Extend Language Final Report

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1. Introduction

Extend is a declarative programming language meant to support spreadsheet-like functionality. It contains features such as complex calculations on large inputs of data, side-effect free and immutable values, and automatic formula adjustments relative to rows and columns. Extend is compiled to the LLVM (Low Level Virtual Machine) intermediate representation, which in turn is reduced to machine assembly. Extend takes inspiration from software such as Microsoft Excel, which allows users to link several formulae on dependent groups of data together, but takes this technology a step further by allowing users to encapsulate such calculations as functions.

1.1 Inspiration & Use Cases

Inspiration

The design goal of our language was to be "a spreadsheet you can compile". Extend was conceptualized to address the limitations that prevented the spreadsheet environment from evolving into a compiled, flexible programming language. To create this, there were three main things that needed to be changed about the way interactive spreadsheets work:

- The language needs reusable functions as opposed to having to copy & paste a block of cells.
- Cell ranges need to be created with dynamic runtime-determined decisions.
- In order to support more complex data structures, we must allow complex content within cells as
 opposed to single numbers or strings.

With these changes in mind, we attempted to keep the semantics as similar as possible to traditional spreadsheet programs; this meant implementing a dynamically typed language that is fairly forgiving to the user.

Microsoft Excel and Google Sheets find issues at scale when users need to process more and more complicated calculations on several different sets of data, sometimes at scheduled intervals. Extend was conceptualized as a standalone application that removes the manual element of entering new inputs. It brings the best of spreadsheets and computation into one product.

Complex Calculations Across Many Inputs

Extend is spiritually closer in behavior to Microsoft Excel than other conventional programming languages. Extend can nest basic operations in cells of a range, Extend's proprietary data type, and apply mathematical operations on both individual cells of a range and the entire range itself. A dependency graph is evaluated at runtime to optimize and execute these calculations.

Flexibility

Extend, as a declarative language, allows you to keep dimensional values potentially variable until runtime, and handles some errors with the "empty" keyword, which persists throughout calculation instead of crashing

the program. It supports a range of standard library functions that are additionally supported in conventional spreadsheet technology as well.

2. Project Plan

2.1 Meetings

Our goals were outlined by weekly meetings. We regularly met with Jacob Graff, our advisor throughout the development of Extend. Jacob served as a sounding board whenever Extend's fundamental design philosophy was debated, and as a guide as we determined whether we were on track. We used any leftover time on those days to set goals for the upcoming week and pair program if time permitted.

Our team also met weekly on Fridays to further discuss the progression of Extend. In the first half of the semester, the discussions were primarily philosophical, as decisions had to be made about the language grammar and behavior of certain Extend artifacts prior to development. In the second half, time was devoted to ironing out the development timeline, discussing bugs, and making compiler implementation decisions.

2.2 Development Workflow



Github & Travis CI

Our development and documentation were all done entirely through version control to maximize independent productivity. New features were introduced to the master branch through pull requests, and the team used this as a platform to peer review code to maximize code quality before such features entered production.

An important aspect of development for us was continuous integration. We used Travis CI to trigger project builds on each pull request, which kept us informed regarding unexpected hiccups that sometimes arose during development. Travis CI ensured that new features were implemented with protecting the code base in mind, and provided quick visibility as to whether a new feature would break the existing build.

2.3 Team Member Responsibilities

Team Member	Responsibilities	GitHub Profile
Jared Samet	design philosophy, semantic transformations, code generation	oracleofnj
Nigel Schuster	development protocol, code generation, scripting	Neitsch
Ishaan Kolluri	initial LRM, Final Report, regression tests, stdlib functions, scripting	<u>ishaankolluri</u>
Kevin Ye	initial scanner, regression tests, stdlib functions	kevinye1

