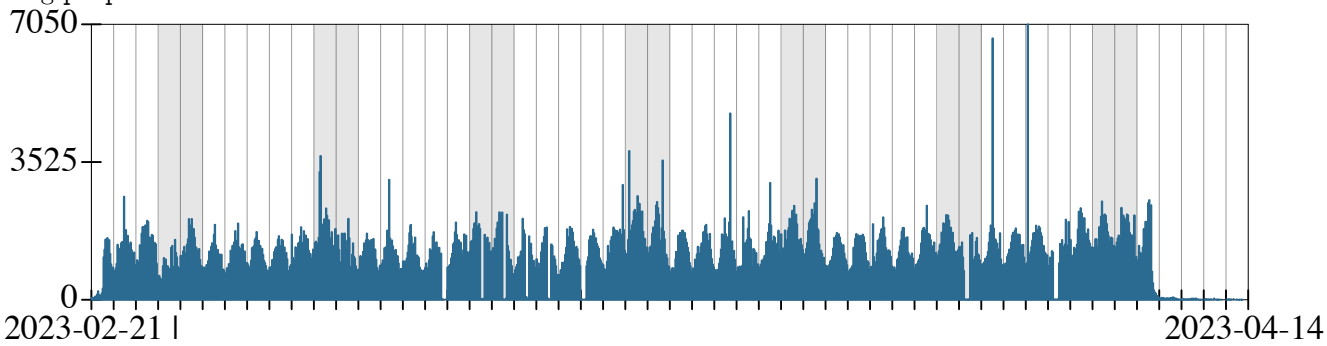
Figure 3: Records per Hour

Plot from `code/row-distribution.rkt`, which uses the dataset `out/row-distribution.rktd`, which comes from running `prepare.rkt --mode main`.



Lines 1-2 of `out/overview.txt` (output of `prepare.rkt --mode main`) give the reason for sending:

```
1504736 total logs = 1341348 nocheck + 156883 nonstrict + 6505 strict
 508572 due to module switch
```

Table 2: Size of Analyzed Code

From `out/summary-of-size-distributions.rktd`,
which is the output of `code/sdupdate.rkt`
on `out/size-distributions.rktd`:

```
;; (list* (max* vv) (median < vv) mm (stddev/mean mm vv) (percentile* vv)))
;; percentile* = 0.95 -- 0.99
#hash((editrange .
       (1156036 926 3007043/817 30975.40553032358
        (0.95 8220) (0.96 9858) (0.97 13656) (0.98 18956) (0.99 34725)))
      (event-count .
       (6079 138 38689/135 582.5752201972966
        (0.95 960) (0.96 1174) (0.97 1304) (0.98 1836) (0.99 3302)))
      (files .
       (54884 7678 55257996/4639 11853.650098459446
        (0.95 40029) (0.96 42771) (0.97 45417) (0.98 48688) (0.99 51761)))
      (lines .
       (1089963 3115 38928947/5992 22364.75846303099
        (0.95 18561) (0.96 25892) (0.97 27014) (0.98 29725) (0.99 50547)))
      (timespan .
       (1387897376 845648 591343604248/185705 15724745.722577972
        (0.95 10696064) (0.96 12715468) (0.97 15596940) (0.98 21153924) (0.99 35450460))))
```

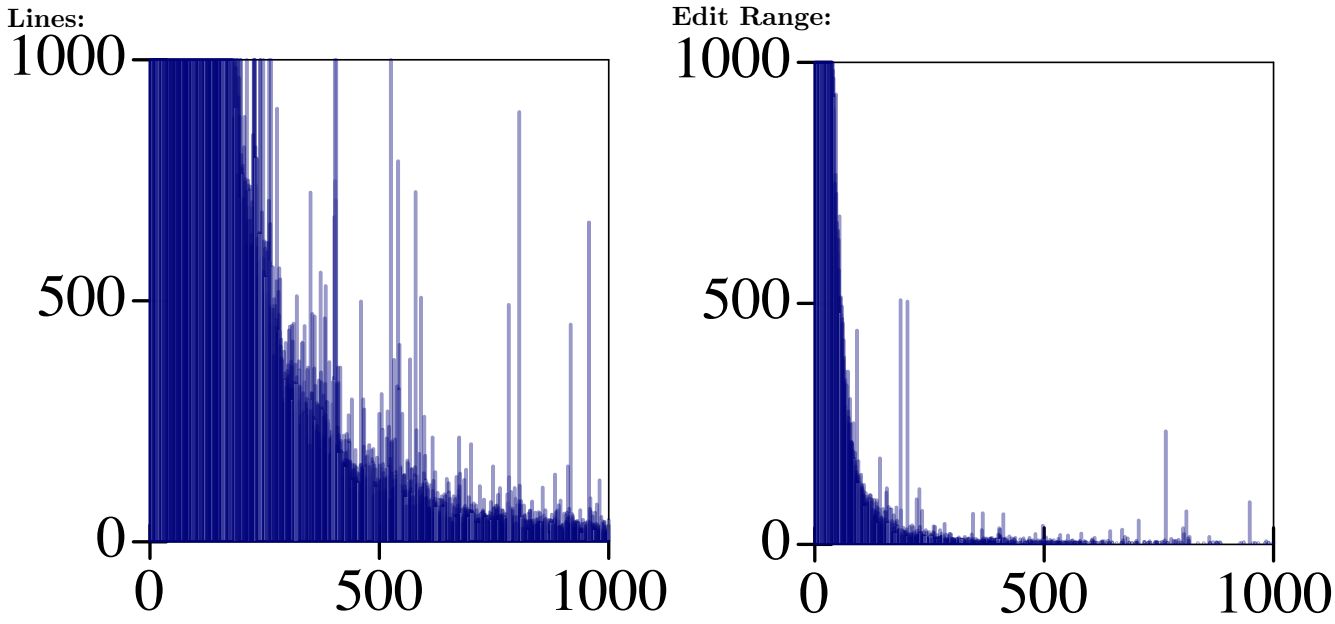
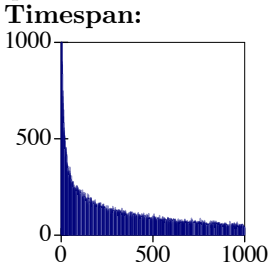


