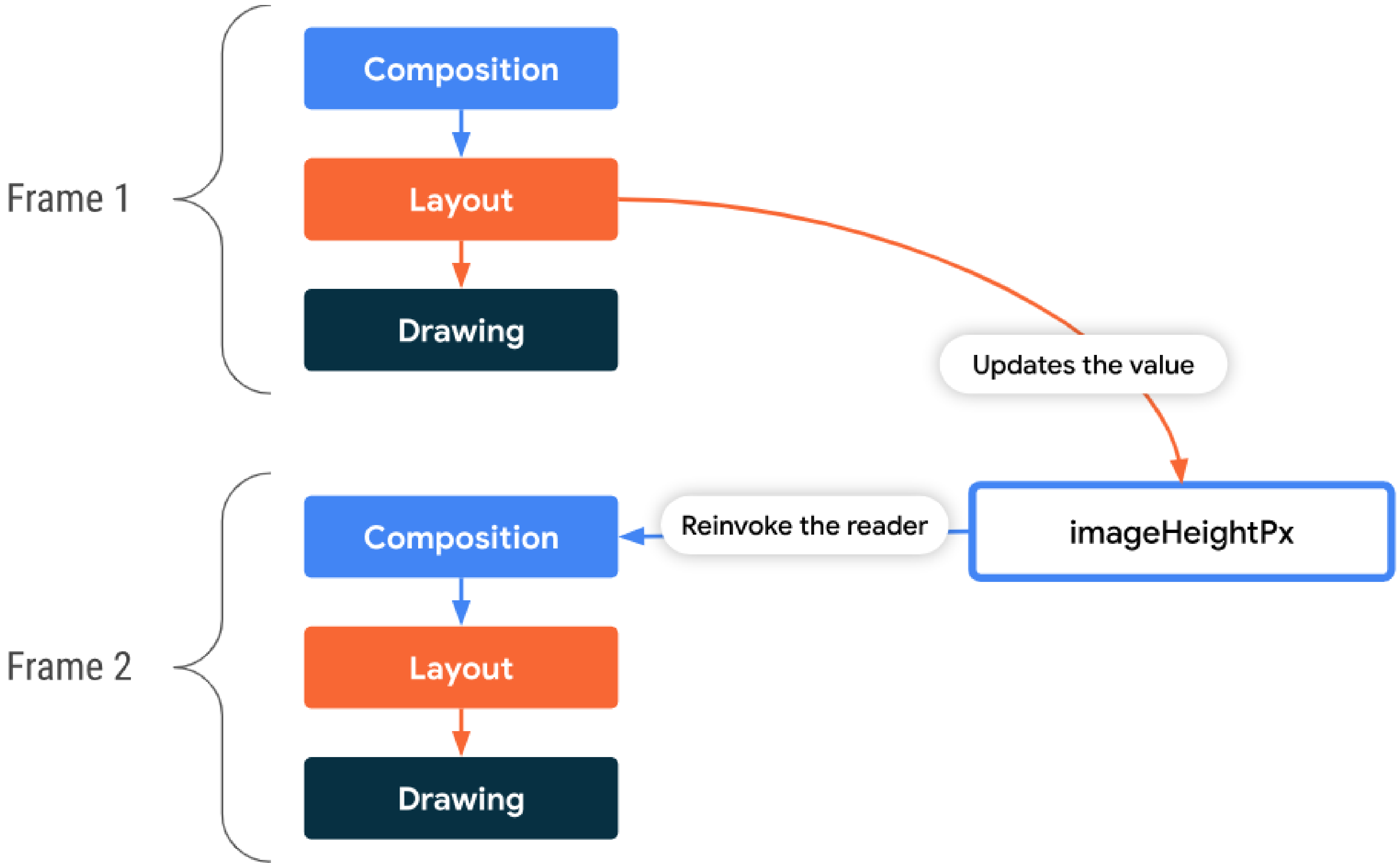
Jetpack Compose - Fazy





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