3. Git Logs

```
* commit 8e6e9ba23e7d8f401efc0d9e6fc52ca15eac78bc
   |\ Merge: 8146d04 a483282
   | Author: Jared Samet <jared.samet@aya.yale.edu>
   | | Date: Tue Dec 13 18:42:05 2016 -0500
4
6
           Merge pull request #78 from ExtendLang/unop-unary-minus
7
8
           Unop TypeOf
9
10
         commit a4832821fbe532bbf2fcbc38270c9821bcf44ec0
11
         Merge: f8c9b43 8146d04
12
         Author: oracleofnj <jared.samet@aya.yale.edu>
         Date: Tue Dec 13 16:13:30 2016 -0500
13
14
15
             Merge branch 'master' into unop-unary-minus
16
         commit 8146d046adbf93a34157048b3c4b1777207334fc
17 * |
   |\ \ Merge: dcd5766 94afc93
       | Author: Jared Samet < jared.samet@aya.yale.edu>
       Date: Tue Dec 13 16:12:17 2016 -0500
20
21
22
             Merge pull request #75 from ExtendLang/fix-more-tc
23
24
             Fix more tc
25
26
       commit 94afc93afdbe4eb32322f9e8951ef250f1870263
27
       Author: Nigel Schuster <nigel.schusters@googlemail.com>
       | Date: Tue Dec 13 16:02:06 2016 -0500
28
29
30
             Corrected expected TC
31
   | * | commit f6f82767ec790d01dd5b6e7e05509fceaec322ec
   // Author: Nigel Schuster <nigel.schusters@googlemail.com>
34
       Date: Tue Dec 13 16:00:59 2016 -0500
35
36
             Fixed string.xtnd file
37
38
         commit dcd5766e9b71ae3445135a1c731dd35cdafd24d3
   |\ \ Merge: 23328f1 d9abfc0
39
40
       Author: Nigel Schuster <Neitsch@users.noreply.github.com>
41
       Date: Tue Dec 13 15:44:38 2016 -0500
42
43
             Merge pull request #74 from ExtendLang/fix-tc
44
```

```
45
    | | Fixed ternary testcase
46
47
            commit d9abfc09658cf505f5f9b9239953cb7b1347bef7
     *
48
    | |\ Merge: 324779a 23328f1
49
    | | / / Author: Nigel Schuster < Neitsch@users.noreply.github.com>
50
    1/1
          Date: Tue Dec 13 15:38:38 2016 -0500
51
52
               Merge branch 'master' into fix-tc
53
        commit 324779a30d19b74050584d4ef2bd536d3f1b4943
54
55
        Author: Nigel Schuster < nigel.schusters@googlemail.com>
         Date: Tue Dec 13 15:32:26 2016 -0500
56
57
58
             Corrected expected value
59
60
        commit fafe2e602f3a091d77ddbb90887680bcefc9bd95
61
        Author: Nigel Schuster <nigel.schusters@googlemail.com>
62
        Date: Tue Dec 13 15:29:00 2016 -0500
63
64
             Fixed string to
65
    | * | commit 022f05c5b303b6c567d38393517803276c90b157
66
67
      | Author: Nigel Schuster <nigel.schusters@googlemail.com>
        Date: Tue Dec 13 15:23:59 2016 -0500
68
69
70
             Fixed testcase
71
       * commit f8c9b435857d699209cfe033171f124ce78e3dae
72
73
        Author: oracleofnj <jared.samet@aya.yale.edu>
        | Date: Tue Dec 13 16:13:09 2016 -0500
74
75
76
            Make TypeOf work
77
78
           commit bfe1c07e3b3ec6d5237043eb50ce73f2fac80fb9
79
        |\ Merge: 50ed49c 23328f1
80
    | | _ | / Author: oracleofnj < jared.samet@aya.yale.edu>
            Date: Tue Dec 13 15:39:45 2016 -0500
81
    |/|
82
83
               Merge branch 'master' into unop-unary-minus
84
            commit 23328f10c3bf28e27a7e6a081fa91eea27611b5b
85
    |\ \ Merge: 6ad8512 b12fe37
87
      | | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
88
           Date: Tue Dec 13 15:37:18 2016 -0500
89
90
               Merge pull request #73 from ExtendLang/and-or-xor
91
92
               And or xor
93
94
            commit b12fe378c00d0782b36cc270a1388b2bb9094a52
95
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
            Date: Tue Dec 13 15:18:57 2016 -0500
96
97
98
                Implemented and, or and xor
99
100
    | * | commit 90cbaa089e26f712bdb0321c66604d5ab83d4a75
```

```
Author: Nigel Schuster <nigel.schusters@googlemail.com>
102
         | Date: Tue Dec 13 15:16:31 2016 -0500
103
104
              Added left and right shift
105
106
           commit 571ee7e663823d3cdcc388c11c3ef4903cc07625
      |\ \ \ Merge: aeab40d e377567
107
         | | Author: Nigel Schuster <nigel.schusters@googlemail.com>
108
         | Date: Tue Dec 13 14:56:05 2016 -0500
109
110
111
               Merge branch 'power' of https://github.com/ExtendLang/Extend into power
112
              commit e377567e16ab447e156073e63e80ddd17545de28
113
       |\\\\ Merge: 71f395d 6ad8512
114
    | | - | / / Author: Nigel Schuster < Neitsch@users.noreply.github.com>
115
116
    |/| | / /
              Date: Tue Dec 13 14:53:28 2016 -0500
117
    | | |/ /
118
    Merge branch 'master' into power
119
           commit 6ad85121a7782e13817dfd58a7b7308cccf9bf0d
   |\ \ \ Merge: 668a0eb 6a04209
      123
         | Date: Tue Dec 13 14:53:11 2016 -0500
124
125
                Merge pull request #69 from ExtendLang/unop-unary-minus
126
127
                Unop unary minus
128
       * | | commit aeab40daf88e72d6bd61d80553c17c0c2db73930
129
130
       // Author: Nigel Schuster <nigel.schusters@googlemail.com>
       Date: Tue Dec 13 14:55:57 2016 -0500
131
132
133
                Removed unneccessary level of indirection
134
       * | commit 71f395dcefc8f064d9cd0700da3345fc9658e083
135
136
    | | / / Author: Nigel Schuster < nigel.schusters@googlemail.com>
           Date: Tue Dec 13 14:46:27 2016 -0500
137
    |/| |
138
139
              Power to the people of Extend
140
    | | * commit 50ed49cab80e64801ddef4b2242de0aabf886912
141
142
    143
         Date: Tue Dec 13 15:38:04 2016 -0500
144
145
    Merging in main
146
    147
        commit 6a04209cc7ebbdb2a96fc67b66fed983b10c44c8
    | |\ Merge: edb0ecc 668a0eb
149
    Date: Tue Dec 13 14:45:46 2016 -0500
150
    1/1
151
152
             Fix merge conflict
153
154 * |
         commit 668a0eb548dbab171c854c1e08c24628cc5f268c
    |\ \ Merge: f873242 866b68f
155
    | | Author: Jared Samet < jared.samet@aya.yale.edu>
156
```

```
Date: Tue Dec 13 14:37:19 2016 -0500
157
158
159
              Merge pull request #68 from ExtendLang/mod-div
160
161
              Modulo and division
162
163
         commit 866b68f65b6e94cb063a1fb88918f62ebba68bb6
164
         Author: Nigel Schuster < nigel.schusters@googlemail.com>
         Date: Tue Dec 13 14:32:18 2016 -0500
165
166
167
              Added modulo and division operation
168
169
         commit 84dfc3315078447c8df4b64a2f00cda7bef47cf1
170
          Author: Nigel Schuster <nigel.schusters@googlemail.com>
          Date: Tue Dec 13 14:26:25 2016 -0500
171
172
173
             Crunched some code
174
175
            commit f4d5a8114d50acf5683d58629eca82a776c32480
176
      |\ \ Merge: fc94112 f873242
177
      // Author: Nigel Schuster <nigel.schusters@googlemail.com>
            Date: Tue Dec 13 14:22:12 2016 -0500
178
    1/1
179
180
                Merge branch 'master' into simplification
181
182
         commit fc941122a7b42a66c6db83c23e9f8abfce9c5a25
183
          Author: Nigel Schuster <nigel.schusters@googlemail.com>
184
         Date: Tue Dec 13 14:20:35 2016 -0500
185
186
              Added multiplication
187
188
        * commit edb0eccb71dc27ceacae7362802b9d3562dd1f9b
189
        | Author: oracleofnj <jared.samet@aya.yale.edu>
190
        Date: Tue Dec 13 14:43:32 2016 -0500
191
192
             Add unary minus
193
194
            commit 46d5aa6b0827bf684873459b2ea347f43294c488
        |\ Merge: 76210eb f873242
195
196
           Author: oracleofnj <jared.samet@aya.yale.edu>
        _ | /
197
            Date: Tue Dec 13 14:26:35 2016 -0500
    1/1
198
199
                Merge branch 'master' into unop-typeof
200
201
            commit f873242d23ab48c0e4230881d4524d53bdca5b52
202 |\ \ Merge: 4afd78e 6c26c2c
          | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
204
            Date: Tue Dec 13 14:21:26 2016 -0500
205
206
                Merge pull request #65 from ExtendLang/subtraction
207
208
                Addition of Subtraction
209
210
              commit 6c26c2cae72e3780299f447d1258e27dc799e1a3
      *
211
             Merge: bd90241 4afd78e
         / / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
```

```
213
    |/| | Date: Tue Dec 13 14:19:07 2016 -0500
214
215
                 Merge branch 'master' into subtraction
216
     217
             commit bd90241ce837eb554b67204b86d9db76c9888a0f
     * | |
218
        \ Merge: 4042259 c7d4162
219
          | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
220
            Date: Tue Dec 13 14:14:17 2016 -0500
221
222
                 Merge branch 'master' into subtraction
223
           | commit 4042259e9960bc7d4e9fd50a45c8f94231770339
224
225
         | Author: Nigel Schuster < nigel.schusters@googlemail.com>
226
         | Date: Tue Dec 13 14:13:09 2016 -0500
227
228
                Added subtraction
229
    | * | | commit 82a3db27594ad2acc9f8a275a26b8fd01937adde
230
231
      |\ \ \ Merge: 1e1f973 cc40008
232
      233
    | | | / | Date: Tue Dec 13 14:11:31 2016 -0500
234
235
                   Merge branch 'master' into subtraction
236
237
           | commit 1e1f9734f1e8b482c8cd7074014aa4e5c506e19c
238
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
239
         | Date: Tue Dec 13 13:44:36 2016 -0500
240
241
                Subtraction
242
         * commit 76210ebd86f466b3e2c3e837b5aa9d1c4776d56b
243 | |
244
   | | _ | _ | / Author: oracleofnj < jared.samet@aya.yale.edu>
245
   |/| | |
           Date: Tue Dec 13 14:26:18 2016 -0500
246
247
                Start on it
248
249 * | |
            commit 4afd78e4535d88d3c131af4c4dfd5a1812ec17e9
       \\\ Merge: c7d4162 d4d4388
250
      |-|-|/ Author: Nigel Schuster <Neitsch@users.noreply.github.com>
251
252
            Date: Tue Dec 13 14:18:55 2016 -0500
    1/| | |
253
254
                 Merge pull request #64 from ExtendLang/refactor-boolean-binops
255
256
                 Change Lt, Lte in grammar; implement GTE
257
258
    | * | |
            commit d4d4388775ad5c1ce66fa729f5161d324c0da91c
259
   | |\ \ Merge: 663f399 c7d4162
   | | / / Author: Nigel Schuster < Neitsch@users.noreply.github.com>
261
   |/| | Date: Tue Dec 13 14:15:58 2016 -0500
262
263
                 Merge branch 'master' into refactor-boolean-binops
264
            commit c7d41623a82f3819c7a2104a8dabd1ca17c2a5d6
265
    |\ \ \ Merge: cc40008 97821c8
267
    | | | - | / Author: Jared Samet < jared.samet@aya.yale.edu>
   |/| | Date: Tue Dec 13 14:02:13 2016 -0500
268
```

```
269
270
                  Merge pull request #63 from ExtendLang/more-binops
271
272
                  More binops
273
274
            commit 663f399e023f753aca1c87d758cf4cbdd167e466
275
            Author: oracleofnj <jared.samet@aya.yale.edu>
276
            Date: Tue Dec 13 14:12:57 2016 -0500
277
                Remove wildcard from BinOp pattern match
278
279
            commit 1bf6bedffc1776bc66e7dbc413bd74d293778ead
280
281
            Author: oracleofnj <jared.samet@aya.yale.edu>
282
            Date: Tue Dec 13 14:09:47 2016 -0500
283
284
                Add TransformedAway exception for LogAnd and LogOr
285
286
        * | commit 952778e9205d92208cfb48b6b8c92c2c697cfb40
287
      // Author: oracleofnj <jared.samet@aya.yale.edu>
288
            Date: Tue Dec 13 14:01:54 2016 -0500
289
290
                Change Lt, Lte in grammar; implement GTE
291
292
         commit 97821c8291bc07c3607f98179832fb05a89f6e8d
293
          Author: oracleofnj <jared.samet@aya.yale.edu>
294
          Date: Tue Dec 13 13:47:52 2016 -0500
295
296
297
298
    * | commit e0a883a96e63eea084f350d58e12a8d56be8e157
299
         Author: oracleofnj <jared.samet@aya.yale.edu>
300
          Date: Tue Dec 13 13:37:57 2016 -0500
301
302
              Remove NotEq from AST since != is parsed to UnOp(LogNot, BinOp(Eq,...))
303
304 * |
          commit cc40008a9c11d7b084feb72657cf2a69fb5dea62
305
    |\ \ Merge: a656f57 7123ebc
306
        | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
307
                 Tue Dec 13 12:49:33 2016 -0500
308
309
              Merge pull request #60 from ExtendLang/addition2
310
311
              String concatenation
312
            commit 7123ebcb45ebe8a8dc4a924a17760a8eaf016473
313
    | * |
314
    | | \ Merge: eb134b3 a656f57
315
    | | / / Author: Nigel Schuster < Neitsch@users.noreply.github.com>
    1/1 1
            Date: Tue Dec 13 12:41:09 2016 -0500
316
317
318
                Merge branch 'master' into addition2
319
            commit a656f57efd95a86d97de787aa6694f65f39e265a
320
321
            Merge: 81533f4 a64cc15
322
            Author: Jared Samet < jared.samet@aya.yale.edu>
323
            Date: Tue Dec 13 12:38:12 2016 -0500
324
```

```
325
                Merge pull request #61 from ExtendLang/debug-unop
326
327
                Add Debug expr
328
329
    * commit a64cc15c6f95beaf1f4fe85112c4869a2b9b12fb
330
    // Author: oracleofnj <jared.samet@aya.yale.edu>
331
          Date: Tue Dec 13 12:14:45 2016 -0500
332
333
              Add Debug expr
334
335
    * commit eb134b35a63c3f58eb744c921a9235b11399fba3
336
      Author: Nigel Schuster <nigel.schusters@googlemail.com>
337
                Tue Dec 13 12:29:53 2016 -0500
        Date:
338
339
            Moved testcases
340
341
    * commit 044c6bdda6cba9100614b3c20ed355bdecbf2095
342
    | Author: Nigel Schuster < nigel.schusters@googlemail.com>
343
    | Date: Tue Dec 13 12:29:07 2016 -0500
344
            Fixed off by one error
345
346
347
    * commit 59858a0952c52893b5b5245b158b426bbb5c4a4d
348
      Author: oracleofnj <jared.samet@aya.yale.edu>
        Date: Tue Dec 13 11:33:12 2016 -0500
349
350
351
            Whoops no space
352
353
      * commit 0426f3411166f44f628bcb94bdde53ec4a6bb5ba
354
        Author: oracleofnj <jared.samet@aya.yale.edu>
355
        Date: Tue Dec 13 11:30:26 2016 -0500
356
357
           Add test case
358
         commit 49ffa8688e78b8add3b67dbb36fe505f759eac17
359
360
        Merge: 3cdaa5a 81533f4
361
         Author: Nigel Schuster <Neitsch@users.noreply.github.com>
362
          Date: Tue Dec 13 11:19:14 2016 -0500
    1/1
363
364
              Merge branch 'master' into addition2
365
366
          commit 81533f4fc65b6303d3bc21bf755814053e9212ec
    |\ \ Merge: 200b8b6 64d1760
367
368
        | Author: Jared Samet < jared.samet@aya.yale.edu>
369
        Date: Tue Dec 13 11:13:44 2016 -0500
370
371
              Merge pull request #59 from ExtendLang/equal-rights
372
373
              Equal rights
374
375
          commit 64d1760ba8810a2d57de49736980530e5d803441
376
          Author: oracleofnj <jared.samet@aya.yale.edu>
377
          Date: Tue Dec 13 11:04:55 2016 -0500
378
379
              Wake up please, GitHub
380
```

```
* | commit 840aeaf2a7afd1b88756ad9bb391d7763921c76e
382
          Author: oracleofnj <jared.samet@aya.yale.edu>
383
          Date: Tue Dec 13 10:48:03 2016 -0500
384
385
              Remove usage demonstration
386
      387
         | commit 61ff4395ca4fef30147df4e8a7733f3eb07d3ed3
388
        Author: oracleofni <jared.samet@ava.vale.edu>
        Date: Tue Dec 13 03:26:35 2016 -0500
389
390
391
              Add string equality and test cases
392
393
         commit f3112e98f1a16888694bae635e3c2d8707c83469
394
          Author: oracleofnj <jared.samet@aya.yale.edu>
395
          Date: Tue Dec 13 01:57:10 2016 -0500
396
397
              Reduce cut & paste
398
399
        | commit 08ce677a9c4db365fefdf59a91c89b8c8bae5d73
400
        | Author: oracleofnj <jared.samet@aya.yale.edu>
401
        Date: Tue Dec 13 01:35:46 2016 -0500
402
             Remove obsolete testing file
403
404
405
            commit ae8a07e0ccd6e9959d83a800af7e68ef7267e39c
         \ Merge: 862b38c 6090713
406
407
          | Author: oracleofnj <jared.samet@aya.yale.edu>
            Date: Tue Dec 13 01:23:26 2016 -0500
408
409
410
                Merge branch 'print_value_p' into equal-rights
411
412
        * | commit 6090713b9c7b49a8a58308cb4caaaef6a1817aa9
413
          | Author: oracleofnj <jared.samet@aya.yale.edu>
414
          Date: Tue Dec 13 01:22:47 2016 -0500
415
416
                Use correct printf specifier
417
418
             commit 862b38c5f0190732e311a967863ff8862e92490c
         \\ Merge: 50281b1 5e913ad
419
420
      | |/ / Author: oracleofnj <jared.samet@aya.yale.edu>
421
              Date: Tue Dec 13 01:19:14 2016 -0500
422
423
                  Merge branch 'print_value_p' into equal-rights
424
425
    | | * | commit 5e913ad2d9e42cc06417b1de641cb812d712e52a
    | | / / Author: oracleofnj <jared.samet@aya.yale.edu>
          Date: Tue Dec 13 01:16:07 2016 -0500
427
    | / | |
428
429
    Add debug_print; remove print statement that was causing us to falsely
        pass test cases from to_string; show usage in UnOp(Neg)
430
        commit 50281b1d3047296e7f3c5ed362bd4126a37dd0a2
431
432
        Author: oracleofnj <jared.samet@aya.yale.edu>
433
        Date: Tue Dec 13 00:47:28 2016 -0500
434
435
          Numeric equality
```

```
436
    | * | commit 0f76aa4eac383b95c8c9b05c7a1073b18c4e53b4
437
438
    |/ / Author: oracleofnj <jared.samet@aya.yale.edu>
439
          Date: Mon Dec 12 22:30:15 2016 -0500
440
441
              Remove print flags
442
          commit 200b8b6bf132a7d80f6545ab1a8063b95f8b8477
444 |\ Merge: 8834635 7e7276b
        Author: Nigel Schuster <Neitsch@users.noreply.github.com>
        Date: Mon Dec 12 22:16:15 2016 -0500
446
447
448
              Merge pull request #57 from ExtendLang/addition2
449
450
              Addition
451
452
        * commit 3cdaa5a45e4644004a3cb274fd43c0c56ecd38a4
453
    | | Author: Nigel Schuster < nigel.schusters@googlemail.com>
454
      Date: Tue Dec 13 11:12:41 2016 -0500
455
              String addition
456
457
458
      * commit da7c5433dc305f65f46f6bacec96c351aeaef60c
459
      // Author: Nigel Schuster <nigel.schusters@googlemail.com>
          Date: Mon Dec 12 12:43:31 2016 -0500
460
461
462
              Setting flag for addition
463
464
          commit 7e7276ba7b8c816cc7c3c3d8af46948e96b14a16
      *
         Merge: 8aa125f 8834635
465
466
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
467
    1/1
          Date: Mon Dec 12 12:37:35 2016 -0500
468
469
              Merge branch 'master' into addition2
470
471
          commit 88346350bff1466a192f24dbb77f572a329c7204
    |\ \ Merge: 6ed303e 53ae9e0
472
        | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
473
474
          Date: Mon Dec 12 10:18:51 2016 -0500
475
476
             Merge pull request #55 from ExtendLang/runtime
477
478
             Extracted runtime into seperate file
479
480
    | * |
            commit 53ae9e05b3affda0148b3112b8b6362d15cabbc0
    | | \ Merge: d1e196d 6ed303e
482
    | | / / Author: Nigel Schuster < Neitsch@users.noreply.github.com>
            Date: Mon Dec 12 10:06:24 2016 -0500
483
    1/1 1
484
485
                Merge branch 'master' into runtime
486
            commit 6ed303e17033f6525a77d6640b2da8c6bf806f7b
487
           Merge: ecc620e ae49ce6
          | Author: Jared Samet < jared.samet@aya.yale.edu>
490
            Date: Mon Dec 12 09:43:57 2016 -0500
491
```

```
492
              Merge pull request #56 from ExtendLang/truthy-fix
493
494
                Truthy fix
495
496
            commit ae49ce6bba03f66e939fb33bdb7b6a9af58f1696
497
            Author: oracleofnj <jared.samet@aya.yale.edu>
498
            Date: Mon Dec 12 01:15:29 2016 -0500
499
500
                Remove extra file
501
502
      * | commit 7fe6a2234a976d5d85333147b0016d4099f71f5d
503
    // / Author: oracleofnj <jared.samet@aya.yale.edu>
            Date: Mon Dec 12 01:11:53 2016 -0500
504
505
506
                Falsey fix
507
508 * | |
            commit ecc620eba7af7a55e6da7a222e6ef6a2a08c461d
509
    |\ \ Merge: a875b41 4c8caa5
510
          | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
511
            Date: Mon Dec 12 00:17:06 2016 -0500
512
513
                Merge pull request #54 from ExtendLang/final-draft-for-real
514
515
                Final draft for real
516
              commit 4c8caa516cd2dbf01475669aa1ca048ee1c90130
517
         \\ Merge: 04d3b57 a875b41
518
519
         // Author: Jared Samet < jared.samet@aya.yale.edu>
520
             Date: Mon Dec 12 00:09:16 2016 -0500
    1/1
521
522
                  Merge branch 'master' into final-draft-for-real
523
524
             commit 04d3b57dd8f38dafb9edb7999ed203e2c9921f26
         \ \ Merge: 718ecd3 39025b0
            Author: Nigel Schuster <Neitsch@users.noreply.github.com>
526
527
            Date: Mon Dec 12 00:00:29 2016 -0500
528
529
                  Merge pull request #39 from ExtendLang/more-lrm-ed
530
531
                  More 1rm edits
532
533
             commit 39025b056938eb96d3643228d86ff1fc93a9ce24
534
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
             Date: Sun Dec 11 23:59:18 2016 -0500
535
536
537
                  Fixed examples, made small corrections
538
            commit a0ed757bb534a010db452bef1409ec536cb17637
539
540
            | Author: Nigel Schuster <nigel.schusters@googlemail.com>
541
            Date: Sat Dec 10 23:31:38 2016 -0500
542
543
                  Edited explanation for row() and column()
544
545
              commit 7c50ef28d766680fd30067187d01d27fda12e7fa
546
              Author: Nigel Schuster <nigel.schusters@googlemail.com>
547
            Date: Sat Dec 10 23:27:07 2016 -0500
```

```
548
549
                  Added info for strings
550
             commit 738e41b433a38008360696f2ece253a91fafdbe6
551
552
             Author: Nigel Schuster <nigel.schusters@googlemail.com>
553
             Date:
                      Sat Dec 10 23:24:20 2016 -0500
554
555
                  Added boolean example
556
557
          | commit 5377fdff3f9824062de5a599b59ea07f5e2d2d4b
558
         // Author: Nigel Schuster < nigel.schusters@googlemail.com>
                      Sat Dec 10 23:19:26 2016 -0500
559
              Date:
560
561
                  Added arithmetic example
562
563
            commit 718ecd3b1c641c7b5816718c142423fa900d07ca
564
            Author: oracleofnj <jared.samet@aya.yale.edu>
565
            Date: Sat Dec 10 03:09:18 2016 -0500
566
567
                Some changes to LRM; add if (a,b,c)
568
        * | commit d1e196da9518ddc18fd6df57a52c91aef3e71fe8
569
570
      |/ / Author: Nigel Schuster <nigel.schusters@googlemail.com>
            Date: Mon Dec 12 00:23:13 2016 -0500
571
572
573
                Extracted runtime into seperate file
574
            commit a875b4172c1d79172be671c297c09718b244dbdb
575
            Merge: b95d14f 616dd34
577
          Author: Jared Samet < jared.samet@aya.yale.edu>
            Date: Sun Dec 11 23:51:30 2016 -0500
578
579
580
                Merge pull request #53 from ExtendLang/truthy
581
582
                Truthy
583
              commit 616dd34bebf74dfb7b74191141880b7cb68a7019
584
         \\ Merge: 0fa8255 b95d14f
585
586
              Author: oracleofnj <jared.samet@aya.yale.edu>
                      Sun Dec 11 23:15:54 2016 -0500
587
              Date:
588
589
                  Merge branch 'master' into truthy
590
591
              commit b95d14f5dd690433f23be5a71e0affebce6b1829
592
       \\\ Merge: 2a905c7 6dea96f
593
            Author: Jared Samet < jared.samet@aya.yale.edu>
594
                      Sun Dec 11 21:02:28 2016 -0500
595
596
                  Merge pull request #50 from ExtendLang/builder-hotfix
597
598
                  So many builders
599
              commit 0fa8255b29077c769514973ad17fa7eb7fec9351
600
601
              Author: oracleofnj <jared.samet@aya.yale.edu>
602
              Date:
                      Sun Dec 11 23:14:42 2016 -0500
603
```

```
604
                  Apparently still needs some work
605
606
              commit 78584d7808785b7a8e7253788bdfc0240e96cfd9
607
              Author: oracleofnj <jared.samet@aya.yale.edu>
            Date: Sun Dec 11 23:09:07 2016 -0500
608
609
610
                  Thanks a lot Travis
611
            commit b5673d22f67f84f159cd1c28288a195be81aada3
612
613
            Author: oracleofnj <jared.samet@aya.yale.edu>
                     Sun Dec 11 22:51:52 2016 -0500
614
             Date:
615
                  TERRRRRRR NARRRRRR EEEEEEEEEEEEE
616
617
        * | commit b81bc1bab064a134c831685c9d76c47a4b2cd69c
618
619
      |/ / / Author: oracleofnj <jared.samet@aya.yale.edu>
620
            Date: Sun Dec 11 22:04:25 2016 -0500
621
622
                  Maybe Truthy
