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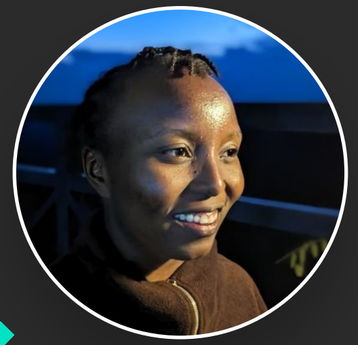
# Coil Library: Guide to Handling Images in Android Jetpack Compose

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# What is Coil?

- Coil is an image loading library, backed by Kotlin Coroutines
- It handles loading images from the internet
- It can also cache images so that you do not have to download images several times

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# Subcomposition

- Subcomposition changes the flow of compose layout.
- Instead of composing its children in composition phase, it composes in layout phase.
- This makes subcomposition less performant compared to regular composition.
- Hence, use subcomposition only when you have to and in the parts of the UI where performance is not very critical
- Check out this article to learn more about subcomposition: https://kinya.hashnode.dev/custom-compose-layouts-clf5ua9jw01mms1nv5k6d84zp

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# AsyncImagePainter

- AsyncImage and SubcomposeAsyncImage uses AsyncImagePainter under the hood.
- AsyncImagePainter is a Painter that executes ImageRequest asynchronously and renders result.
- If you want to use the Painter but cannot use AsyncImage, for instance in advanced animation, you'd use AsyncImagePainter.

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# AsyncImagePainter Cont’

- An image request needs size to determine the output image dimensions, i.e width and height.
- Compose resolves size during layout phase.
- Therefore, AsyncImagePainter.State will be loading in the initial composition even if the image is already in memory.
- To ensure AsyncImagePainter.State is up-to-date in the first composition, set the image size on the image request or use SubcomposeAsyncImage.
- Check Jetpack Compose docs to learn more about compose phases: https://developer.android.com/jetpack/compose/layouts/basics

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# AsyncImagePainter Cont’

- AsyncImagePainter will not finish loading if AsyncImagePainter.onDraw is not called
- This can occur if a composable has unbounded width and height constraints like LazyColumn or LazyRow.
- To use AsyncImagePainter with either of lazy layouts you can either:
  - Set bounded width or height respectively or
  - Set image size on the image request.

# Set Bounded Width or Height on the Image

```
@Composable
fun ImagesList() {
    LazyColumn() {
        items(3) {
            val painter =
                rememberAsyncImagePainter(model = “<image_url>")
            Image(
                modifier = Modifier.width(300.dp).height(200.dp),
                painter = painter, contentDescription = "Top breed")
        }
    }
}
```

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# Set Image Size on ImageRequest

```
@Composable
fun ImagesList() {
    LazyColumn() {
        items(3) {
            val imageRequest = ImageRequest.Builder(LocalContext.current)
                .data("<Image Url>")
                .size(Size.ORIGINAL)
                .build()
            val painter =
                rememberAsyncImagePainter(model = imageRequest)
            Image(
                painter = painter, contentDescription = "Top breed")
        }
    }
}
```

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# Transitions 👩🏻‍💻👨🏻‍💻

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# Crossfade

- Coil offers built in crossfade transition.
- Crossfade transition can be enabled in the ImageRequest Builder.

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# Summary

- Using AsyncImage to load images
- SubcomposeAsyncImage
- AsyncImagePainter an alternative to AsyncImage for loading images
- Transitions