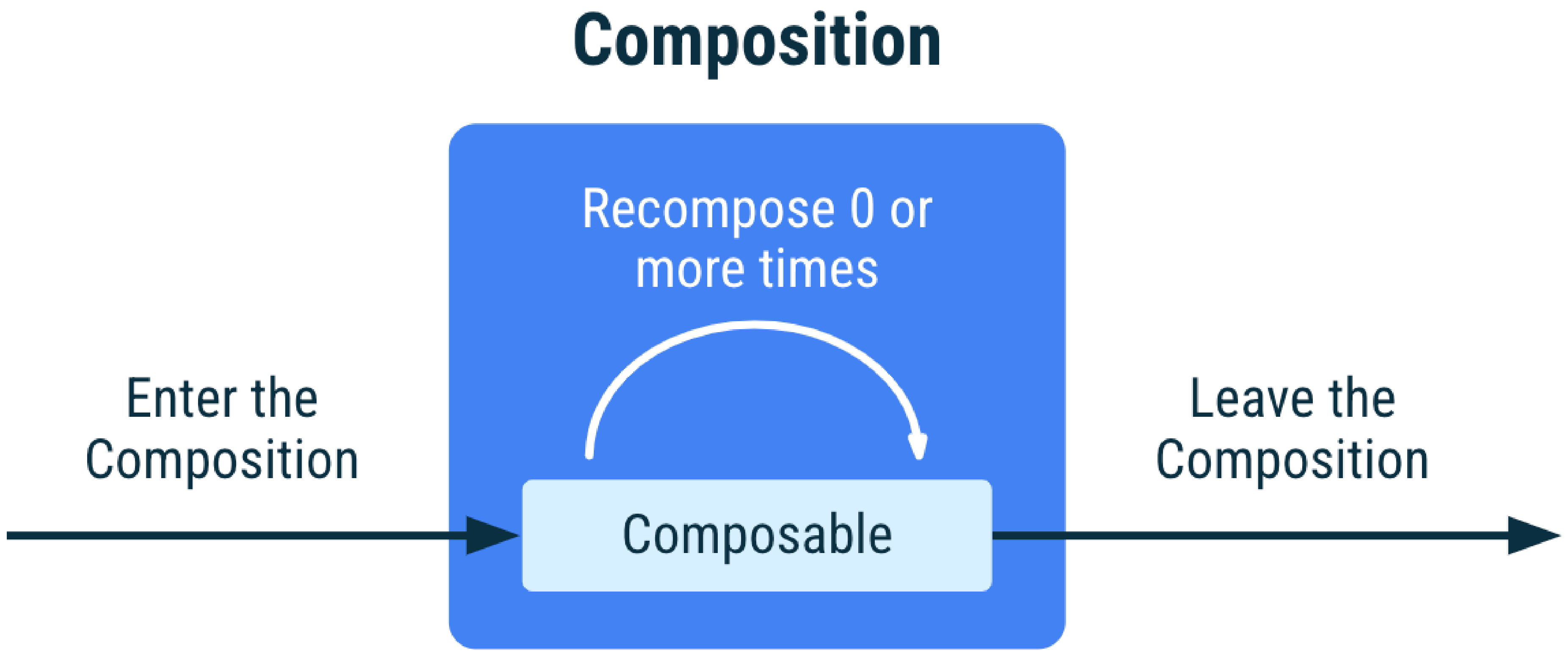
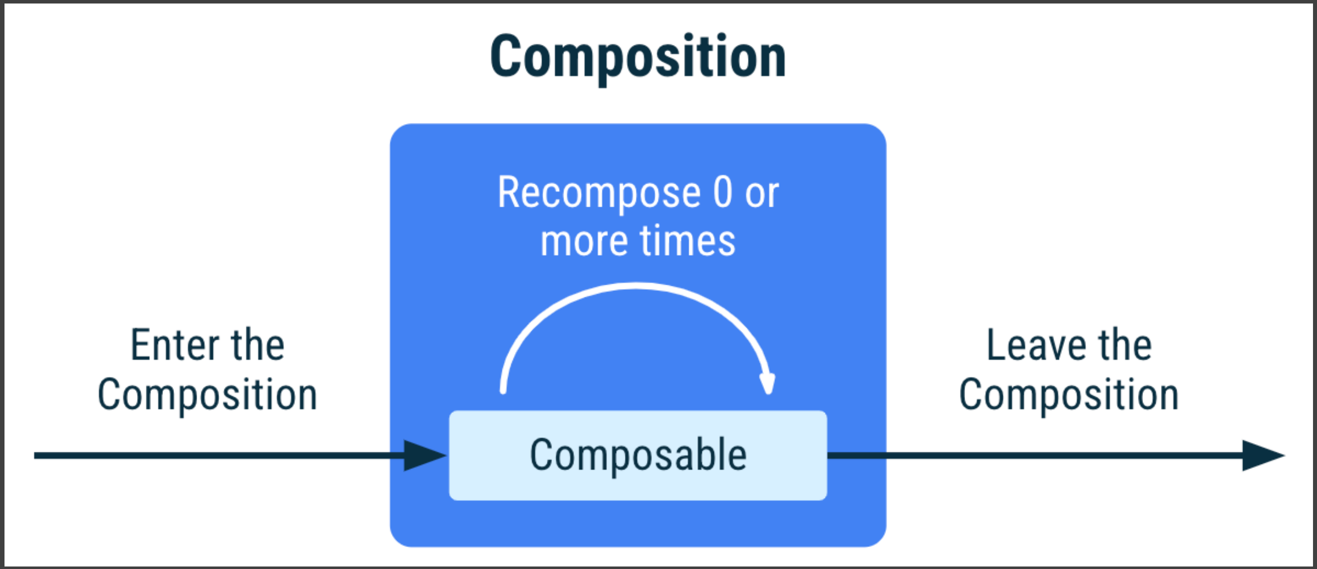
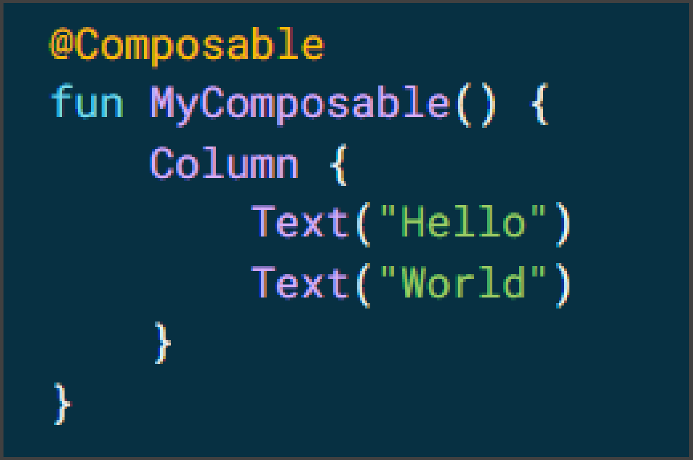
State