623
    | * | commit 6dea96f0c2d42f131990b37e515f2e6df198d2e0
    // / Author: oracleofnj <jared.samet@aya.yale.edu>
            Date: Sun Dec 11 20:40:47 2016 -0500
626
627
628
                So many builders
629
630
            commit 2a905c7b5b89a9a2d490bda9782e1e0e54fb8cb3
            Merge: 18fc1be 2bc6c85
631
632
            Author: Jared Samet <jared.samet@aya.yale.edu>
633
            Date: Sun Dec 11 19:15:47 2016 -0500
634
635
                Merge pull request #47 from ExtendLang/function-parameter
636
637
                Function parameter
638
639
            commit 2bc6c85a240f72c3bc040bb2d54e4bb375b1720b
640
            Author: oracleofnj <jared.samet@aya.yale.edu>
            Date: Sun Dec 11 19:11:33 2016 -0500
641
642
643
                Add combined test case
644
645
             commit 860al1b3e4368c6f21337ccd055df4c00f502b0f
         \ \ Merge: 8c3499e 18fc1be
646
647
         // Author: oracleofnj <jared.samet@aya.yale.edu>
             Date: Sun Dec 11 19:04:35 2016 -0500
648
    |/| | |
649
650
                  Merge branch 'master' into function-parameter
651
652
            commit 8c3499e3dd670ff1e16911b823cff1933452c71f
653
            Author: oracleofnj <jared.samet@aya.yale.edu>
            Date: Sun Dec 11 19:03:39 2016 -0500
654
655
656
                Remove extraneous printlines
657
658
            commit 99418c0215673e964074547dced2e0f69a432b06
659
        | | Author: oracleofnj <jared.samet@aya.yale.edu>
```

```
Date: Sun Dec 11 19:02:31 2016 -0500
660
661
662
                Make function parameters work
663
664
            commit 387559b44107284c1056db47378bf9b79458cb93
665
            Author: oracleofnj <jared.samet@aya.yale.edu>
666
            Date: Sun Dec 11 18:39:00 2016 -0500
667
668
                First attempt
669
670
          * commit 8aa125f1d5292eb3f7aa41be186d761248134535
671
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
            Date: Sun Dec 11 20:15:52 2016 -0500
672
673
674
                Made som rpgroess
675
676
        * commit 6c00a72a2912c7f38af73fc49070f63e05243ca6
677
    | | _ | / Author: Nigel Schuster < nigel.schusters@googlemail.com>
678
    |/|
            Date: Sun Dec 11 18:45:46 2016 -0500
679
                Some progress
680
681
682
            commit 18fc1beab2196a2a45d6ce4cdf2b528f2545c03e
            Merge: f1dd8a5 f7e9be8
683
684
            Author: Nigel Schuster <Neitsch@users.noreply.github.com>
            Date: Sun Dec 11 18:08:11 2016 -0500
685
686
687
                Merge pull request #45 from ExtendLang/empty
688
                Implemented empty, small flag setting fix
689
690
691
            commit f7e9be8c20044c73ea00ce076bd075a24e809dfa
692
      \\ Merge: 18db166 f1dd8a5
693
         / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
                    Sun Dec 11 16:30:05 2016 -0500
694
    1/1
            Date:
695
696
                Merge branch 'master' into empty
697
            commit f1dd8a5ca9976def254e61530ed91c650c09070b
698
699
            Merge: 3c4681d 50366f4
700
            Author: Jared Samet < jared.samet@aya.yale.edu>
701
            Date: Sun Dec 11 16:18:44 2016 -0500
702
703
                Merge pull request #46 from ExtendLang/actually-make-global-scope
704
705
                Actually make global scope
706
707
            commit 50366f43d98220a48d90a6faa884c70e68778627
708
            Author: oracleofnj <jared.samet@aya.yale.edu>
709
            Date: Sun Dec 11 15:38:05 2016 -0500
710
711
                Make sure locals are properly masking globals
712
713
            commit 046c7cc0ca4ad773ac83b7677dd7f14e3d8c9337
714
            Author: oracleofnj <jared.samet@aya.yale.edu>
715
          Date: Sun Dec 11 15:30:53 2016 -0500
```

```
716
717
               Make globals work, fix bug
718
719
            commit a844a4635358aeba7edd4f6faa83871036c1fee4
720
            Author: oracleofnj <jared.samet@aya.yale.edu>
721
            Date: Sun Dec 11 15:14:09 2016 -0500
722
723
               So close
724
      * | commit 67849f0177f0c67cd19a61121b9d971bab6a0474
725
726
    // / Author: oracleofnj <jared.samet@aya.yale.edu>
            Date: Sun Dec 11 15:01:52 2016 -0500
727
728
729
               Make the global scope object
730
731
    | * |
            commit 18db1667adb6a80cc1d0bbb4b6b657ec6db0200e
    | |\ \ Merge: 393d02c 3c4681d
732
733
    | |/ / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
734
    | / | |
            Date: Sun Dec 11 15:05:42 2016 -0500
735
               Merge branch 'master' into empty
736
737
738 * | |
            commit 3c4681d6a7aaf164d403b3148822d8992783754d
       \\ Merge: abcffd0 7be1001
739
740
          Author: Jared Samet <jared.samet@aya.yale.edu>
741
            Date: Sun Dec 11 13:31:12 2016 -0500
742
743
               Merge pull request #44 from ExtendLang/float-display-hotfix
744
745
               Floating point math hotfix
746
747
             commit 7be1001d43b1082b4cc2fa6801f619f99f0679c8
748
         \ \ Merge: 556da44 abcffd0
749
          / Author: Jared Samet < jared.samet@aya.yale.edu>
                     Sun Dec 11 13:26:55 2016 -0500
750
    1/1
             Date:
751
752
                 Merge branch 'master' into float-display-hotfix
753
              commit abcffd04216b35160b67c1f7ca29de8020a57774
754
       \ \ Merge: d65aad4 0ad195e
755
         | Author: Jared Samet < jared.samet@aya.yale.edu>
756
            Date: Sun Dec 11 13:19:05 2016 -0500
757
758
759
                 Merge pull request #42 from ExtendLang/encapsulate-build-scope
760
761
                  Encapsulate a little more of building the scope
762
               commit 0ad195e79e1bce957f7d265e7365de0ffc718988
763
764
      |\ \ \ Merge: 9caf464 d65aad4
765
               Author: oracleofnj <jared.samet@aya.yale.edu>
               Date: Sun Dec 11 12:42:42 2016 -0500
766
    1/1
767
768
                   Merge branch 'master' into encapsulate-build-scope
769
770
            commit 9caf4645cf9a747101bed8801917dda953b3df5e
```

```
Date: Sun Dec 11 12:41:40 2016 -0500
773
774
                  Encapsulate a little more of building the scope
775
776
        * | commit 556da44ef36ec5b4b93aade0ef2bb2372f0cd0a4
777
      // / Author: oracleofnj <jared.samet@aya.yale.edu>
778
            Date: Sun Dec 11 13:18:15 2016 -0500
779
                  Floating point math hotfix
780
781
782
        * | commit 393d02c61efdaa9e246509fef8b3b61303bf0b96
783
      // Author: Nigel Schuster <nigel.schusters@googlemail.com>
            Date: Sun Dec 11 14:25:02 2016 -0500
784
    1/1
785
786
                Implemented empty, small flag setting fix
787
788
            commit d65aad46b60dde24fdc2740ec1e26676fa03a2e0
       \\ Merge: 9cee2fc 0f5a6ba
789
790
      // Author: Jared Samet < jared.samet@aya.yale.edu>
791
            Date: Sun Dec 11 12:09:28 2016 -0500
792
793
                Merge pull request #40 from ExtendLang/make-global-scope
794
795
                Make global scope
796
797
            commit 0f5a6ba3e6c1e3e29a4ed02f70cf418ce059bd4b
798
            Merge: 56b58d9 9cee2fc
799
           Author: oracleofnj <jared.samet@aya.yale.edu>
800
            Date: Sun Dec 11 12:04:05 2016 -0500
801
802
                Merge branch 'master' into make-global-scope
803
804
          commit 9cee2fc6bb72ad0cf074bbeb16faa4759778f5d1
         Author: kevinyel <kevinyel@users.noreply.github.com>
805
         Date: Sun Dec 11 10:07:36 2016 -0500
806
807
808
             Testcases (#38)
809
810
              * Updated testcases with to_string method
811
812
              * Merged with master
813
814
          commit 56b58d9b121d5b8e26a25bdb45572b9de5ed89bb
815
          Author: oracleofnj <jared.samet@aya.yale.edu>
          Date: Sun Dec 11 12:01:28 2016 -0500
816
817
818
              Encapsulate build_var_defns
819
820
        commit f25e5b377975ab5473d0592720ded03b7bce259f
821
         Author: oracleofnj <jared.samet@aya.yale.edu>
          Date: Sun Dec 11 11:43:19 2016 -0500
822
823
824
              Only construct var_defns once
825
826
         commit f3f4bef9eb2db0313d80dfbe6bdbf83f3a42076d
      *
827
    | | Author: oracleofnj <jared.samet@aya.yale.edu>
```

```
Date: Sun Dec 11 00:45:44 2016 -0500
828
829
830
             Make global variable to hold vardefns
831
832
        commit a8f4ad93aa0dd3365b6661a16035f40a8a1c5587
    *
833
       | Author: oracleofnj <jared.samet@aya.yale.edu>
834
        Date: Sat Dec 10 21:28:18 2016 -0500
835
             Isolate the part of building a scope for reuse with global variables
836
837
    * | commit 58f7a4d3c4aece7e9f12809f50479a2b8267f01d
838
    // Author: Nigel Schuster <nigel.schusters@googlemail.com>
839
               Sat Dec 10 18:05:01 2016 -0500
840
         Date:
841
842
             Performing copy before returning, so that memory can be freed with alloca
843
844 * |
         commit c0e56aa3b9853d9e44a27109f8c2666d752afe7b
845
   |\ \ Merge: ef0e5e7 a4b35df
846
      | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
847
       Date: Sat Dec 10 17:07:00 2016 -0500
848
849
             Merge pull request #37 from ExtendLang/dereference
850
851
             Dereferencing 1x1 subrange
852
        commit a4b35df069c5c5243c499cd7aaeda27973678cb6
853
854
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
         Date: Sat Dec 10 16:42:17 2016 -0500
855
856
857
            Removed obsolete methods
858
    859
           commit cf08a8cc461f1aa54f7f408c78bbf0e20269ccca
      |\ \ Merge: ce833d4 ef0e5e7
        / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
           Date: Sat Dec 10 16:36:20 2016 -0500
862
    1/1
863
864
              Merge branch 'master' into dereference
865
           commit ef0e5e7bc6c971c65c8f48460b27479aebb56075
866
867
      \ \ Merge: 0177dc2 38ba6e6
       | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
868
           Date: Sat Dec 10 16:36:03 2016 -0500
869
870
871
              Merge pull request #36 from ExtendLang/comp-warn
872
873
               Suppressing compiler warnings
874
    | * | commit 38ba6e64fbe18f17f1611c695655b96670cda5b2
875
876
    877
    | |/|
           Date: Sat Dec 10 13:18:39 2016 -0500
878
879
               Suppressing compiler warnings
880
           commit 0177dc290c5e56e428fa135e0b0b9a4495c1e05f
881 * | |
882
    |\ \ Merge: 127f99d e259556
```

```
884
            Date: Sat Dec 10 16:35:50 2016 -0500
885
886
                Merge pull request #35 from ExtendLang/linker
887
888
                Linker
889
890
            commit e2595560863fe9fff107818f713b5e8508d0c768
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
891
            Date: Sat Dec 10 13:53:12 2016 -0500
892
893
894
                Removed nodefaultlibs directive
895
            commit 09c39619d89f65a19d537336c3b3680553f732a0
896
897
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
            Date: Sat Dec 10 13:50:19 2016 -0500
898
899
900
                Modified linker to work for travis
901
902
            commit 36d662a599754648d00c4d773fb16ea1a59d335f
903
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
904
            Date: Sat Dec 10 13:37:27 2016 -0500
905
906
                Attempt to link math
907
908
            commit 2d4564a4f9aae99f67f72baf514b7095b452ee08
909
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
910
            Date: Sat Dec 10 13:22:14 2016 -0500
911
912
                Linking math library
913
914
            commit 9deac9bbd385607cbd5d80a97e929bc52f7f9633
915
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
916
            Date: Sat Dec 10 13:06:17 2016 -0500
917
918
                Modified compile script. Removed debug output
919
920
            commit d35607b7b7830c502d4af4d1d9c65c70bfa37d96
921
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
922
            Date: Sat Dec 10 13:04:30 2016 -0500
923
924
                Simpler testscript
925
926
            commit d37dac2f40ea9f0013dd69b6ce40197fe4ec82ab
927
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
928
            Date: Sat Dec 10 12:36:45 2016 -0500
929
930
                Fixed duplicate import issue
931
932
    | * | commit 31c26bccd855332e33505e8f887727069a450a00
933
    | | / / Author: Nigel Schuster < nigel.schusters@googlemail.com>
934
            Date: Sat Dec 10 12:30:29 2016 -0500
    935
936
                Added cmd args to link file
937
938 * | |
            commit 127f99dc5c44b0cc673b7c254847c54b8a23610b
939 | \ \ \ \  Merge: b2e881d a350720
```

```
Author: Nigel Schuster <Neitsch@users.noreply.github.com>
            Date: Sat Dec 10 16:35:41 2016 -0500
941
942
943
                Merge pull request #34 from ExtendLang/rel-import
944
945
                Import path switch
946
947
      * | commit a350720f73027f0b5d99b73492d4326081324d84
948
    | | / / Author: Nigel Schuster < nigel.schusters@googlemail.com>
949
                   Sat Dec 10 11:40:50 2016 -0500
            Date:
950
951
                Switched import style from root directory to relative path
952
953
            commit b2e881df8c2d033bbe299575b6d9092ba7ab51ea
    |\ \ Merge: 6a8f836 90e39b0
954
955
       / / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
            Date: Sat Dec 10 16:35:31 2016 -0500
956
    1/1 1
957
958
                Merge pull request #33 from ExtendLang/ts-fix
959
960
                Testscript fix
961
962
    | * | commit 90e39b0ba32729808fa7f835ce8adf9784ec5fb4
963
    |/ / Author: Nigel Schuster <nigel.schusters@googlemail.com>
         Date: Sat Dec 10 11:24:19 2016 -0500
964
965
966
              Fixed issue in testscript that might report false results when it fails
        early
967
968
    * commit ce833d4433f8b0e2ea4782478a3b6d61e85ec0d5
969
    // Author: Nigel Schuster <nigel.schusters@googlemail.com>
970
        Date: Sat Dec 10 16:14:34 2016 -0500
971
972
            Dereferencing 1x1 subrange
973
974 *
       commit 6a8f8363850840afc597a0b97853ae66a8709683
975
    |\ Merge: eac9e77 fc886a9
976
      | Author: Jared Samet < jared.samet@aya.yale.edu>
977
        Date:
                Fri Dec 9 18:29:22 2016 -0500
978
979
            Merge pull request #24 from ExtendLang/final-draft-lrm
980
981
            Almost the final draft!
982
          commit fc886a96416ec9513edbe1afac1c94d39b41ae02
983
984
    | |\ Merge: eac9e77 cda63cb
985
    // Author: oracleofnj <jared.samet@aya.yale.edu>
          Date: Fri Dec 9 18:23:52 2016 -0500
986
987
988
              Merge branch 'final-draft-lrm'
989
990
          commit cda63cb3e7aeb7efa06b4af110a9064709b384ac
991
          Merge: fb18949 eac9e77
992
          Author: oracleofnj <jared.samet@aya.yale.edu>
993
          Date: Fri Dec 9 18:23:24 2016 -0500
994
```

```
995
         Fix merge conflict
996
997
           commit eac9e77c743d4730ef72b6fa7f4a72304808e35d
    *
998
        \ Merge: 90fc58e fe825f4
999
         | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
1000
         Date: Fri Dec 9 18:04:08 2016 -0500
1001
1002
              Merge pull request #29 from ExtendLang/refactor
1003
1004
              Made new execution strategy work
1005
         commit fe825f42d95f8d620d082764118657e3791b33ff
1006
1007
          Author: oracleofnj <jared.samet@aya.yale.edu>
1008
          Date: Fri Dec 9 17:55:39 2016 -0500
1009
1010
              Compact last bit
1011
1012
         | commit b02dbbe930e7ef9bf5a4e454a2e367aa0b50fce1
1013
          Author: oracleofnj <jared.samet@aya.yale.edu>
1014
          Date: Fri Dec 9 17:49:00 2016 -0500
1015
1016
              Give formula functions names
1017
         | commit edd7aa40ee048a31d84a1f14c73a96d0722c242b
1018
1019
          Author: Nigel Schuster <nigel.schusters@googlemail.com>
          Date: Fri Dec 9 17:40:57 2016 -0500
1020
1021
1022
              Removed artifcats
1023
         commit 9b49e202be310550b9391dc6de3ad1aee961f53a
1024
1025
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
1026
         Date: Fri Dec 9 17:37:59 2016 -0500
1027
1028
              Fixed I/O testcases
1029
1030
            commit a4ad4b19eae1f9bfaeae27c3a6810b26da856fee
1031
       |\ \ Merge: b07398b ed01567
1032
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
1033
            Date: Fri Dec 9 17:18:13 2016 -0500
1034
1035
                Merge
1036
1037
            commit ed01567417fae9a616e32e1d08614fa08424a6bd
1038
            Author: oracleofnj <jared.samet@aya.yale.edu>
1039
            Date: Fri Dec 9 17:17:06 2016 -0500
1040
1041
                Make sizeof not break tests
1042
     | * | commit b07398bd13daed37fc65f0317100f816940257c9
1043
1044
       // Author: Nigel Schuster <nigel.schusters@googlemail.com>
            Date: Fri Dec 9 17:17:19 2016 -0500
1045
1046
1047
                Added macro for function definition
1048
1049
         commit a0a7054e9ce6d82ee760a64a0e3cac3d1ae89c85
     1050
```

```
| Date: Fri Dec 9 17:01:20 2016 -0500
1051
1052
1053
              Use symbol table
1054
1055
            commit 56fd61b31aa673bc532a40300d61349e0205bb53
       *
1056
       |\ Merge: 38aedba dfb702e
1057
           | Author: oracleofnj <jared.samet@aya.yale.edu>
1058
            Date: Fri Dec 9 16:11:10 2016 -0500
1059
1060
               Merge branch 'refactor' of https://github.com/ExtendLang/Extend into
       refactor
1061
1062
            commit dfb702e023849665c7fc46b0488c85cc8c46c26f
1063
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
1064
            Date: Fri Dec 9 16:01:08 2016 -0500
1065
1066
                Converted more to value_p from subrange_p
1067
1068
         * | commit e963186b1712b1531c8982c35e2ead98e2da3907
1069
          | Author: Nigel Schuster < nigel.schusters@googlemail.com>
1070
            Date: Fri Dec 9 15:42:35 2016 -0500
1071
1072
                Made example TC work
1073
1074
         | commit 38aedba9bfcd2f48a1868fe8f256d9e512dcc0cc
1075
       // Author: oracleofnj <jared.samet@aya.yale.edu>
1076
            Date: Fri Dec 9 16:10:35 2016 -0500
1077
1078
                Create symbol table
1079
1080
         commit eb76234747c9b70a41891853ddfd4730f1950a2c
1081
         | Author: Nigel Schuster < nigel.schusters@googlemail.com>
1082
         Date: Fri Dec 9 11:14:58 2016 -0500
1083
1084
              Made Hello World work again
1085
1086
         commit 08aeb70eac43c1fd2e1b8e9f6ead7be11fbc9c12
1087
          Author: oracleofnj <jared.samet@aya.yale.edu>
          Date: Fri Dec 9 02:13:09 2016 -0500
1088
1089
1090
              Done for the night
1091
1092
         commit cb39114298fe29c6652e422d86d663482b2d2961
1093
          Author: oracleofnj <jared.samet@aya.yale.edu>
1094
          Date: Fri Dec 9 01:35:36 2016 -0500
1095
1096
              More refactoring
1097
1098
         | commit 7974bbdf6d9be11657ebf61e534f331efd920ff2
1099
          Author: oracleofnj <jared.samet@aya.yale.edu>
1100
          Date: Thu Dec 8 23:53:31 2016 -0500
1101
1102
              Banish the term extern
1103
1104
         commit 49af9724790d0c38ccfcf336c07014f2165948ed
     1105
```

```
Date: Thu Dec 8 23:45:30 2016 -0500
1106
1107
1108
               Add a couple comments
1109
1110
          commit 0fbf461200018cf1345a9b3ee2b5efd37189c2ce
      *
1111
          Author: oracleofnj <jared.samet@aya.yale.edu>
1112
          Date: Thu Dec 8 21:52:24 2016 -0500
1113
1114
               Get my bearings
1115
     1116
         commit 5ecb59941a875361553eb25544f92aaaf5231ca0
1117
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
                  Thu Dec 8 19:47:51 2016 -0500
1118
           Date:
1119
1120
              Added some documentation
1121
         commit 65066fc265e8c4e89272ce050c4424a4873b0674
1122
1123
         | Author: Nigel Schuster < nigel.schusters@googlemail.com>
1124
         Date: Thu Dec 8 12:18:57 2016 -0500
1125
              Added name display for variable
1126
1127
      1128
             commit f985cc8022350d02fd0c3091aa8e10b85f334c38
       |\ \ Merge: 4b58ce9 a65c24e
1129
1130
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
1131
             Date: Wed Dec 7 12:14:59 2016 -0500
1132
1133
                 Merge branch 'finish-transformations' into get-val-rev
1134
             commit a65c24ed8b30ed639f67913bdd1ffef1b31b0437
1135
1136
         |\ \ Merge: 29d02d9 90fc58e
1137
      |_|/ / Author: oracleofnj <jared.samet@aya.yale.edu>
1138
     1/1 1 1
             Date:
                      Tue Dec 6 16:14:10 2016 -0500
1139
1140
                   Merge branch 'master' into finish-transformations
1141
1142
              commit 29d02d923ffa6af98aacbd2375d6e533f6035ccf
            \ Merge: 0e8398f 52e7a8a
1143
             | Author: oracleofnj <jared.samet@aya.yale.edu>
1144
1145
             Date:
                      Mon Dec 5 13:34:27 2016 -0500
1146
1147
                   Fix merge conflict - keep expr_loc
1148
            | commit 0e8398f46809eb8f11d393a663f0096966d2573e
1149
1150
         | | Author: oracleofnj <jared.samet@aya.yale.edu>
1151
             Date: Sun Dec 4 13:23:27 2016 -0500
1152
1153
        Transform all LHS expressions including integers to IDs; check for
         strings or range literals and disallow
        1154
1155
                 commit 36f5848cd9bd8421e6a61e5b79553c5b0aeeac8e
         |\ \ \ Merge: 330bec3 2ae2b83
1156
1157
               | Author: oracleofnj <jared.samet@aya.yale.edu>
1158
               Date: Sat Dec 3 14:07:39 2016 -0500
1159
1160
                 Merge branch 'master' into finish-transformations
```

```
1161
1162
                   commit 330bec3fea9d441236961977886b8c8e7d09df75
1163
                   Merge: 9702e5b 8a60995
1164
                   Author: oracleofnj <jared.samet@aya.yale.edu>
1165
                   Date: Fri Dec 2 13:49:34 2016 -0500
1166
1167
                       Merge branch 'master' into finish-transformations
1168
1169
                     commit 9702e5b56018c6187cb0e9421889369f9c867bd6
              \\\ Merge: 047cfec 5bdd52c
1170
1171
                     Author: oracleofnj <jared.samet@aya.yale.edu>
1172
                             Thu Dec 1 21:14:35 2016 -0500
                     Date:
1173
1174
                         Merge branch 'master' into finish-transformations
1175
1176
                     commit 047cfec9cf0a8e645b8b61d52238a107a479db38
1177
                     Author: oracleofnj <jared.samet@aya.yale.edu>
1178
                     Date: Thu Dec 1 18:42:04 2016 -0500
1179
1180
                         Add short circuiting test cases
1181
1182
                       commit 6acd7f624a1db65cba846ea8745a6457f638ce7c
1183
                    \ Merge: 5762112 72360f4
                      | Author: oracleofnj <jared.samet@aya.yale.edu>
1184
1185
                       Date: Thu Dec 1 18:31:33 2016 -0500
1186
1187
                           Merge remote-tracking branch 'origin/fail-silent' into finish-
         transformations
1188
                       commit 57621128490ab146c2c82339fe3edfde4fdb0029
1189
1190
                       Author: oracleofnj <jared.samet@aya.yale.edu>
1191
                      Date: Thu Dec 1 16:04:06 2016 -0500
1192
1193
                           Get rid of wildcard pattern match in interpreter
1194
1195
                          commit a90a34323a7fe253998bbffb3eee8e8212017587
1196
                         Merge: 85bc21d 7abb394
1197
                         Author: oracleofnj <jared.samet@aya.yale.edu>
                                 Thu Dec 1 15:59:40 2016 -0500
1198
                          Date:
1199
1200
                             Merge branch 'master' into finish-transformations
1201
                         commit 85bc21d8c88af6bdce2a7ca4eec8939dad0783a2
1202
1203
                          Author: oracleofnj <jared.samet@aya.yale.edu>
1204
                          Date: Thu Dec 1 15:59:05 2016 -0500
1205
1206
                             Remove unnecessary file
1207
1208
                         commit 81fe5654c032c936924bc103c97d1ae4cd23409c
1209
                          Author: oracleofnj <jared.samet@aya.yale.edu>
1210
                         Date: Thu Dec 1 15:58:40 2016 -0500
1211
1212
                             Finish range literals
1213
1214
                          commit da41520e92a27c3ceeaf63b6fb32bda57d16baf0
1215
                         Author: oracleofnj <jared.samet@aya.yale.edu>
```

