LapsPython

Extend LAPS to synthesize Python/R

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Backlog

Issue from Sprint 3:

- Python translations still have not improved much
  - Same main issue: Invented primitives are translated incorrectly
  - Step-by-step debugging of LAPS programs not possible
  - Most generated lines of code are correct; individual lines can be fixed manually

- Workaround:
  - Translated library is saved to JSON file and loaded at next launch
  - Fix invented primitives manually (if you understand them)
  - This should boost the number of correct translations

Sprint 4

- New feature: Translation to R
- Almost everything that works for Python now works for R
  - All primitives are implemented manually
- Issues:
  - Higher order functions like `map`
    - I have yet to look at lambda functions in R
  - Correctness of translations is not verified

Example: Translation to R

```
if the word starts with any letter any letter add j before that
(lambda (_rflatten (cons _j (_rsplit _r $0))))

library(glue)
library(stringr)

regex_split <- function(s1, s2) {
     // [...]
}

if_the_word_starts_with_any_letter_any_letter_add_j_before_that <- function(arg1) {
     rsplit_1 <- regex_split('r', arg1)
     cons_1 <- c('j', rsplit_1)
     rflatten_1 <- paste(cons_1, collapse = "")
}
```

Open issues for the remaining semester

- Bug fixes for the translation module (as many as possible)
- Unit tests
- Finish 1-Click-Demo
- Documentation

- Removed from Project Plan: List Processing domain