

LAB 7

Sarah Martin
C00257967

Knative Functions

Installing Knative Functions

I used homebrew to install “func”

```
sarah@Sarahs-MBP ~ % brew tap knative-extensions/kn-plugins
Running `brew update --auto-update`...
==> Downloading https://ghcr.io/v2/homebrew/portable-ruby/portable-ruby/blobs/sha256:02180ca8b8295422ae84921bcf034b7ee8ce5575488bd5e6a37a192e53cd5d34
##### 100.0%
==> Pouring portable-ruby-3.1.4.el_capitan.bottle.tar.gz
==> Auto-updated Homebrew!
Updated 3 taps (homebrew/services, homebrew/core and homebrew/cask).
==> New Formulae
actions-batch      jot                policy_sentry
ansible-creator    jtbl              prjtrellis
appwrite           k8sgpt            promptfoo
argc               kin               proto
asmfmt            kiota             protoc-gen-js
autobrr           ktfmt             purr
autotrace          kubecolor         rage
beakerlib          kubeshark         ratchet
beancount-language-server kubetui          rathole
bluez             kuto              rattler-build
bpftop            lexido            rawdog
c-blosc2           liblc3            redict
c3c               libnsbmp          redress
c4core            libnsimgf         retire
cahute            liborign          robin-map
cargo-fuzz         libseofg          rsyncy
cargo-llvm-cov     libspelling       rtbmap
cargo-sweep        libssl            ruby@3.2
cekit             libtickit         rustcat
chisel-tunnel      libwapcaplet      scala@3.3
cmake-language-server limesuite         scnlb
cotp              llvml@17          seam
csvlens           logdy             senpai
dalfox            lsusb-laniksj     sigi
deadfinder         magic-wormhole.rs sqlboiler
descope           manim             srgn
dhall-toml        mantra            ssh3
direwolf           mariadb@11.2      sshpass
dissent           mdformat          steamguard-cli
doltgres          mdsh              sugarjar
dotlash           mlx               sui
```

```
sarah@Sarahs-MBP ~ % brew install func
==> Fetching knative-extensions/kn-plugins/func
==> Downloading https://github.com/knative/func/releases/download/knative-v1.13.
==> Downloading from https://objects.githubusercontent.com/github-production-rel
##### 100.0%
==> Installing func from knative-extensions/kn-plugins
"Installing kn-func binary in /usr/local/Cellar/func/v1.13.0/bin"
"Installing func symlink in /usr/local/Cellar/func/v1.13.0/bin"
📦 /usr/local/Cellar/func/v1.13.0: 4 files, 78.9MB, built in 10 seconds
==> Running `brew cleanup func`...
Disable this behaviour by setting HOMEBREW_NO_INSTALL_CLEANUP.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see `man brew`).
==> `brew cleanup` has not been run in the last 30 days, running now...
Disable this behaviour by setting HOMEBREW_NO_INSTALL_CLEANUP.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see `man brew`).
Removing: /Users/sarah/Library/Caches/Homebrew/ca-certificates_bottle_manifest--2023-08-22... (9.1KB)
Removing: /Users/sarah/Library/Caches/Homebrew/ca-certificates--2023-08-22... (125.2KB)
Removing: /Users/sarah/Library/Caches/Homebrew/cairo_bottle_manifest--1.18.0... (20.9KB)
Removing: /Users/sarah/Library/Caches/Homebrew/cairo--1.18.0... (777.7KB)
Removing: /Users/sarah/Library/Caches/Homebrew/fish_bottle_manifest--3.6.1... (13.7KB)
Removing: /Users/sarah/Library/Caches/Homebrew/fish--3.6.1... (4MB)
Removing: /Users/sarah/Library/Caches/Homebrew/fontconfig_bottle_manifest--2.14.2... (11.3KB)
Removing: /Users/sarah/Library/Caches/Homebrew/fontconfig--2.14.2... (626.2KB)
Removing: /Users/sarah/Library/Caches/Homebrew/freetype_bottle_manifest--2.13.2-1... (10.4KB)
Removing: /Users/sarah/Library/Caches/Homebrew/freetype--2.13.2... (958.4KB)
Removing: /Users/sarah/Library/Caches/Homebrew/gettext_bottle_manifest--0.22.4... (10KB)
Removing: /Users/sarah/Library/Caches/Homebrew/gettext--0.22.4... (10.2MB)
Removing: /Users/sarah/Library/Caches/Homebrew/giflib_bottle_manifest--5.2.1... (10.7KB)
Removing: /Users/sarah/Library/Caches/Homebrew/giflib--5.2.1... (150.4KB)
Removing: /Users/sarah/Library/Caches/Homebrew/glib_bottle_manifest--2.78.1-1... (14.7KB)
Removing: /Users/sarah/Library/Caches/Homebrew/glib--2.78.1... (6.3MB)
Removing: /Users/sarah/Library/Caches/Homebrew/graphite2_bottle_manifest--1.3.14... (11.0KB)
Removing: /Users/sarah/Library/Caches/Homebrew/graphite2--1.3.14... (92.9KB)
Removing: /Users/sarah/Library/Caches/Homebrew/groonga_bottle_manifest--13.0.8... (12.4KB)
Removing: /Users/sarah/Library/Caches/Homebrew/groonga_bottle_manifest--13.0.9... (11.6KB)
Removing: /Users/sarah/Library/Caches/Homebrew/groonga--13.0.9... (12.5MB)
Removing: /Users/sarah/Library/Caches/Homebrew/harfbuzz_bottle_manifest--8.3.0... (24KB)
Removing: /Users/sarah/Library/Caches/Homebrew/harfbuzz--8.3.0... (2.6MB)
```