1216		Date: Thu Dec 1 14:54:21 2016 -0500
1217		
1218		So close
1219 1220		commit 2cabadcf4a488b40a33944794bebe5a3afec6344
1220	*	Merge: cf36f70 13cd317
1221		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1223		Date: Thu Dec 1 11:58:03 2016 -0500
1224		Date. Thu Dec 1 11.30.03 2010 -0300
1225		Merge branch 'master' into finish-transformations
1226		nerge branen master theo rinton cransformations
1227	*	commit cf36f702053bdb168c51d2ae78d62a013f73cc4d
1228		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1229		Date: Thu Dec 1 09:47:38 2016 -0500
1230		
1231		Sample digits function
1232		
1233	*	commit febcff889be83fe6edc63cbffdaefc0d7b02d519
1234		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1235		Date: Wed Nov 30 15:54:45 2016 -0500
1236		
1237		Add oddball formula test case and try out theory for range
	literal	
1238		
1239	*	commit 4a1ff4f66645eed55713a02b5d13d330cf65a054
1240		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1241		Date: Wed Nov 30 14:54:05 2016 -0500
1242		
1243 1244		Finish reducing Ternary to ReducedTernary
1244		commit 8f0a9816dcc979fcfa348e9e7923b6fa685e1ef7
1245	*	Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1247		Date: Wed Nov 30 12:35:43 2016 -0500
1248		Date. Wed Nov 30 12.33.13 2010 0300
1249		Working on reducing ternaries
1250		
1251	*	commit d3c581201b653c520d2a95b66e59d59dc88684e3
1252		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1253		Date: Wed Nov 30 02:39:58 2016 -0500
1254		
1255		Finish desugaring switch
1256		
1257	*	commit 0a22713d988acc28c1e41b556370bcb076782a57
1258		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1259		Date: Wed Nov 30 00:09:10 2016 -0500
1260		
1261		Getting ready to ternarize switch
1262		
1263	*	commit 84f016a72cf8ddfc8c1603a8914a7d130a23e7d9
1264 1265		Author: oracleofnj <jared.samet@aya.yale.edu> Date: Tue Nov 29 21:54:15 2016 -0500</jared.samet@aya.yale.edu>
1266		Date. The NOV 25 21:34:13 2010 -0000
1267		Fix bug in switch() with default case
1268		111 Day in Dwitton() with delaute case
1269	*	commit d331b7a827290f92b327a315f79a57a294c65185
1270		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>