Table 3: Session Size

See previous section for mean, stddev, median, and P99.



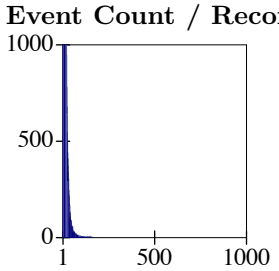


Table 4: Current Type Errors and Background Errors

Lines 3-8 of `out/overview.txt`:

```
72235735 total forced strict type errors, 37027281 in module,
curr 1111178 in edit regions,
olde 938500 in edit regions
595137 total type errors, 289698 in module,
curr 14917 non-stx + 16007 syntax in edit regions,
olde 13836 non-stx + 28565 syntax in edit regions
```

Figure 4: Overview of Type Analysis Modes

Line 1 of `out/overview.txt` partitions logs by mode:

```
1504736 total logs = 1341348 nocheck + 156883 nonstrict + 6505 strict
```

Lines 9-13 of `out/overview.txt` partition sessions and report on upgrades and downgrades, *but* the final two numbers are incorrect (upgrade and downgrade) because they include module switches:

```
347598 sessions
 346956 single mode = 313509 nocheck + 32902 nonstrict + 545 strict
 512 multi mode projects
 341 mode upgrades
 320 mode downgrades
```

Correct up/down-grade numbers are in `out/downgrade-count.txt`, which is the output of `code/downgrade-count.rkt` after running the following commands to generate data:

```
PLTSTDERR="error info@luau" racket prepare.rkt --mode divide-sessions
PLTSTDERR="error info@luau" racket prepare.rkt --mode session-query
PLTSTDERR="error info@luau" racket prepare.rkt --mode aggregate-te
```

Figure 5: Type and Background Errors Grouped by Mode

These plots come from `code/error-by-mode.rkt`, which uses hard-coded data from `out/overview.txt`:

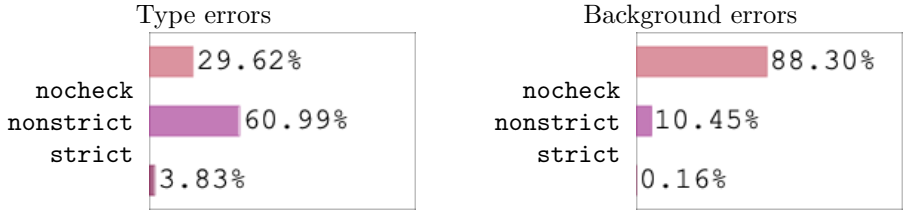


Table 5: Specific Errors in Edit Range

Output from `code/type-error-survival.rkt` run on `code/type-error-survival-ss-*.rktd`:

TODO

Table 6: Type Error Popularity

Output from `code/type-error-count.rkt` run on `code/te-editrange-ss-*.rktd`:

TODO

Internal Limits, Code Too Complex

Data from `out/ctc-info.txt`, which comes from `prepare.rkt --mode main`:

```
(980,835,567,637,391 #<datetime 2023-03-30T17:27:22.322> #<datetime 2023-03-30T17:28:06.924> nonstrict 2)
(607,632,332,499,626 #<datetime 2023-04-02T17:53:33.696> #<datetime 2023-04-02T17:53:57.424> nonstrict 4)
(607,632,332,499,626 #<datetime 2023-04-03T11:16:50.068> #<datetime 2023-04-03T11:17:13.453> nonstrict 4)
(315,096,293,918,073 #<datetime 2023-04-08T23:54:22.135> #<datetime 2023-04-08T23:54:50.46> nonstrict 2)
(315,096,293,918,073 #<datetime 2023-04-08T23:02:03.668> #<datetime 2023-04-08T23:02:49.4> nonstrict 2)
(315,096,293,918,073 #<datetime 2023-04-08T22:52:43.752> #<datetime 2023-04-08T22:52:48.791> nonstrict 2)
(315,096,293,918,073 #<datetime 2023-04-08T22:44:56.671> #<datetime 2023-04-08T22:45:48.586> nonstrict 2)
(315,096,293,918,073 #<datetime 2023-04-08T22:44:03.375> #<datetime 2023-04-08T22:44:48.676> nonstrict 2)
(315,096,293,918,073 #<datetime 2023-04-08T22:42:32.045> #<datetime 2023-04-08T22:42:48.557> nonstrict 2)
(315,096,293,918,073 #<datetime 2023-04-08T22:42:32.91> #<datetime 2023-04-08T22:42:48.557> nonstrict 2)
(315,096,293,918,073 #<datetime 2023-04-08T22:41:44.628> #<datetime 2023-04-08T22:41:48.527> nonstrict 2)
```

Figure 6: Type Error Density

Plot output from `code/error-count.rkt` on `out/error-density-ss-*.rktd`. (It also prints text output.):

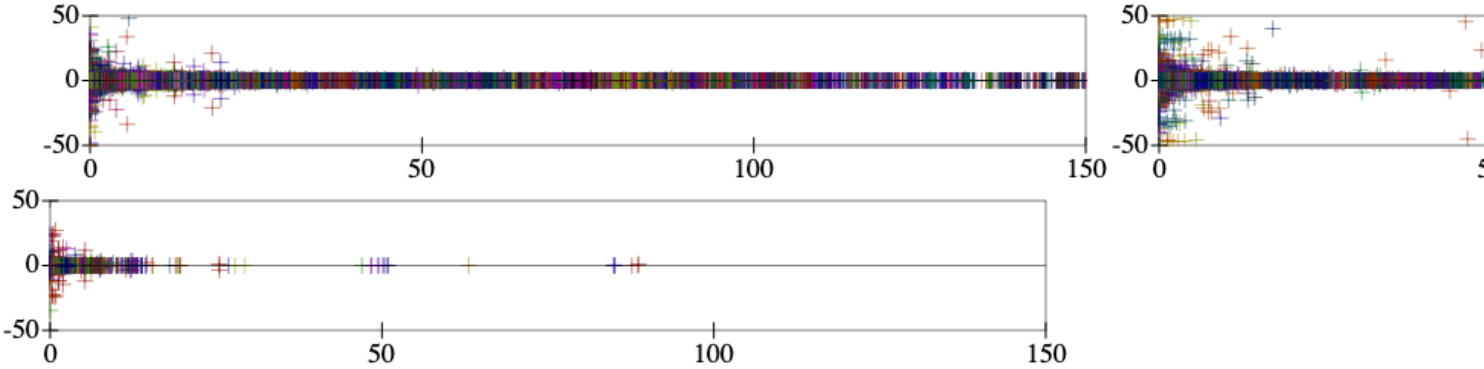


Figure 7: Type Error Density

Shuffled text output from `code/error-count.rkt` on `out/error-density-ss-*.rktd`:

```
TE
  nocheck & 48378 & (\pct{46.83}) & 9440 & [\pct{9.14}] & 45479 & [\pct{44.03}] \\
FS
  nocheck & 270763 & (\pct{36.99}) & 238696 & [\pct{32.61}] & 222588 & [\pct{30.41}] \\
TE mod
  nocheck & 20085 & (\pct{49.83}) & 906 & [\pct{2.25}] & 19317 & [\pct{47.92}] \\
FS mod
  nocheck & 259865 & (\pct{39.09}) & 175643 & [\pct{26.42}] & 229271 & [\pct{34.49}] \\
TE
  nonstrict & 19491 & (\pct{39.63}) & 9567 & [\pct{19.45}] & 20121 & [\pct{40.91}] \\
FS
  nonstrict & 35330 & (\pct{37.28}) & 29483 & [\pct{31.11}] & 29955 & [\pct{31.61}] \\
TE mod
  nonstrict & 13030 & (\pct{40.22}) & 5513 & [\pct{17.02}] & 13852 & [\pct{42.76}] \\
FS mod
  nonstrict & 33988 & (\pct{39.74}) & 20738 & [\pct{24.25}] & 30798 & [\pct{36.01}] \\
TE
  strict & 733 & (\pct{39.18}) & 368 & [\pct{19.67}] & 770 & [\pct{41.15}] \\
FS
  strict & 574 & (\pct{33.71}) & 561 & [\pct{32.94}] & 568 & [\pct{33.35}] \\
TE mod
  strict & 419 & (\pct{39.31}) & 230 & [\pct{21.58}] & 417 & [\pct{39.12}] \\
FS mod
  strict & 488 & (\pct{36.53}) & 344 & [\pct{25.75}] & 504 & [\pct{37.72}] \\
```