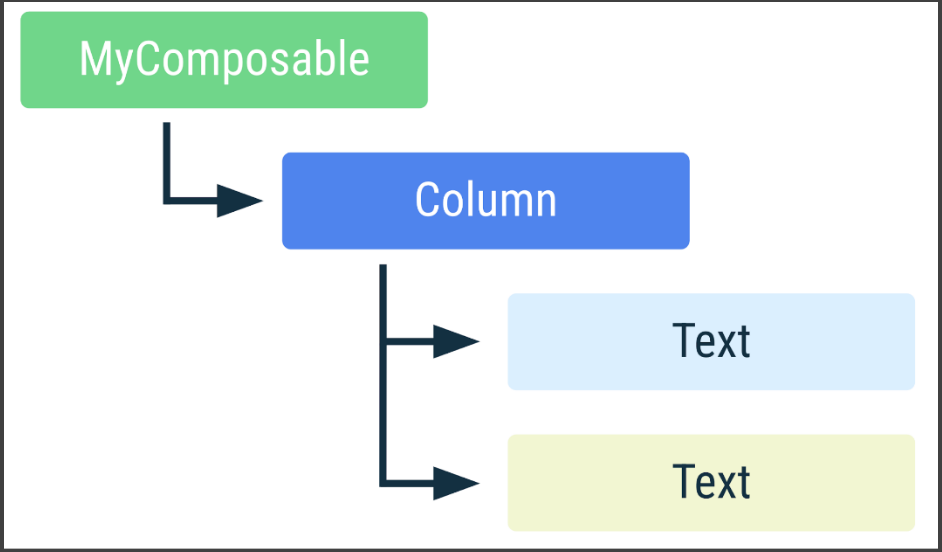


State





```
@Composable
fun MyComposable() {
    Column {
        Text("Hello")
        Text("World")
    }
}
```



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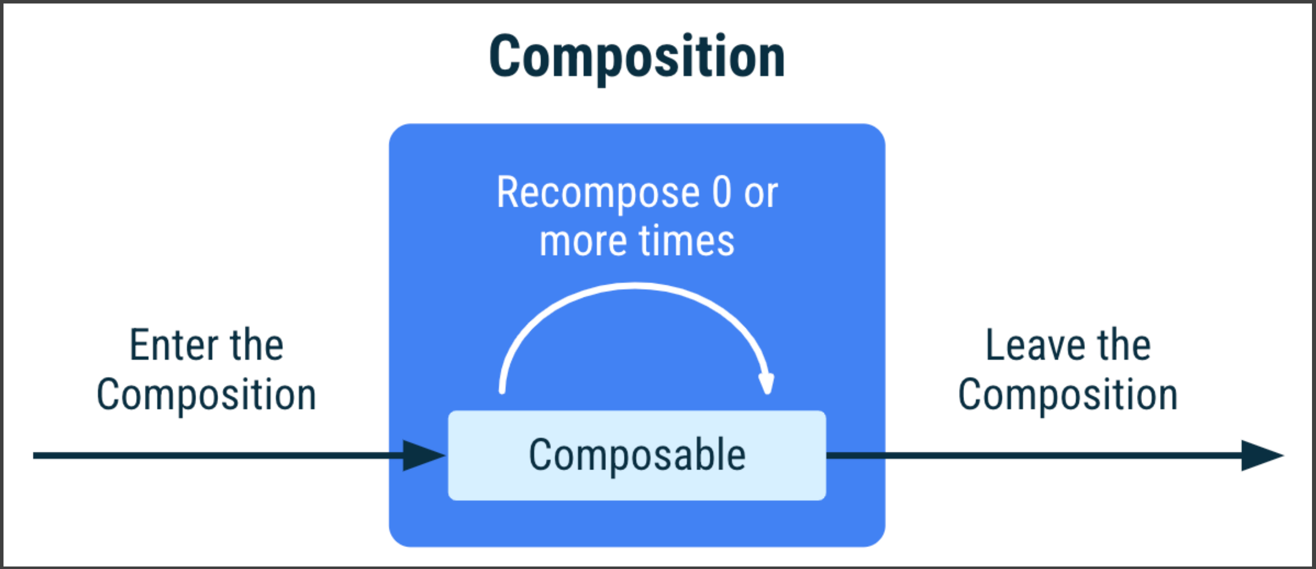
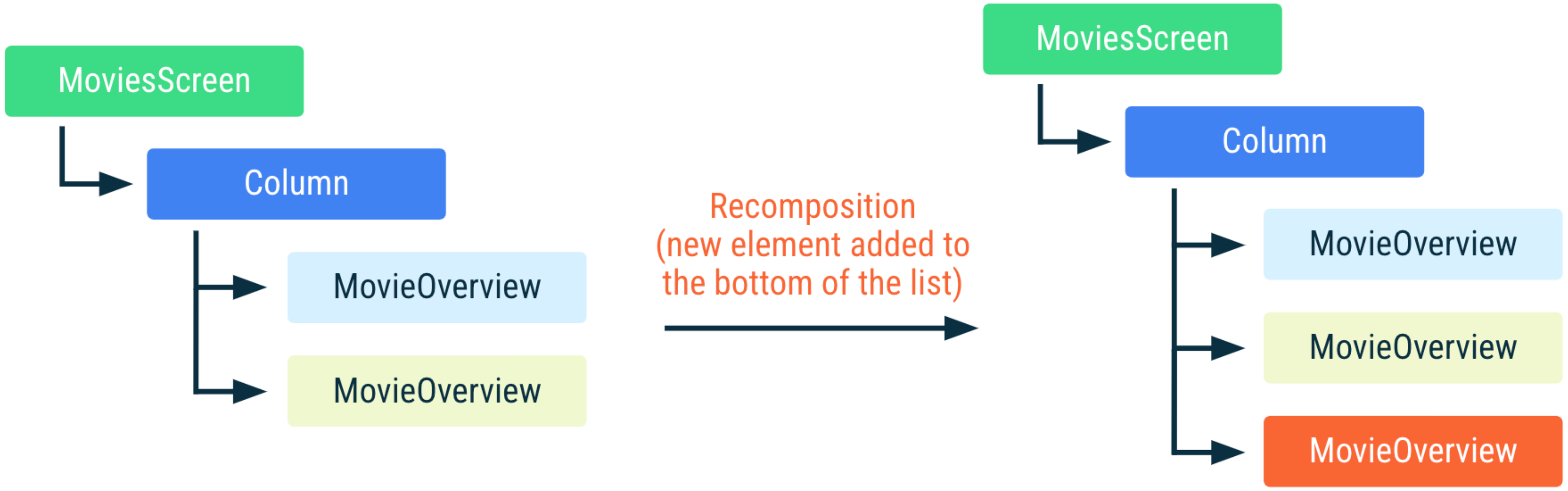
State