	1051	
		Date: Tue Nov 29 17:33:41 2016 -0500
1275	1273	
1276	1974	purposes
Author: oracleofnj <jared.samet@aya.yale.edu> Date: Tue Nov 29 16:14:46 2016 -0500</jared.samet@aya.yale.edu>		
Date: Tue Nov 29 16:14:46 2016 -0500		
Missed one		
Missed one		Date: Tue Nov 29 16:14:46 2016 -0300
1281		
281		
Author: oracleofnj < area, samet@aya.yale.edu> Date: Tue Nov 29 16:13:21 2016 -0500		
Date: Tue Nov 29 16:13:21 2016 -0500 1284		
Transform &&, into ternary expressions to support proper short—circuit evaluation		
Transform &&, into ternary expressions to support proper short-circuit evaluation		
Short-circuit evaluation 1286	-	
1286	1200	
1287	1286	
288		* commit 4b58ce91659ae05d73b6046c41c2fa282dee869a
Date: Wed Dec 7 12:13:23 2016 -0500 1290		Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
Tried to add more instructions 1292	1289	
1292	1290	
1293	1291	Tried to add more instructions
Author: Nigel Schuster <nigel.schusters@googlemail.com> 1295</nigel.schusters@googlemail.com>	1292	
1295 Date: Wed Dec 7 10:48:35 2016 -0500 1296	1293	* commit 099efe7eleb8caaf8af5bla30198ca1b720ad401
1296	1294	Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
1297	1295	Date: Wed Dec 7 10:48:35 2016 -0500
1298	1296	
1299 *		Making progress on evaluating dimensions
1300		
1301		* commit fa09df7a2ac5d43f34fdc2eaca5a5a7c8fb6c3ee
1302		
1303		Date: Wed Dec 7 09:51:23 2016 -0500
1304		
1305		
1306		
1307		
1308		
1309		Date: Wed Dec / 00:41:23 2016 -0500
1310		
1311		
1312		
1313 Date: Tue Dec 6 23:14:32 2016 -0500 1314 1315 1316 1317 * 1318 1318 1319 1320 1321 1322 1322 1323 1324 1325 1326 1327 1328 1329 1320 1321 1322		!!!!!!!
1314		
1315 At least it compiles 1316 1317 * 1318 1319 1320 1321 1322 1322		
1316		At least it compiles
1317 *		
1318 Author: Nigel Schuster <nigel.schusters@googlemail.com> 1319 Date: Tue Dec 6 22:42:22 2016 -0500 1320 Getting closer. Need to add var_defn wrapper in build_formula 1322 </nigel.schusters@googlemail.com>		* commit 34324847082b94eeded12fca2b820425ee5aabc1
1319 Date: Tue Dec 6 22:42:22 2016 -0500 1320 Getting closer. Need to add var_defn wrapper in build_formula 1322		
1320		
1321 Getting closer. Need to add var_defn wrapper in build_formula 1322		
1322		Getting closer. Need to add var_defn wrapper in
1323 * commit 05145cab5d7bf34581622598567fa14502146e29	1322	
	1323	* commit 05145cab5d7bf34581622598567fa14502146e29

