

Lesson 10:

Connecting to Internet



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About this lesson

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Get started

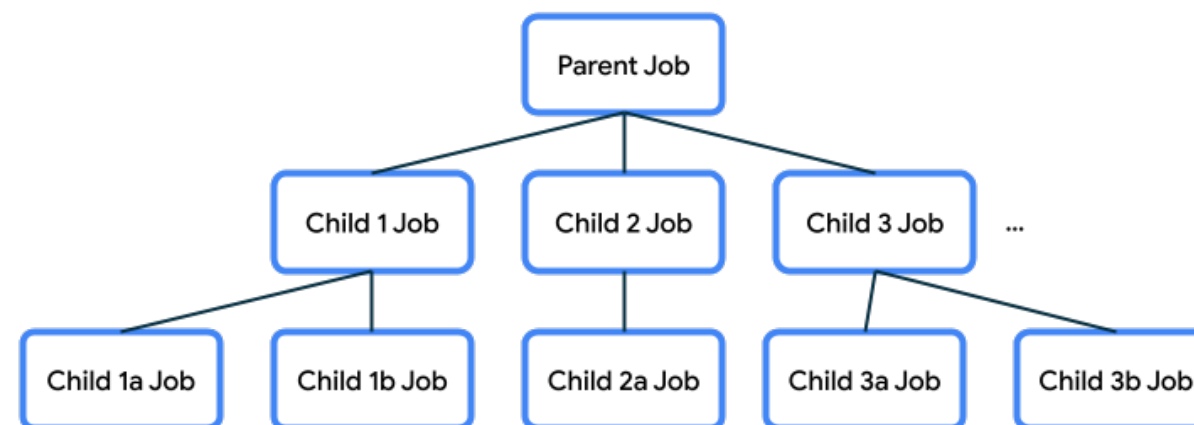
Coroutines

Coroutines

- A coroutine is an instance of a suspendable computation
- It is conceptually similar to a thread, but not bound to any particular thread
- They follow a principle of structured concurrency which means that new coroutines can only be launched in a specific CoroutineScope.

Structured Concurrency

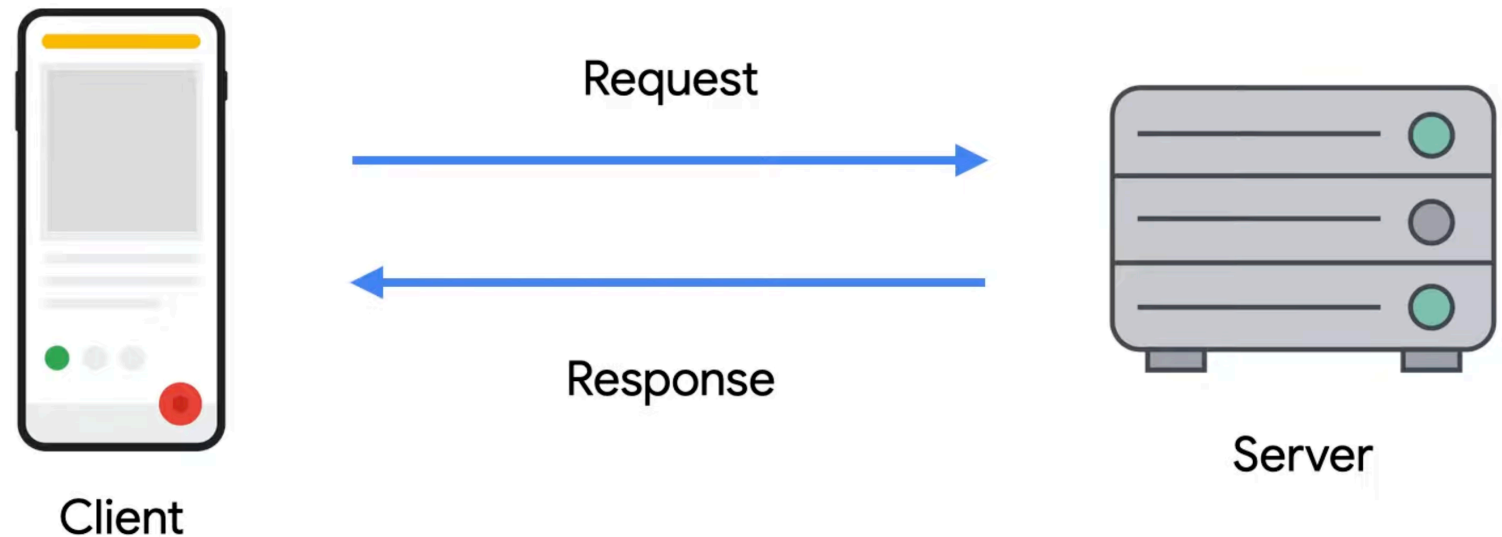
- An outer scope cannot complete until all its children coroutines complete.
- When one of the child coroutines fails with an exception, it gets propagated upwards.
- When the parent coroutine is cancelled, all its children are recursively cancelled, too.



Connecting to Internet

HTTP methods

- GET
- POST
- PUT
- DELETE



HTTP Status Codes

- 200 - 299: Success
- 400 - 499: Client Errors
- 500 - 599: Server Errors

REST

- REpresentational State Transfer
- Is a architectural style or paradigm for providing standards between computer systems on the web
 - Client - server architecture
 - Resources are exposed as URIs
 - Uniform Interface
 - Stateless

Example web service API

URL	DESCRIPTION	METHOD
example.com/messages	Get list of all messages	GET
example.com/messages/1	Get the message by given ID	GET
example.com/search? filter=queryterm	Search messages by given query	GET
example.com/messages	Create a new message	POST

JSON code

```
{  
  "title": "Android Jetpack: EmojiCompat",  
  "description": "Android Jetpack: EmojiCompat",  
  "url": "https://www.youtube.com/watch?v=sYGKUtm2ga8",  
  "updated": "2018-06-07T17:09:43+00:00",  
  "thumbnail": "https://i4.ytimg.com/vi/mK2ga8/default.jpg"  
}
```

Retrofit

- Networking library that turns your HTTP API into a Kotlin and Java interface
- Enables processing of requests and responses into objects for use by your apps
 - Provides base support for parsing common response types, such as XML and JSON
 - Can be extended to support other response types

Why use Retrofit?

- Builds on industry standard libraries, like OkHttp, that provide:
 - HTTP/2 support
 - Connection pooling
 - Response caching and enhanced security
- Frees the developer from the scaffolding setup needed to run a request

Workshop