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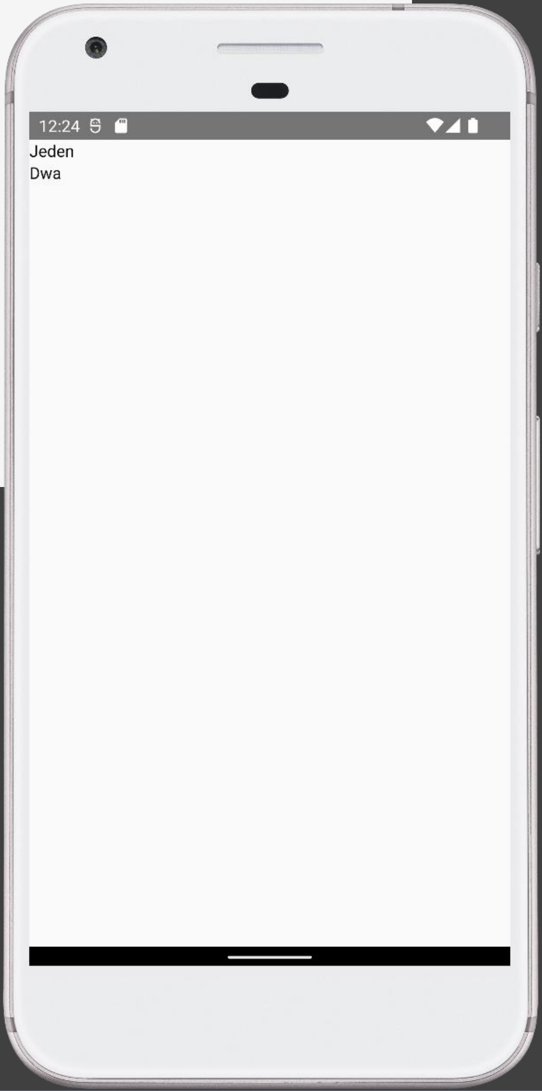
Jetpack Compose

```
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContent {
        Column {
            Text(text = "Jeden")
            Text(text = "Dwa")
        }
    }
}
```


12:24

Jeden
Dwa

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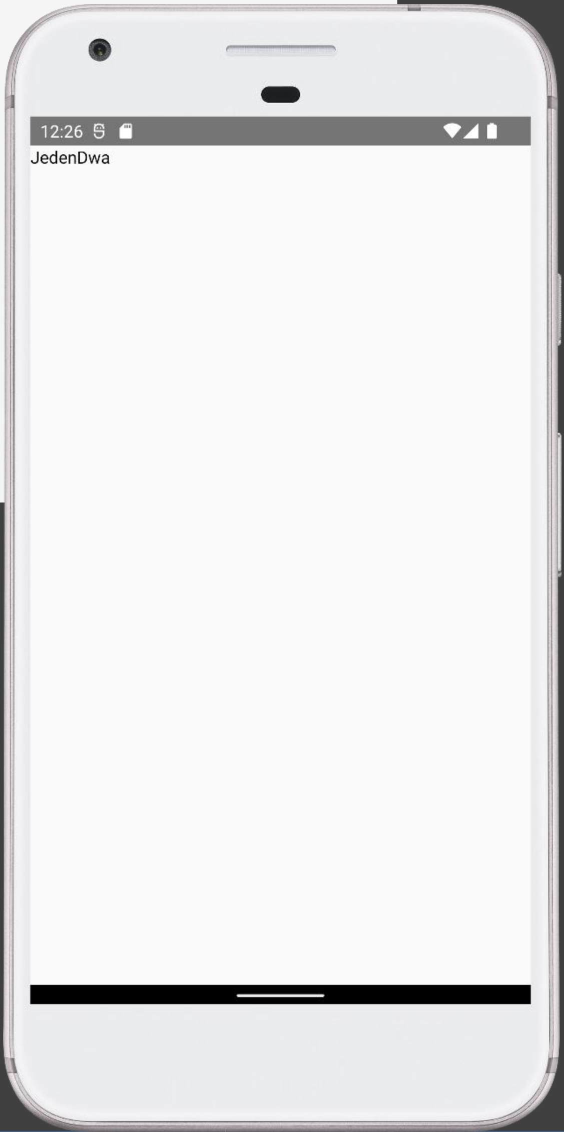
Jetpack Compose