1324	Author: Nigel Schuster < nigel.schusters@googlemail.com>
1325	Date: Tue Dec 6 21:10:11 2016 -0500
	Date. The Dec 0 21.10.11 2010 -0300
1326	
1327	Minor fix
1328	
1329	* commit 174a7b81a25ac76e94faf513c34700d30e444c01
1330	Author: Nigel Schuster < nigel.schusters@googlemail.com>
1331	Date: Tue Dec 6 11:09:31 2016 -0500
1332	
1333	Made partial progress on implementing variable instanciation
1000	and such
1004	and Such
1334	
1335	* commit 767851d3edbba7585c625da901489d6a51380ab6
1336	Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
1337	Date: Mon Dec 5 16:18:17 2016 -0500
	Date. Mon Dec 3 10.10.17 2010 -0500
1338	
1339	Finished C side implementation of getVal
1340	
1341	* commit 6b837d41af7b3872e8d4c3e20da83ce95baf0280
1342	
	\ \ \ \ \ \ Merge: 1ce7f83 910bd01
1343	Author: Nigel Schuster < nigel.schusters@googlemail.com>
1344	Date: Mon Dec 5 16:06:34 2016 -0500
1345	
1346	
1347	
1348	* commit 1ce7f83e9cc542daba3b0395f2bebbc8c779e473
1349	Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1350	Date: Mon Dec 5 14:18:41 2016 -0500
1351	
1352	Create patch file
1353	
1354	* commit f1b11ee94f4792ff5a6ddf2e837fffe1a3396dbe
1355	Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
1356	Date: Mon Dec 5 12:46:35 2016 -0500
1357	
1358	
1359	
1360	* commit fb1894999d655ab960f63a01c0c820373b6d8c1a
1361	
1362	_ _ _ _ _ _ _ / Author: oracleofnj < jared.samet@aya.yale.edu>
1363	/ Date: Wed Dec 7 23:44:17 2016 -0500
1364	
1365	Merge branch 'master' into final-draft-lrm
1366	
1367	* commit 90fc58e52cb1bdec2ea03f5b81c0bbda9c0f954b
1368	\\\\\\\\\\\\\Merge: 910bd01 04c2c65
1369	_ / / / / / / Author: Jared Samet < jared.samet@aya.yale.edu>
1370	/ Date: Mon Dec 5 22:14:41 2016 -0500
1371	
1372	Merge pull request #23 from ExtendLang/read-empty
1373	
1374	Read empty
1375	
1376	* commit 04c2c655bfe133f98aa03b93739a0545a8dc8e37
1377	Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1378	Date: Mon Dec 5 15:53:35 2016 -0500

