

Writing Firebase Functions



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What You Will Learn



Managing functions

Writing functions in TypeScript

Simplifying asynchronous functions

Retrying asynchronous functions

Tips and tricks



Managing Functions



Managing Functions



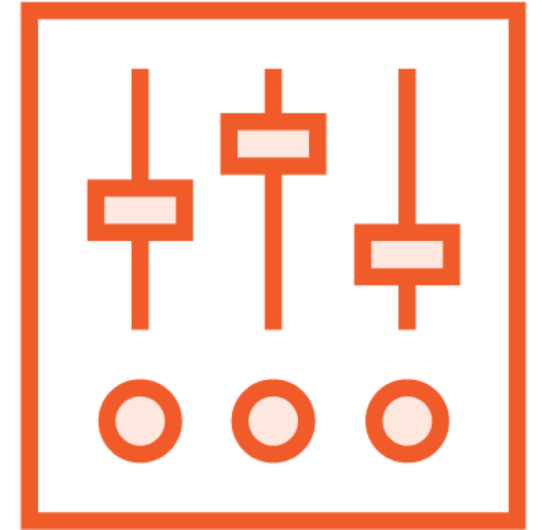
Publish



Delete



Modify



Runtime options

firebase deploy **--only** functions



firebase deploy --only

functions:**firstFN**,functions:**secondFN**



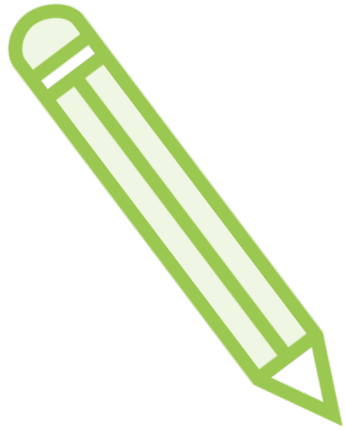
Demo



Managing functions



Changing a Function's Region



Rename the function,
and change its region



Deploy the renamed
function



Delete previous
function



Function Regions

us-central (Iowa)

us-east1 (South Carolina)

eu-west1 (Belgium)

asia-northeast1 (Tokyo)