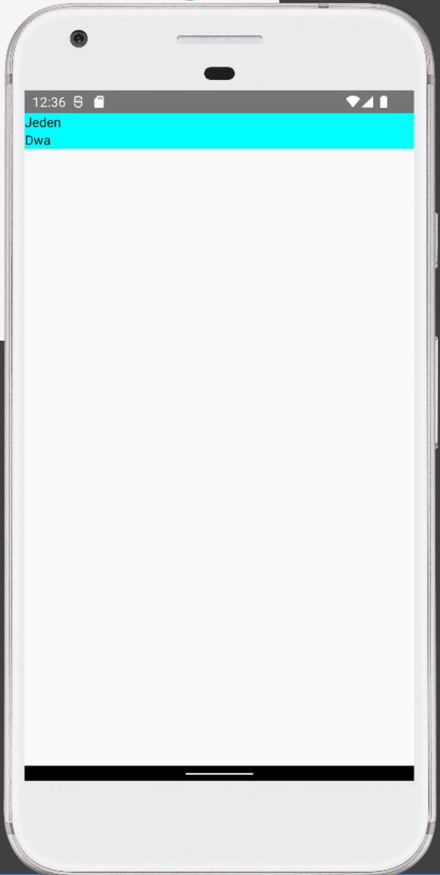
```
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContent {
        Row {
            Text(text = "Jeden")
            Text(text = "Dwa")
        }
    }
}
```


12:26

JedenDwa

Jetpack Compose

```
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContent {
        Column(
            modifier = Modifier
                .fillMaxWidth() // szerokość kolumny
                .background(Color.Cyan) // kolor tła kolumny
        ) {
            Text(text = "Jeden")
            Text(text = "Dwa")
        }
    }
}
```



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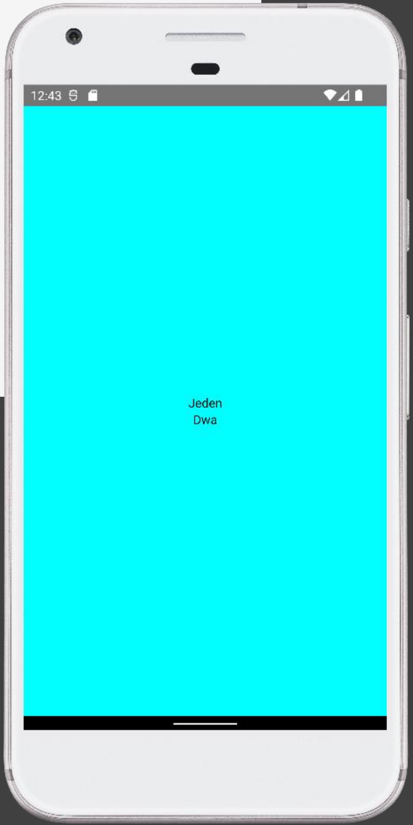
Jetpack Compose

```
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContent {
        Column(
            modifier = Modifier
                .fillMaxSize()
                .background(Color.Cyan),
            horizontalAlignment = Alignment.CenterHorizontally,
            verticalArrangement = Arrangement.Center
        ) {
            Text(text = "Jeden")
            Text(text = "Dwa")
        }
    }
}
```



```
Jeden
Dwa
```

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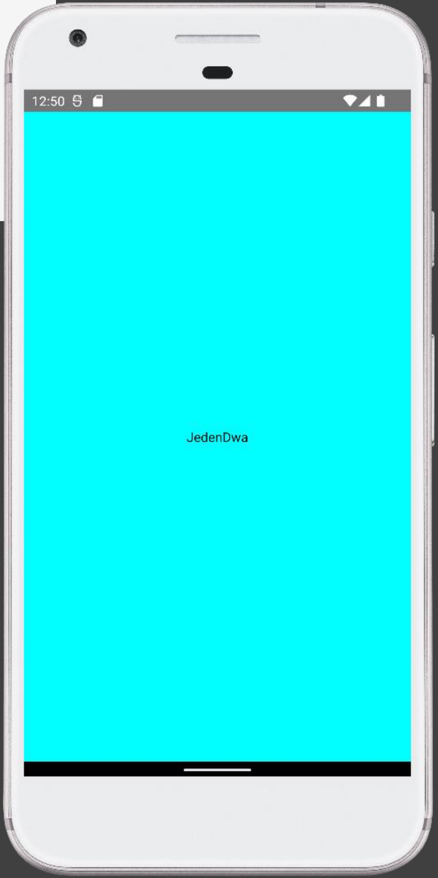
Jetpack Compose

```
Row(
    modifier = Modifier
        .fillMaxSize()
        .background(Color.Cyan),
    horizontalArrangement = Arrangement.Center,
    verticalAlignment = Alignment.CenterVertically
) {
    Text(text = "Jeden")
    Text(text = "Dwa")
}
```



Jetpack Compose

```
Column(
    modifier = Modifier.fillMaxSize(),
    verticalArrangement = Arrangement.spacedBy(8.dp)
) {
    Text(
        text = "Element 1",
        modifier = Modifier.size(50.dp)
    )
    Text(
        text = "Element 2",
        modifier = Modifier.size(80.dp)
    )
    Text(
        text = "Element 3",
        modifier = Modifier.size(100.dp)
    )
}
```