Add slurp by passing 0 max bytes 1880		
1381		
Date: Mon Dec 5 14:46:46 2016 -0500		
Date: Mon Dec 5 14:46:46 2016 -0500		
Start handling empty		
388	1386	Start handling empty
Author: oracleofnj <jared.samet@aya.yale.edu> 1390</jared.samet@aya.yale.edu>	1387	
Date: Wed Dec 7 23:43:25 2016 -0500		
Update PDF 1392		
Update PDF 1393		Date: Wed Dec 7 23:43:25 2016 -0500
1393		
	1 1 1 1 1 1 1 1	Opdate FDF
Author: oracleofnj < jared.samet@aya.yale.edu> Date: Wed Dec 7 23:43:01 2016 -0500		
Date: Wed Dec 7 23:43:01 2016 -0500		
1398	1396	
1399	1397	
1400		Fix failing test cases
1401		
Author: oracleofnj <jared.samet@aya.yale.edu> 1403</jared.samet@aya.yale.edu>		
Date: Wed Dec 7 23:06:36 2016 -0500 1404 1405		
1404		
1406		
1407	1405	
Author: oracleofnj < jared.samet@aya.yale.edu>	1406	
1409	1407	
1410 1411 1411 1412 1413 1413 1414 1415 1415 1418 1419 1416 1417 1417 1418 1419 1419 1419 1419 1419 1419 1419		
1411		
1412		
1413		
1415		* commit 05ded19fed74d99c33fe3e5333ce190413f11c7c
1416	1414	Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1417	1415	Date: Wed Dec 7 15:47:52 2016 -0500
1418		
1419		More work
1420 Author: oracleofnj <jared.samet@aya.yale.edu> 1421 Date: Wed Dec 7 11:32:11 2016 -0500 1422 </jared.samet@aya.yale.edu>		
1421		
1422		
1423		
1424		Working
1426 Author: oracleofnj <jared.samet@aya.yale.edu> 1427 Date: Wed Dec 7 02:35:06 2016 -0500 1428 </jared.samet@aya.yale.edu>		
1427 Date: Wed Dec 7 02:35:06 2016 -0500 1428 1429 1430 1431 * commit e3c94366de1322d5409194ca08043d6d0cc355f5 1432 Author: oracleofnj <jared.samet@aya.yale.edu> 1433 Date: Wed Dec 7 00:44:22 2016 -0500</jared.samet@aya.yale.edu>		
1428		
1429		Date: Wed Dec / U2:35:06 2016 -0500
1430		
1431 * commit e3c94366de1322d5409194ca08043d6d0cc355f5 1432 Author: oracleofnj <jared.samet@aya.yale.edu> 1433 Date: Wed Dec 7 00:44:22 2016 -0500</jared.samet@aya.yale.edu>		
1432 Author: oracleofnj <jared.samet@aya.yale.edu> 1433 Date: Wed Dec 7 00:44:22 2016 -0500</jared.samet@aya.yale.edu>		* commit e3c94366de1322d5409194ca08043d6d0cc355f5
		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1434		Date: Wed Dec 7 00:44:22 2016 -0500
	1434	

1435											WIP
1436											
1437 1438 1439		 		 	 	 		 	 	* 	commit 18bb1821e80b81c4ec98f834e28f48c838216de8 Author: oracleofnj <jared.samet@aya.yale.edu> Date: Wed Dec 7 00:35:06 2016 -0500</jared.samet@aya.yale.edu>
1440 1441 1442											Still work in progress
1443 1444 1445		 						 		 * 	commit af69b92ab6338b061bf9d8b767b3e2e8b1ab50a4 Author: oracleofnj <jared.samet@aya.yale.edu> Date: Tue Dec 6 17:23:45 2016 -0500</jared.samet@aya.yale.edu>
1446 1447		 	 		 			į į	 		More updates
1448 1449 1450 1451	 /	 -	 -	 -	 -	 - -	-	 -	 -	 * / 	commit 85a4ccb27d496fbe4c377941e024d0088fae8d1b Author: oracleofnj <jared.samet@aya.yale.edu> Date: Tue Dec 6 16:12:31 2016 -0500</jared.samet@aya.yale.edu>
1452 1453		<u> </u> 	<u> </u> 	į Į		į Į	İ	į Į	į Į	 	LRM update part 1
1454 1455 * 1456	k \	 	 	 		 		 	 	 	commit 910bd01aacd801d145b0dde2f55a92827c691ae4 Merge: 52e7a8a 88480fb
1457 1458	· /	- 	-	- 	- 	- 	-	- 	- 	<i>)</i> 	Author: Jared Samet <jared.samet@aya.yale.edu> Date: Mon Dec 5 14:27:07 2016 -0500</jared.samet@aya.yale.edu>
1459 1460 1461		 		 	 			 	 	 	Merge pull request #21 from ExtendLang/fileio
1462 1463		 	 	İ	<u> </u>	į	į	į į	 	 	File IO Stdlib functions
1464 1465	:	* \	i \	İ \	i \	i \	i \	i \	i \	j \	commit 88480fbc58a8931e54098dc99ba74f96c9d780bb Merge: bfa906b 52e7a8a
1466 1467	/	/	/	/	/	/		/	/	/ 	Author: Nigel Schuster <neitsch@users.noreply.github.com> Date: Mon Dec 5 13:36:28 2016 -0500</neitsch@users.noreply.github.com>
1468 1469 1470		 					 	 	 	 	Merge branch 'master' into fileio
1471 * 1472	k	i \	i \	i \	i \	i \	i \	i \	i \	j \	commit 52e7a8a8aa3c5b38ca324a24fa4f0ce15059ab2f Merge: a5b9066 e4e5e26
1473 1474 1475	 /	- 	<i>/</i> 		/	/ 		/ 	/ 	/ 	Author: Jared Samet <jared.samet@aya.yale.edu> Date: Mon Dec 5 13:32:54 2016 -0500</jared.samet@aya.yale.edu>
1476 1477		 							 	 	Merge pull request #22 from ExtendLang/rm-micro
1478 1479										 	Removed microc
1480 1481 1482	 	* / 	 	 	 	 	 	 	 	A	ommit e4e5e264cf4369c696f0259c1825552aaee13bc2 uthor: Nigel Schuster <nigel.schusters@googlemail.com> ate: Mon Dec 5 09:25:17 2016 -0500</nigel.schusters@googlemail.com>
1483 1484 1485											Removed microc reference implementation
1486 1487 1488	:	*							1		mit bfa906b7661ba27c0f28bed535033a0f4b5eff06 hor: oracleofnj <jared.samet@aya.yale.edu> e: Mon Dec 5 13:28:03 2016 -0500</jared.samet@aya.yale.edu>
1489 1490											Fix off-by-one bug

1491		
1492	*	commit eb8dd71e3eb2f92d1a82dd19d03b1e090176bbef
1493		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1494		Date: Mon Dec 5 13:20:03 2016 -0500
1495		
1496		Address issues
1497		
1498	*	commit 270da2b340e5f3f2e8240495ff32c4e31e58456b
1499		\ Merge: b928e98 a5b9066
1500		// Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com></ishaankolluri@users.noreply.github.com>
1501		Date: Mon Dec 5 02:40:59 2016 -0500
$1502 \\ 1503$		Maura huanah (mashau) inta filaia
1503 1504		Merge branch 'master' into fileio
1504 1505		commit a5b9066a498c16d2c10664d59e42d71f731959ea
1505 1506	*	
1500 1507		\ Merge: 2ae2b83 35e9471 Author: Jared Samet < jared.samet@aya.yale.edu>
1507		Date: Sun Dec 4 14:00:30 2016 -0500
1500	1/1 1 1 1	Date. Sum Dec 4 14.00.50 2010 -0500
1509 1510		 Merge pull request #20 from ExtendLang/lhs—all—ids
1511		
1512		Lhs all ids
1513		
1514		commit 35e947123ee5d51957a79780b78e2cfc816ae0e3
1515		Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1516		Date: Sun Dec 4 13:38:44 2016 -0500
1517		
1518		Put back Id(s) as it was
1519		
1520	*	commit 641d4546969477380744cdec08904ca7fa061f73
1521	/ / / / / / /	/ Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1522		Date: Sun Dec 4 13:36:36 2016 -0500
1523		
1524		Always transform to ID on LHS, even for LitInts
1525		
1526	*	commit b928e9826f816e841ee2ba0a7a59d33a0e1daf0f
1527		Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>
1528		Date: Mon Dec 5 02:40:10 2016 -0500
1529		
1530		Remove bloat
1531		
1532	*	commit 894b511acf6e592bbe552b9cf639bc764e2a2342
1533		Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>
1534		Date: Mon Dec 5 02:32:49 2016 -0500
$1535 \\ 1536$		Added testages
1536 1537		Added testcase
1537 1538		commit 62b8e83bf20e352b8c6ce5523b519e12371b88f5
1538 1539	1 *	Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>
1539 1540		Date: Mon Dec 5 02:30:16 2016 -0500
1540 1541		2400. 11011 200 0 02.00.10 2010 0000
1542		Added fwrite implementation
1543		
1544	*	commit 77a23ae8b083fba49a27adb2a9fdb479258c2b1b
1545		Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>
1546		Date: Mon Dec 5 01:39:30 2016 -0500

1549			
1550	1547		
			Added read
Author: Tshaankolluri@gmail.com>	1549		
Date: Mon Dec 5 00:07:16 2016 -0500	1550	*	commit 46e9b5893df2c7a7ff36ab9642880517c7ccec3c
Make refactoring changes and new helpers	1551		Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>
Make refactoring changes and new helpers	1552		Date: Mon Dec 5 00:07:16 2016 -0500
1556	1553		
1556	1554		Make refactoring changes and new helpers
Author: oracleofn; <jared.samet@aya.yale.edu> 1558</jared.samet@aya.yale.edu>	1555		
Author: oracleofn; <jared.samet@aya.yale.edu> 1558</jared.samet@aya.yale.edu>	1556	*	commit f47f2ba753dad63a6232136b2f8be7ceb61c1b44
Date: Sun Dec 10:30:44 2016 -0500 1559			Author: oracleofni <iared.samet@ava.vale.edu></iared.samet@ava.vale.edu>
1559	1558		
1560	1559		
1561			Add error handling to close() and add a couple test cases
1562			
1563			r commit e95a95a32ec5aca30c1f49fb2aeb48c3b160b935
1564			
Add assertSingleNumber and get_number to eliminate more copy & paste			
Add assertSingleNumber and get_number to eliminate more copy & paste			Date: Sun Dec 4 10.07.01 2010 0300
paste			Add assort Single Number and got number to eliminate more gony (
1567	1000		Add assertsingleNumber and getinumber to eliminate more copy &
1568	1567	paste	
1569			
1570			
1571			
1572			Date: Sun Dec 4 09:47:03 2016 -0500
1573			
1574 *			Add new_number() to eliminate some copy and paste
1575			
1576		*	
1577			
Tentative drafts of fileio functions 1579			Date: Sun Dec 4 02:31:03 2016 -0500
1579			
1580			Tentative drafts of fileio functions
1581			
1582		*	
1583			
1584			Date: Sun Dec 4 00:15:20 2016 -0500
1585			
1586			add diagnostic prinfs
1587			
1588		*	
1589			
1590			Date: Sat Dec 3 23:46:01 2016 -0500
1591			
1592 *	1590		Cleanup
1593 Author: Ishaan <ishaankolluri@gmail.com> 1594 Date: Sat Dec 3 23:42:46 2016 -0500 1595 1596 Add file pointer array 1597 1598 * commit 88d05de75293d0073ef4823ffa7f92297b6ccd85 1599 / / / / / Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com></ishaankolluri@gmail.com>	1591		
1594 Date: Sat Dec 3 23:42:46 2016 -0500 1595		*	
1595	1593		Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>
1596 Add file pointer array 1597 1598 * commit 88d05de75293d0073ef4823ffa7f92297b6ccd85 1599 / / / / Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>			Date: Sat Dec 3 23:42:46 2016 -0500
1597	1595		
1598 * commit 88d05de75293d0073ef4823ffa7f92297b6ccd85 1599 / / / / / Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>	1596		Add file pointer array
1599 / / / / / Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>	1597		
	1598	*	commit 88d05de75293d0073ef4823ffa7f92297b6ccd85
·	1599	1/////////	Author: Ishaan <ishaankolluri@gmail.com></ishaankolluri@gmail.com>
1600 Date: Sat Dec 3 18:38:34 2016 -0500	1600		Date: Sat Dec 3 18:38:34 2016 -0500
1601	1601		