Writing Functions in TypeScript



TypeScript vs. JavaScript



Simple promise
management



Code highlights



Type safety



Demo



Writing functions in TypeScript



Simplifying Asynchronous Functions



Terminating Functions

Function Type

Termination

Http trigger

`res.redirect()`

`res.send()`

`res.end()`

Background triggers

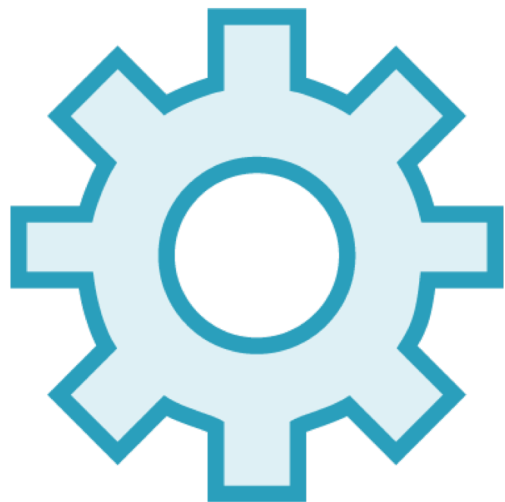
Return a promise



A promise represents some
asynchronous work that
should eventually complete



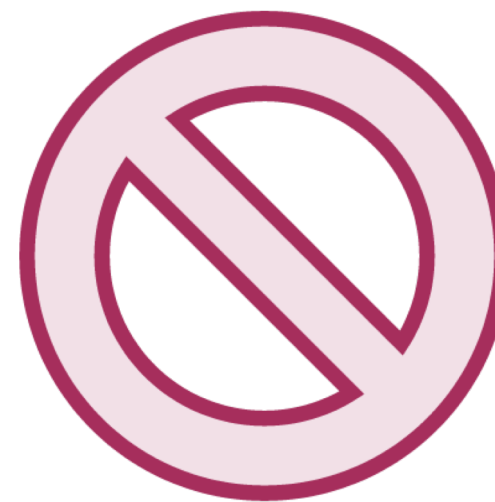
Promise



Pending



Fulfilled



Rejected



Demo



Simplifying asynchronous functions



Retrying Asynchronous Functions



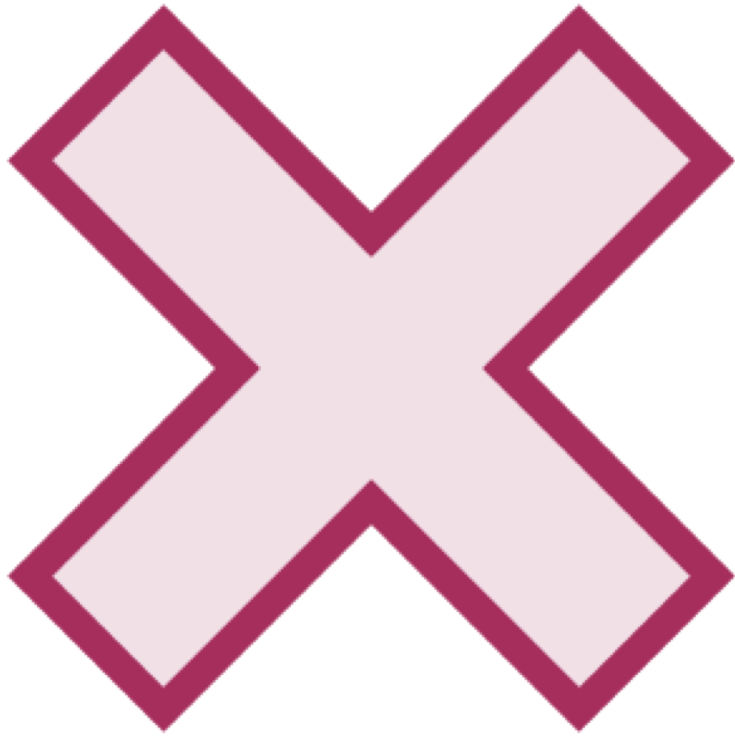
Semantics of Retry



Execute the function exactly once



Execute the function at least once



Contains a bug

Cannot reach a service endpoint

Intentionally throws an exception

Returns a rejected promise

Demo



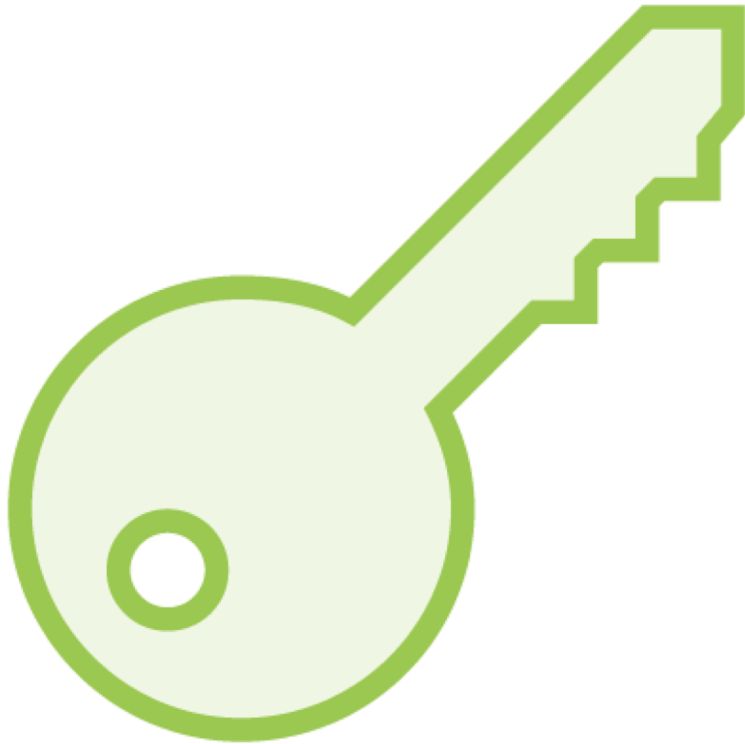
Retrying asynchronous functions



console.cloud.google.com



Best Practices



Use retry to handle transient errors

Avoid infinite retry loops

Use catch with Promises

Tips and tricks



Best Practices

Correctness

Tools

Performance



Correctness

Write idempotent functions

Always delete temporary files



Tools

Local development

Use Sendgrid to send emails



Performance

Use dependencies wisely

Use global variables

Use lazy initialization



Demo



Tips and tricks



Summary



Managing functions

Writing functions in TypeScript

Working with asynchronous functions

- Simplifying
- Retrying

Tips and tricks

- Correctness
- Tools
- Performance