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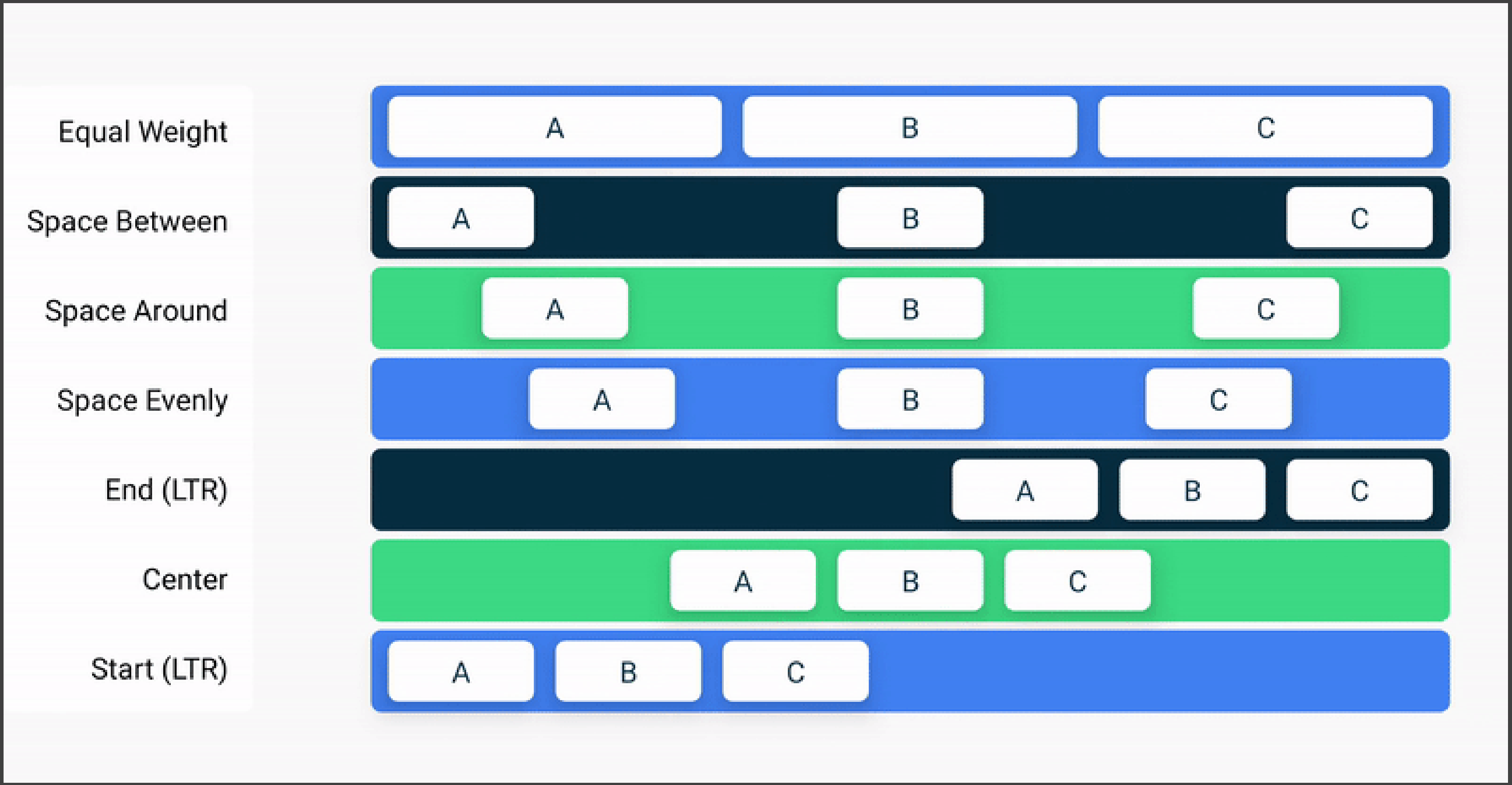
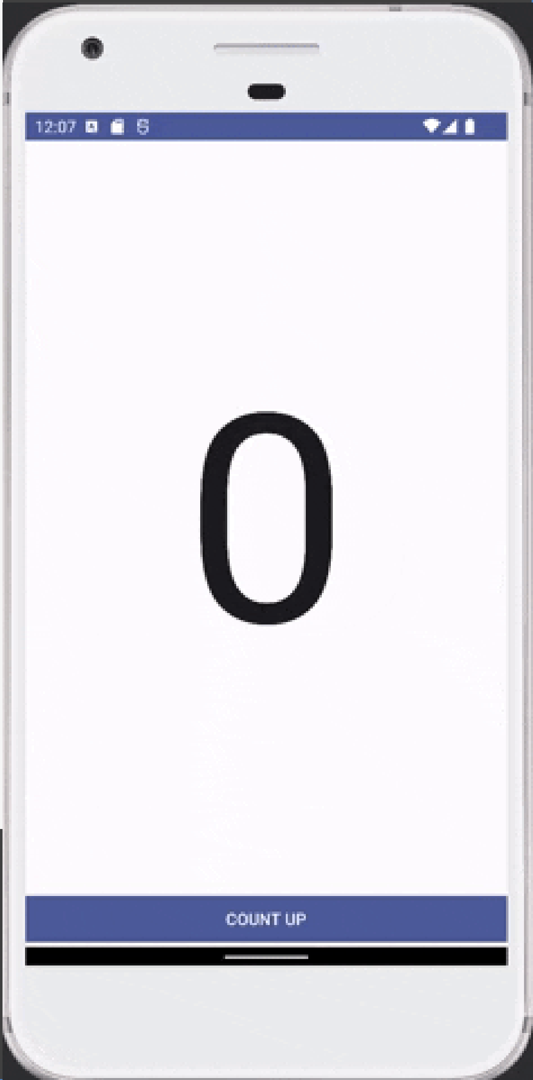