I used homebrew to then install the Kn function and checked its version.

```
sarah@Sarahs-MBP ~ % brew install kn
=> Downloading https://ghcr.io/v2/homebrew/core/kn/manifests/1.14.0
##### 100.0%
=> Fetching kn
=> Downloading https://ghcr.io/v2/homebrew/core/kn/blobs/sha256:a5e7c5ed68d72349507aeds24e2412a241177a2557c2dce855dc933b2de9bb1c
##### 100.0%
=> Pouring kn--1.14.0.monterey.bottle.tar.gz
=> Caveats
zsh completions have been installed to:
  /usr/local/share/zsh/site-functions
=> Summary
📦  /usr/local/Cellar/kn/1.14.0: 0 files, 71.5MB
=> Running 'brew cleanup kn'...
Disable this behaviour by setting HOMEBREW_NO_INSTALL_CLEANUP.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see 'man brew').
sarah@Sarahs-MBP ~ % kn func version
v0.40.0
sarah@Sarahs-MBP ~ %
```

Creating A Function

I created a function project by using the **func** CLI

```
zsh: parse error near '<'
sarah@Sarahs-MBP ~ % func create -l go hello
Created go function in /Users/sarah/hello
sarah@Sarahs-MBP ~ %
```

I then CD into hello.

```
sarah@Sarahs-MBP ~ % func create -l go hello
Created go function in /Users/sarah/hello
sarah@Sarahs-MBP ~ % cd hello
```

Building, running, or deploying functions

I ran the function locally by running the “kn func run” command inside the project directory.

```
A registry for function images is required. For example, 'docker.io/tigerteam'.
? Registry for function images: docker.io/tigerteam
Note: building a function the first time will take longer than subsequent builds
Building function image
Still building
Still building
Yes, still building
Don't give up on me
Still building
This is taking a while
👉 Function built: index.docker.io/tigerteam/hello:latest
Running on host port 50551
Initializing HTTP function
listening on http port 8080
```

```
localhost:51410
GET / HTTP/1.1 localhost:51410
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Accept-Encoding: gzip, deflate, br
Sec-Ch-Ua-Mobile: 70
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7
Sec-Fetch-Mode: navigate
Sec-Fetch-User: 71
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: keep-alive
Sec-Ch-Ua: "Not A(Brand";v="99", "Google Chrome";v="121", "Chromium";v="121"
Sec-Ch-Ua-Platform: "macOS"
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/121.0.0.0 Safari/537.36
Sec-Fetch-Site: none
```

```
[sarah@UNKNOWN hello % func invoke
POST / HTTP/1.1 localhost:51410
  User-Agent: Go-http-client/1.1
  Content-Length: 25
  Content-Type: application/json
  Accept-Encoding: gzip
Body:
sarah@UNKNOWN hello %
```

For the next part i couldnt complete as I kept getting errors and the terminal kept freezing when I tried the autoscaling part repeatedly.

```
sarah@Sarahs-MBP hello % kn service create hello \
--image ghcr.io/knative/helloworld-go:latest \
--port 8080 \
--env TARGET=World
Error: cannot create service 'hello' in namespace 'default' because the service already exists and no --force option was given
Run 'kn --help' for usage
sarah@Sarahs-MBP hello % kn service list
NAME      URL                                LATEST    AGE      CONDITIONS    READY    REASON
hello     http://hello.default.example.com  hello-00001  2d4h    1 OK / 3      Unknown  Uninitialized : Waiting for load balancer to be ready
sarah@Sarahs-MBP hello % echo "Accessing URL $(kn service describe hello -o url)"
curl "$(kn service describe hello -o url)"
Accessing URL http://hello.default.example.com
curl: (6) Could not resolve host: hello.default.example.com
sarah@Sarahs-MBP hello % kubectl get pod -l serving.knative.dev/service=hello -w
```

Due to not being able to solve these errors, I was not able to complete the rest of this lab.