Status pilot cases Cha-Qeko/X

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Overview

- Prospective study:

  - Can Cha-Qeko/X help with API evolution?
- Retrospective study: TPVISION
  - How often do systematic changes occur?
  - How often does code migration occur?

TP Vision data set

- Study source code history + issue database

  (dataset size: 1 year of 15714 commits + 91280 JIRA entries)

- JIRA issues linked to commits
- Identifying instances of code migration:
  - cherry picking *(very few: ~50)*
  - merging branches *(ongoing)*

Frequent change patterns

- Applied to one of the TP Vision repositories: 1654 commits, 27648 lines of code, 289 classes
- Changes within the same method grouped
- Changes considered equal if:
  - Same kind of change (insert, delete, update or move)
  - Part being changed is structurally equal

Frequent change patterns

Support	Count	Avg. length	Max. Length
3	467	30.29	384
4	221	24.75	185
5	98	30.40	214
6	88	26.51	354
7	49	14.41	145
8	41	30.77	131
9	29	24.53	93
10	15	25.35	103
11	10	22.77	131
12	5	15.25	41
13	6	10.6	17
14	4	10.33	13
15	5	149	354
16	5	150.5	354
17	4	8.66	10
18	4	8.66	10
21	4	8.66	10

Next steps

- FOD Fin: Use Cha-Qeko/X for API evolution
- TP Vision: Examine the remainder of the dataset; determine where Cha-Qeko/X could have saved time/effort