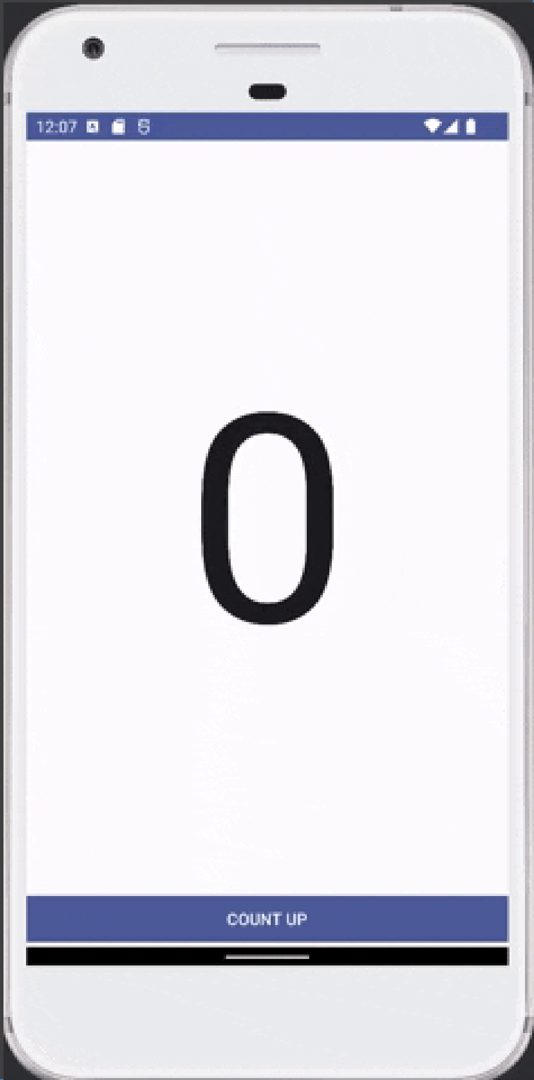
State

```
@Composable
fun CounterExample() {
    Column(
        verticalArrangement = Arrangement.Center,
        horizontalAlignment = Alignment.CenterHorizontally,
        modifier = Modifier.fillMaxSize()
    ) {
        Spacer(modifier = Modifier.weight(0.3f))
        Text(
            text = "test",
            fontSize = 250.sp,
            textAlign = TextAlign.Center,
            modifier = Modifier.weight(1f),
        )
        Button(
            modifier = Modifier.fillMaxWidth(),
            shape = RectangleShape
        ) {
            Text(text = "COUNT UP")
        }
    }
}
```



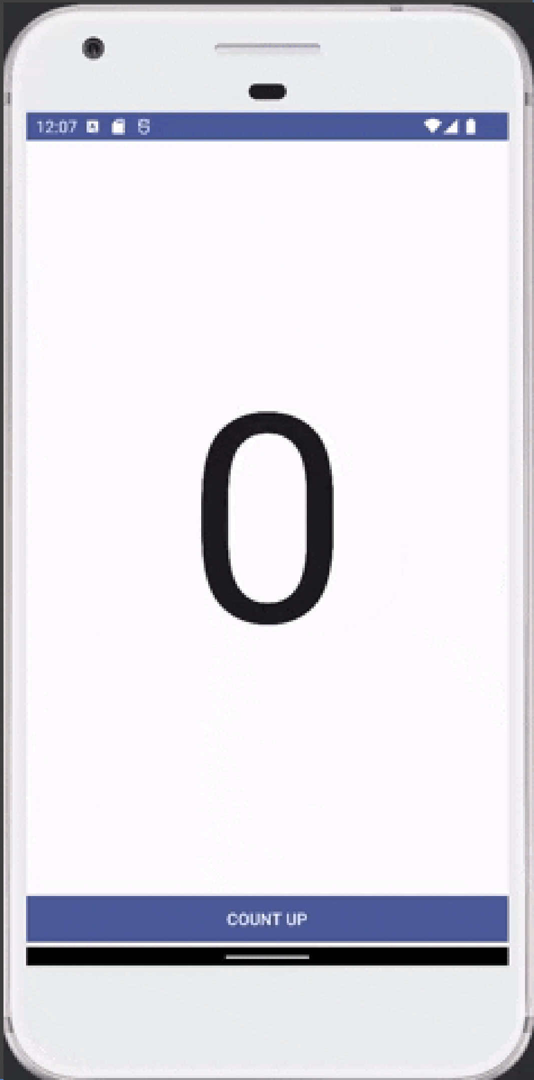
State

```kotlin
@Composable
fun CounterExample() {
    Column(
        verticalArrangement = Arrangement.Center,
        horizontalAlignment = Alignment.CenterHorizontally,
        modifier = Modifier.fillMaxSize()
    ) {

        val count: MutableState<Int> = remember {
            mutableStateOf(0)
        }

        Spacer(modifier = Modifier.weight(0.3f))

        Text(
            text = "${count.value}",
            fontSize = 250.sp,
            textAlign = TextAlign.Center,
            modifier = Modifier.weight(1f),
        )

        Button(
            onClick = { count.value++ }, // onclick
            modifier = Modifier.fillMaxWidth(),
            shape = RectangleShape
        ) {
            Text(text = "COUNT UP")
        }
    }
}
```



