

Trace: Instrumentation to Show Function Calls

Version 8.4

February 7, 2022

Calltrace is a tool that displays all calls to user procedures. It displays the arguments to the calls, and it indents to show the depth of the continuation.

1 Quick Instructions

- Throw away ".zo" versions of your source
- Prefix your program with

```
(require trace)
```

perhaps by starting racket with

```
racket -l trace ...
```

before arguments to load your program.

- Run your program

The `trace` module is odd; don't import it into another module. Instead, the `trace` module is meant to be invoked from the top-level, so that it can install an evaluation handler, exception handler, etc.

To reuse parts of the code of `trace`, import `trace/calltrace-lib`. It contains all of the bindings described here, but it does not set the `current-eval` parameter.

2 Installing Calltrace

```
(require trace)    package: trace
```

Invoking the `trace` module sets the evaluation handler (via `current-eval`) to instrument Racket source code.

NOTE: `trace` has no effect on code loaded as compiled byte code (i.e., from a ".zo" file) or native code (i.e., from a ".dll", ".so", or ".dylib" file).

Calltrace's instrumentation can be explicitly disabled via the `instrumenting-enabled` parameter. Instrumentation is on by default. The `instrumenting-enabled` parameter affects only the way that source code is compiled, not the way that exception information is reported.

Do not load `trace` before writing ".zo" files. Calltrace instruments S-expressions with unprintable values; this works fine if the instrumented S-expression is passed to the default eval handler, but neither the S-expression nor its byte-code form can be marshalled to a string.

3 Calltrace Library

```
(require trace/calltrace-lib)    package: trace
```

The `trace/calltrace-lib` module provides functions that implement `trace`.

```
(instrumenting-enabled) → boolean?  
(instrumenting-enabled on?) → void?  
  on? : any/c
```

A parameter that determines whether tracing instrumentation is enabled.

```
(calltrace-eval-handler e) → any  
  e : any/c
```

A procedure suitable for use with `current-eval`, which instruments expressions for Calltrace output (when instrumentation is not disabled via `instrumenting-enabled`).

Requiring `trace` installs this procedure as the value for `current-eval`.

```
(annotate e) → syntax?  
  e : any/c
```

Instruments the expression `e` with Calltrace support. This function is normally used by `calltrace-eval-handler`.