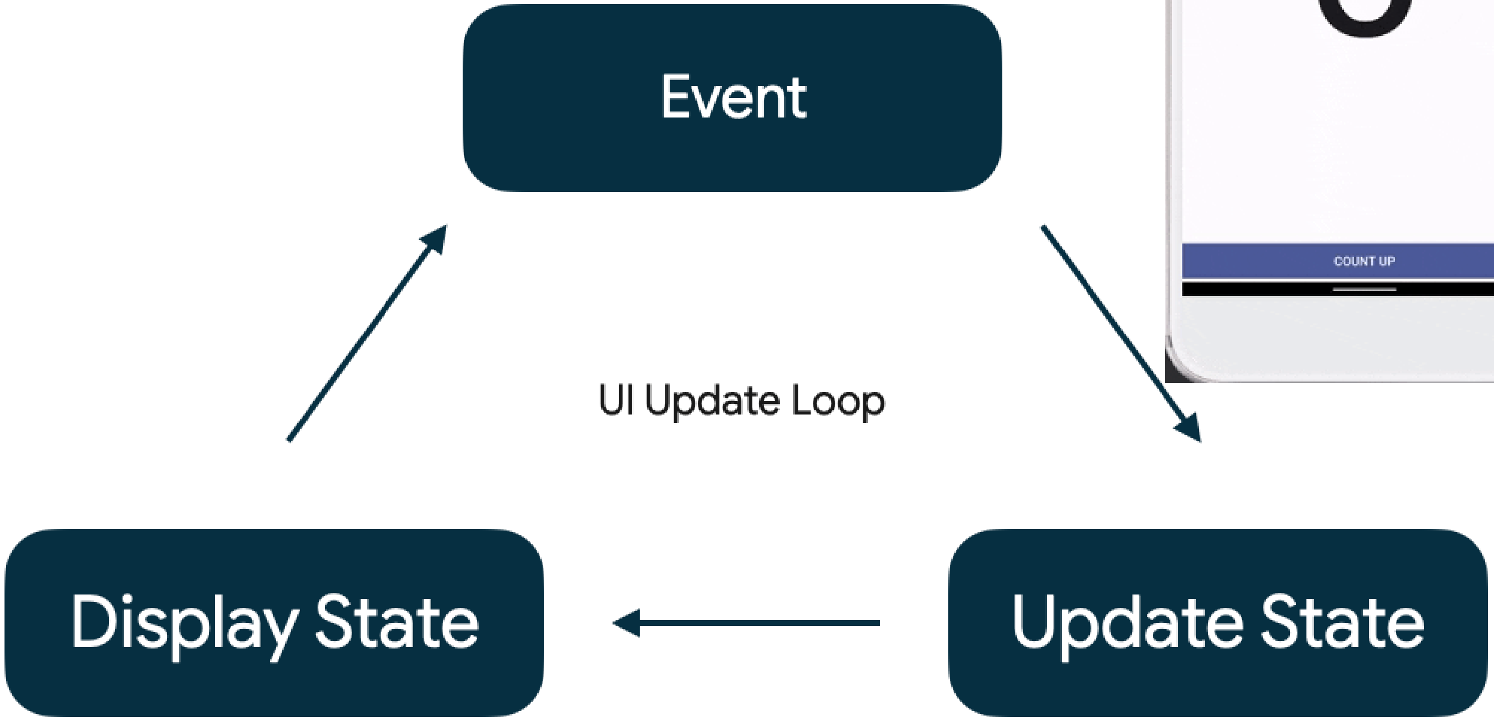
State

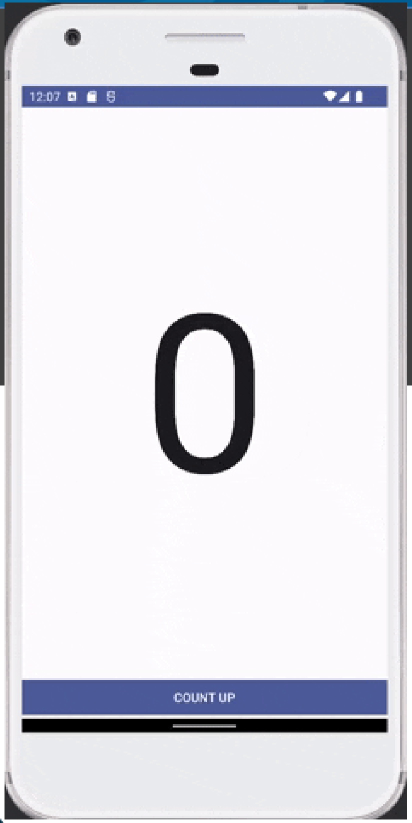
```
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContent {
        JetpackComposeStateBasicsTheme {
            Surface(
                modifier = Modifier.fillMaxSize(),
                color = MaterialTheme.colorScheme.background
            ) {
                CounterExample()
            }
        }
    }
}
```



State

```
val count: MutableState<Int> = remember {
    mutableStateOf(0)
}
```


Event
UI Update Loop
Display State
Update State


12:07
0
COUNT UP