1602		- [ļ	- [ļ	Working on fopen
1603		ļ	ļ	ļ	ļ	ļ	
1604	*		,	Ĺ	<i>,</i>		commit 2ae2b839a88fad0ed90c1b4b6666e9c37c54a911
1605		\	\	\	\	\	\ Merge: 8a60995 7c78a23
1606		-	-	-	-	-	/ Author: Jared Samet <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1607	/	ļ	Ţ	ļ	ļ	ļ	Date: Sat Dec 3 14:06:40 2016 -0500
1608			-	ļ	-	ļ	
1609			-	-	-		Merge pull request #15 from ExtendLang/stdlib-fun
$1610 \\ 1611$							Ct 41:1- 6
1611 1612							Stdlib fun
1612 1613			i			i	commit 7c78a2359f174dd9d3d68a02a23c587186b3e20d
1614	"		i	i	i	i	Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1615	ii		l	i	i	i	Date: Sat Dec 3 14:02:51 2016 -0500
1616	ii	i	i	i	i	i	20001 200 0 11102101 2010 0000
1617	ii	i	i	i	i	i	Move test_fabs out of regression test suite
1618	ii	i	i	i	i	i	
1619	*		i			i	commit 0a8055b8851a60af3e6f23d19ebd24f126f1bdf9
1620	į I	i	i	i		i	Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1621	i i	j	i	i	i	j	Date: Sat Dec 3 13:48:19 2016 -0500
1622	i i	ĺ	Ì	Ì	ĺ	ĺ	
1623							make test grep REGRESSION
1624							
1625	*						commit a24742bca26352fb2f9a255ca1abf4036b975a9d
1626		\	\	\	\	\	\ Merge: 5243c5a 8a60995
1627		/	/	/	/	/	/ Author: Kevin <kevinye1113@gmail.com></kevinye1113@gmail.com>
1628	/						Date: Fri Dec 2 22:50:43 2016 -0500
1629			-	ļ		ļ	
1630			-	-	-	ļ	Merged stdlib with master
1631			-			ļ	0
1632	*	,	,	,	,	,	commit 8a60995f5d9e25c950066478d4b6f451f0c17a16
$1633 \\ 1634$	\	\	\	\	\	\	Merge: 96a3028 f0d33e2
1634 1635							Author: Jared Samet <jared.samet@aya.yale.edu> Date: Thu Dec 1 23:38:54 2016 -0500</jared.samet@aya.yale.edu>
1636						i	Date: Thu Dec 1 23.30.34 2010 -0300
1637			l		i	i	Merge pull request #18 from ExtendLang/parser—error
1638			i			i	
1639	ii		l	i	i	i	Parser error
1640	ii	i	i	i	i	i	
1641	*		i	i		i	commit f0d33e292b39aab8e6d615cb28d6a011697a4115
1642	i I		i			i	Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1643	į į		i	i	i	i	Date: Thu Dec 1 23:18:39 2016 -0500
1644	İ	ĺ	İ	İ	İ	j	
1645							Move error handling
1646							
1647	*						commit 3b24c3a9570d8c03150bf405fcb3c15a407083fd
1648							Author: oracleofnj <jared.samet@aya.yale.edu></jared.samet@aya.yale.edu>
1649				ļ			Date: Thu Dec 1 23:16:53 2016 -0500
1650							
1651							Adjust test script
1652							
1653	*	\	\	\	\	\ \	commit 60a732fe464f53cb119d5a5d0dca2e10202baf27
$1654 \\ 1655$		\	\	\	\	\	\ Merge: 5dec6a2 96a3028
1656		/ 	/ 	/ 	/ 	/ I	// Author: oracleofnj <jared.samet@aya.yale.edu> Date: Thu Dec 1 22:55:28 2016 -0500</jared.samet@aya.yale.edu>
1657	/						
1001				1			

```
1658
                           Merge branch 'master' into parser-error
1659
1660
                       commit 96a30280911892931866a653d3271e1c8a8eb085
1661
                       Merge: 5bdd52c 7912d5a
1662
                       Author: Nigel Schuster <Neitsch@users.noreply.github.com>
1663
                       Date:
                               Thu Dec 1 22:19:21 2016 -0500
1664
1665
                           Merge pull request #16 from ExtendLang/fail-silent
1666
1667
                           Reduce testscript output
1668
1669
                        commit 7912d5ad15e53af8b7fd5d4fa50086489683abe5
1670
                       Merge: 72360f4 5bdd52c
1671
                       Author: Nigel Schuster <Neitsch@users.noreply.github.com>
1672
                              Thu Dec 1 21:26:03 2016 -0500
                       Date:
1673
          _ | _ | _ | _ | /
1674
                           Merge branch 'master' into fail-silent
1675
1676
             | | commit 72360f4eb9c1dcf6ef01987c5a3764bb3ffda0d8
1677
         |_|_|/ Author: Nigel Schuster < nigel.schusters@googlemail.com>
1678
                   Date: Thu Dec 1 17:09:08 2016 -0500
       1/1 1
1679
1680
                       Minified error output for outputs that have not passed yet
1681
1682
                 commit 5dec6a2973176e9aa664adec96fae44e28b8a30b
1683
                 Author: oracleofnj <jared.samet@aya.yale.edu>
1684
                 Date:
                         Thu Dec 1 22:55:05 2016 -0500
1685
1686
                     Thank you Nigel!!!
1687
1688
           | | commit 6c3696ce28a857d6cbdca227677d454b0dbd280b
1689
       // / / Author: oracleofnj <jared.samet@aya.yale.edu>
1690
                 Date:
                        Thu Dec 1 21:59:40 2016 -0500
1691
1692
                     Figure out why test is failing
1693
1694
                 commit 5bdd52cc31c181789388acdafba2eb69709658f0
          \\\ Merge: 8c7b6ce 8893255
1695
1696
               | Author: Jared Samet < jared.samet@aya.yale.edu>
1697
                 Date:
                        Thu Dec 1 21:13:45 2016 -0500
1698
1699
                     Merge pull request #17 from ExtendLang/lexbuf-pos
1700
1701
                     Lexbuf pos
1702
1703
               | commit 889325556f4f0f43d4a6048fb15ea0b59e02b0fc
1704
              | Author: oracleofnj <jared.samet@aya.yale.edu>
1705
               Date: Thu Dec 1 20:35:04 2016 -0500
1706
1707
                     Add a couple test cases
1708
1709
               commit 2868653773273d33ce8d4a5ddb12c02086d7e037
1710
                 Author: oracleofnj <jared.samet@aya.yale.edu>
1711
                         Thu Dec 1 20:23:01 2016 -0500
                 Date:
1712
1713
                   Use lexbuf.lex_curr_p to calculate position
```

```
1714
                 commit 8c7b6cea2bb4fd797d7dda9e2cdcbb819890f23c
1715
1716
                 Merge: 7abb394 2885ac7
1717
                 Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
1718
                 Date: Thu Dec 1 18:59:49 2016 -0500
1719
1720
                     Merge pull request #11 from ExtendLang/parse_error
1721
1722
                     Add line numbers to Syntax Errors
1723
1724
             commit 2885ac7e0d21ca4132922e5e5215155e6bf4c137
1725
             Author: Ishaan <ishaankolluri@gmail.com>
1726
                      Thu Dec 1 18:56:15 2016 -0500
              Date:
1727
1728
                   Added test case for string
1729
             | commit e9fb1c2dca7114154c79f31f534da8e5cc1d0f7f
1730
1731
             | Author: Ishaan <ishaankolluri@gmail.com>
1732
             Date: Thu Dec 1 15:03:29 2016 -0500
1733
1734
                   Added increment to string buffer and tests
1735
             commit eb7c1e843628a9714a50a847fca26ce8e4be75c4
1736
1737
             | Author: Ishaan <ishaankolluri@gmail.com>
             Date: Thu Dec 1 03:50:53 2016 -0500
1738
1739
1740
                   Add partial character indexing
1741
1742
             commit df09aeaa3fb16283f652ab549ab2e246c4d79464
1743
             | Author: Ishaan <ishaankolluri@gmail.com>
1744
             Date: Thu Dec 1 00:41:07 2016 -0500
1745
1746
                   Add expected parse testcase intermediate
1747
             commit 712a71006cf73e566676393cb09cca2cd84e311e
1748
1749
            | Author: Ishaan <ishaankolluri@gmail.com>
1750
             Date: Wed Nov 30 16:42:32 2016 -0500
1751
1752
                   Added tentative scanner-level line number
1753
     | * | | commit bf4ee6c3bc017d4d2a7140526717edfc6c70a896
1754
1755
     |/ / / Author: Ishaan <ishaankolluri@gmail.com>
1756
     | | Date: Wed Nov 30 15:53:43 2016 -0500
1757
1758
                   Added SyntaxError Exception at scan level
1759
1760 * | |
              commit 7abb39400db2ebc10312943f011b363532dbd872
     |\ \ \ Merge: 13cd317 e0b7fdb
1761
1762
     | | _ | _ | Author: Nigel Schuster < Neitsch@users.noreply.github.com>
1763
     1/1 1 1
               Date: Thu Dec 1 14:07:58 2016 -0500
1764
1765
                   Merge pull request #14 from ExtendLang/sinner
1766
1767
                   Sinner
1768
     | * | commit e0b7fdbea24db1a5d6606dfc19848d8755cb931c
1769
```

```
Author: Nigel Schuster <nigel.schusters@googlemail.com>
1770
                   Thu Dec 1 14:05:38 2016 -0500
1771
             Date:
1772
1773
                 Rename empty to new_val
1774
1775
         | commit 6ea8cff367f1465f7903fc249fdd65a94e5fed27
1776
         | Author: Nigel Schuster < nigel.schusters@googlemail.com>
1777
           Date: Thu Dec 1 10:10:26 2016 -0500
1778
1779
                 Using define instead of magic numbers
1780
               commit cd7d261cc0f4faf9f3fb3178228fce7e81ac551c
1781
          \ \ Merge: 3986f38 13cd317
1782
1783
         // Author: Nigel Schuster < nigel.schusters@googlemail.com>
1784
               Date: Thu Dec 1 10:07:10 2016 -0500
     1/1 1 1
1785
                   Merge branch 'master' into sinner
1786
1787
1788 * | | |
              commit 13cd31794ee3313e0b87a106100fe4e752969a45
1789
    |\ \ \ Merge: effc20b 4eeed07
           | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
1790
1791
             Date: Thu Dec 1 10:06:25 2016 -0500
1792
1793
                   Merge pull request #13 from ExtendLang/value_p
1794
1795
                   Moved all function signatures to value_p return value
1796
1797
            commit 4eeed0719d5cee5cae27e2debf1a26572a2a96ad
1798
             | Author: Ishaan <ishaankolluri@gmail.com>
1799
             | Date: Thu Dec 1 01:02:56 2016 -0500
1800
1801
                   Change print return type to empty
1802
1803
            commit 5243c5a654a69cc7b5239e0236c3318b132fec8e
1804
             | Author: Kevin <kevinye1113@gmail.com>
1805
             Date: Fri Dec 2 18:16:36 2016 -0500
1806
1807
                   Removed magic numbers and add fabs test
1808
1809
             commit fa42f2718eada7ac73302690aac7a4982e20da4f
1810
             | Author: Kevin <kevinye1113@gmail.com>
1811
             Date: Thu Dec 1 00:41:47 2016 -0500
1812
1813
                   Fixed acos function
1814
1815
            | commit 53d34adc07f06d185d57de7d3ed3901706eeb4f3
1816
             | Author: Nigel Schuster < nigel.schusters@googlemail.com>
1817
           | Date: Thu Dec 1 00:29:32 2016 -0500
1818
1819
                   Moved double values type to numeric
1820
                commit f769c61b5da538e4934721de651d2772359fa2c5
1821
           *
1822
                Merge: 7f0bc86 3986f38
1823
                 Author: Nigel Schuster <nigel.schusters@googlemail.com>
1824
                 Date: Thu Dec 1 00:18:07 2016 -0500
1825
```

```
1826
                    Merge branch 'sinner' into stdlib-fun
1827
1828
                 commit 3986f38a3fe7b5cbe849af80e5c00fc7881dc13e
1829
           \ Merge: 4604545 5bd87f9
1830
           // Author: Nigel Schuster <nigel.schusters@googlemail.com>
1831
                 Date: Thu Dec 1 00:17:21 2016 -0500
1832
1833
                     Merge branch 'value_p' into sinner
1834
             | commit 5bd87f9233c2b4be9f60cecd0bbab3792df5d8b7
1835
1836
             Author: Nigel Schuster <nigel.schusters@googlemail.com>
             Date: Wed Nov 30 23:37:58 2016 -0500
1837
1838
1839
                   Explicitly declaring to link math library
1840
1841
            | commit 4604545c905e2a9a77524cbaeb54a93a9adfb249
1842
            Author: Nigel Schuster < nigel.schusters@googlemail.com>
1843
            Date: Thu Dec 1 00:12:08 2016 -0500
1844
1845
                  Consistently using floats
1846
         * | commit 38b9824041ecc7c1b9985cf44436a31f5daa90f3
1847
         |\ \ \ Merge: e085977 3303575
1848
           | | Author: Nigel Schuster < nigel.schusters@googlemail.com>
1849
               Date: Wed Nov 30 23:46:14 2016 -0500
1850
1851
1852
                     Merge branch 'value_p' into sinner
1853
         | * | | commit 330357567faf2c6fc8b1c3e769d7aa3e047629de
1854
1855
        |/ / Author: Nigel Schuster <nigel.schusters@googlemail.com>
1856
       |/| | Date: Wed Nov 30 23:37:58 2016 -0500
1857
1858
                     Explicitly declaring to link math library
1859
                 commit 31a74ecd91861165dfdcfed780a8d59ba99042e7
1860
1861
       |\ \ \ Merge: 206ee5a effc20b
1862
         /// Author: Nigel Schuster <nigel.schusters@googlemail.com>
                 Date: Wed Nov 30 23:35:34 2016 -0500
1863
     1/1
1864
1865
                     Merge branch 'master' into value_p
1866
1867 * | | |
                commit effc20bd8f99f841b0ae5a0af19042599db89345
    |\ \ \ \ Merge: 3a8efbc 3b6d7b7
1868
1869
     | | | | - | - | Author: Ishaan Kolluri < ishaankolluri@users.noreply.github.com>
1870
    |/| | | |
                 Date: Wed Nov 30 18:45:52 2016 -0500
1871
1872
                     Merge pull request #12 from ExtendLang/easy-compile
1873
1874
                    Added script to compile and link
1875
     | * | | commit 3b6d7b740336c5fefd9a60be7f77351f04ab46de
1876
     |/ / / Author: Nigel Schuster <nigel.schusters@googlemail.com>
1877
1878
               Date: Wed Nov 30 17:51:19 2016 -0500
1879
1880
                   Added script to compile and link
1881
```

```
* commit 7f0bc8650ald6d89ac6ddd1d4862c245e7dfbc7e
1882
1883
           | Author: Kevin <kevinye1113@gmail.com>
1884
          Date: Wed Nov 30 23:04:34 2016 -0500
1885
1886
                Finished remainder of stdlib
1887
1888
         * commit cd160df84fff7fceb7340b5fad27fe9360c436cd
1889
         // Author: Kevin <kevinye1113@gmail.com>
1890
            Date: Wed Nov 30 22:50:18 2016 -0500
1891
1892
                Added more c functions to stdlib
1893
        * commit e085977d3edd3785dc682c42161601b6b975cc41
1894
1895
     Date: Wed Nov 30 19:59:57 2016 -0500
1896
1897
1898
              Made sin function work
1899
1900
    * commit 206ee5ab0f46bc5411cc3834f8107134c6e6e80b
1901
    // Author: Nigel Schuster <nigel.schusters@googlemail.com>
1902
        Date: Wed Nov 30 19:07:28 2016 -0500
1903
1904
            Moved all function signatures to value_p return value
1905
1906
        commit 3a8efbc6575cb2d73b305c087b6f2294cf1c3511
     |\ Merge: 5b3edb0 7a2af49
1907
1908
       Author: Nigel Schuster <Neitsch@users.noreply.github.com>
        Date: Mon Nov 28 23:05:28 2016 -0500
1909
1910
1911
            Merge pull request #9 from ExtendLang/func-calls
1912
1913
            Function calls work now
1914
     * commit 7a2af4937e6abf0621cfabad4ee463dfa7b64e20
1915
1916
       Author: Nigel Schuster <nigel.schusters@googlemail.com>
1917
       Date: Mon Nov 28 20:33:53 2016 -0500
1918
1919
            Removed another ocaml 4.3 dep
1920
1921
     * commit 468e79f88bcecd2d60c822799c353bc00ee11099
     | Author: Nigel Schuster <nigel.schusters@googlemail.com>
1922
1923
     | Date: Mon Nov 28 19:50:53 2016 -0500
1924
1925
            Added ocaml 4.3 as dep for travis (hopefully this works)
1926
1927
     * commit a40876103c19a444466a07019854cf508ccfe276
     | Author: Nigel Schuster < nigel.schusters@googlemail.com>
1928
1929
     | Date: Mon Nov 28 19:35:49 2016 -0500
1930
1931
            Fixed String.equal
1932
1933
      * commit 90c3caf1dc0ebf18d2e8709df39be6333266bc56
1934
        Author: Nigel Schuster <nigel.schusters@googlemail.com>
1935
        Date: Sun Nov 27 22:52:14 2016 -0500
1936
1937
        Fixed interpreter for now
```

```
1938
1939
      * commit a18da787c64c95ed8cc31f8f188bb1ef9507453b
1940
      Author: Nigel Schuster <nigel.schusters@googlemail.com>
    | Date: Sun Nov 27 22:42:27 2016 -0500
1941
1942
1943
            Added accidentally created file
1944
    * commit 5647312ef3939b7417783c3ff7620a90d3b002fe
1945
1946
    | Author: Nigel Schuster < nigel.schusters@googlemail.com>
               Sun Nov 27 22:41:22 2016 -0500
1947
       Date:
1948
1949
           Made extern function calls work
1950
1951
          commit 872aa8c4c287ddb35dd5d529df2122e1b38a0fb9
     | |\ Merge: 26ef1cc 877336f
1952
1953
      | Author: Nigel Schuster < nigel.schusters@googlemail.com>
     1954
1955
1956
     Merge branch 'func-calls' of https://github.com/ExtendLang/Extend into func-
        calls
      1957
            commit 877336f09f10848092540a3349bb1a42c9a6ebd9
1958
1959
    | | |\ Merge: 374273f 5b3edb0
     | | | / Author: Nigel Schuster < Neitsch@users.noreply.github.com>
1960
     |/| |
            Date: Sun Nov 27 12:15:11 2016 -0500
1961
1962
1963
                Merge branch 'master' into func-calls
1964
1965 * | |
            commit 5b3edb0d0b6e8764cadd9290eab3c9dad7fb782d
1966
    |\ \ Merge: 442ae91 952aab8
1967
          Author: Nigel Schuster <Neitsch@users.noreply.github.com>
1968
          Date: Sun Nov 27 12:14:43 2016 -0500
1969
1970
               Merge pull request #8 from ExtendLang/stdlib-template
1971
1972
                Stdlib template
1973
1974
        * | commit 26ef1cc506931d6771cf950fdae016f9f3874bbe
1975
        // Author: Nigel Schuster <nigel.schusters@googlemail.com>
1976
            Date: Sun Nov 27 13:51:06 2016 -0500
1977
1978
               Merging list of functions
1979
     * commit 374273f2ceb3b69ee489c39c0f3767ab4748f246
1980
1981
    1982
         Date: Sun Nov 27 12:13:52 2016 -0500
1983
1984
              Function calls work now
1985
1986
          commit 952aab83190eb5b8e3be609fe44fa0fc0cbe8f2b
       |\ Merge: ac6268f 554fbb2
1987
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
1988
1989
          Date: Sun Nov 27 09:54:12 2016 -0500
1990
1991
              Merge extern
1992
```

```
| | * commit 554fbb28bf7e995117790bd17770af810b1caa37
1993
1994
         | Author: oracleofnj <jared.samet@aya.yale.edu>
1995
         Date: Wed Nov 23 22:28:29 2016 -0500
1996
1997
               Better error message for WrongNumberArgs
1998
1999
        * commit f09e40e405befe48f3b2310c6f4a0aecd48dbcf7
         Author: oracleofni <jared.samet@ava.vale.edu>
       | Date: Wed Nov 23 12:47:39 2016 -0500
2001
2002
2003
              Make sequence work
2004
2005
         * commit 053980bc62d59316a73fe42efaf1706d8f8d813c
2006
         | Author: oracleofnj <jared.samet@aya.yale.edu>
2007
         Date: Tue Nov 22 16:02:27 2016 -0500
2008
2009
              Actually commit all the extern stuff
2010
2011
         commit ac6268fd89de976aa5d355e09215f5bab22d128f
2012
     | | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2013
         Date: Sat Nov 26 23:06:00 2016 -0500
2014
2015
               Boxing ints, added unop sizeof, actually returning subrange not dummy object
2016
2017
         commit ca07be3d9e79a9398b1da5fbc30a22976fbe2246
2018
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
2019
          Date: Sat Nov 26 21:27:19 2016 -0500
2020
2021
               Unboxing hello world to and from subrange
2022
     | * | commit aef6c1964b6e8ca2b0d05d3a5e1efb8a5b0f8159
2023
2024
       | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2025
         Date: Sat Nov 26 16:55:48 2016 -0500
2026
2027
               Made Hello World somewhat workable
2028
     2029
         | commit cfb637efdc1747331c83e6ccfe9f417fb8fc3c1d
2030
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
2031
          Date: Fri Nov 25 18:27:37 2016 -0500
2032
2033
              Fixed faulty setup on call
2034
     | * | commit ebf926a2c3cd85309b6dfac4febc166d381c8ca2
2035
2036
         | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2037
     | | Date: Fri Nov 25 17:48:57 2016 -0500
2038
2039
              Added template in C
2040
     2041
     * commit 0e0fa23bc1b0fb0bc039fa0d1cbcb5f617f0cc9c
2042
       // Author: Nigel Schuster <nigel.schusters@googlemail.com>
2043
          Date: Tue Nov 22 14:36:54 2016 -0500
2044
2045
              Added extern in Ast
2046
2047
     * commit aac63be5941852ff37036e5a69d1347ba7744a82
2048
     | | Author: oracleofnj <jared.samet@aya.yale.edu>
```

```
| Date: Mon Nov 21 23:52:25 2016 -0500
2049
2050
2051
             Better duplicate definition checking
2052
2053
     * commit 08e2d073c08f1b2067f9e8a130595114815091ae
2054
     | Author: oracleofnj <jared.samet@aya.yale.edu>
2055
       Date: Mon Nov 21 23:29:28 2016 -0500
2056
2057
             Check assertions before evaluating fn return expression
2058
2059
     * commit 69fa332091dfb61848a9c7b47092c31244e74153
2060
       | Author: oracleofnj <jared.samet@aya.yale.edu>
         Date: Mon Nov 21 18:01:23 2016 -0500
2061
2062
2063
            Add size assertions
2064
     * commit 22541c427b7883b6fc89841b077ec8c1c9d41c80
2065
2066
     | Author: oracleofnj <jared.samet@aya.yale.edu>
2067
     Date: Mon Nov 21 12:48:34 2016 -0500
2068
2069
             Fix bug in Call()
2070
2071
     * commit 9a1d24bb89721d76c3987f50d3095b16c182f38e
2072
       Author: oracleofnj <jared.samet@aya.yale.edu>
       Date: Mon Nov 21 12:39:41 2016 -0500
2073
2074
2075
             Working on crazy bug
2076
2077
      * commit a485ceef7e987cdef7cd4321d01849bc73342e78
2078
     | | Author: oracleofnj <jared.samet@aya.yale.edu>
2079
     | Date: Sun Nov 20 22:13:46 2016 -0500
2080
2081
             Add test case for foo([m, n] arg)
2082
     * commit 10afe9a2fdb645fbb146c724d6281d34d4ba3f8a
2083
2084
       | Author: oracleofnj <jared.samet@aya.yale.edu>
                Sun Nov 20 22:07:17 2016 -0500
2085
       Date:
2086
2087
             Expand function signature
2088
     * commit 325e9ba5b275d2d312953e02eb1abca561a31a74
2089
2090
     | Author: oracleofnj <jared.samet@aya.yale.edu>
2091
     | Date: Sun Nov 20 18:53:52 2016 -0500
2092
2093
            Well, this is awkward
2094
2095
     * commit 0a76dc987d319e86ab1e342c5d96bbc624c4bbdb
2096
     | Author: oracleofnj <jared.samet@aya.yale.edu>
     | Date: Sun Nov 20 18:41:12 2016 -0500
2097
2098
2099
            Add check of return value
2100
2101
      * commit 488e34ea0aeebc91443a355a94e9586351d57049
2102
     | | Author: oracleofnj <jared.samet@aya.yale.edu>
2103
     | Date: Sun Nov 20 18:31:39 2016 -0500
2104
```

```
2105
    Add sample #1
2106
2107
     * commit 93eebc5c3442929d4d2f2a1f99c199538009d707
2108
     | Author: oracleofnj <jared.samet@aya.yale.edu>
2109
    | Date: Sun Nov 20 18:27:23 2016 -0500
2110
2111
             Add semantic checking to make sure functions and variables on RHS exist
2112
    * commit 881f164a15251a781692045ce602dc5153addbb7
2113
2114
    // Author: oracleofnj <jared.samet@aya.yale.edu>
                Sun Nov 20 17:22:40 2016 -0500
2115
        Date:
2116
2117
             Check RHS slice to ensure end > start, otherwise evaluate to empty
2118
        commit 442ae9121c99adeb30215e524022e1dd046e0e66
2119 *
2120 |\ Merge: 367bc2b f7f701d
2121
     | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2122
     | Date: Sun Nov 20 11:42:54 2016 -0500
2123
2124
            Merge pull request #73 from Neitsch/interpreter-global
2125
2126
             Added use of global variables to interpreter
2127
2128
    * commit f7f701d56f6e553742adcf396bffd7d0d2021cd2
2129
     / Author: Nigel Schuster <nigel.schusters@googlemail.com>
2130
         Date: Sun Nov 20 11:30:06 2016 -0500
2131
2132
             Added use of global variables to interpreter, fixed specs for logical or and
        and testcases with empty
2133
2134 *
        commit 367bc2b3b07ed593eba6475aa42d3d66bada93c9
2135 |\ Merge: e956238 bdca834
2136
       Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2137
                Sun Nov 20 00:33:17 2016 -0500
       Date:
2138
2139
            Merge pull request #72 from Neitsch/codegen-part-app-fix
2140
2141
            Fixed partial function application warning
2142
2143
          commit bdca8349c823e69a9065ca2f7efd24d8ba3d3482
     | |\ Merge: 9b742d1 e956238
2144
2145
          Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2146
     |/|
          Date: Sun Nov 20 00:31:04 2016 -0500
2147
2148
              Merge branch 'master' into codegen-part-app-fix
2149
          commit e956238e31b3811552c0c4fb1ab6ea10f00107e1
2150 * |
    |\ \ Merge: f87cb94 32f2989
2152
       | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2153
         Date: Sun Nov 20 00:28:49 2016 -0500
2154
2155
              Merge pull request #71 from Neitsch/tc-fixes
2156
2157
              Tc fixes
2158
2159
     | * | commit 32f2989ad2a169fe36509509b8bf8aeb61e7d8f4
```

```
| | \ Merge: 05f317a f87cb94
2160
2161
             Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2162
             Date: Sun Nov 20 00:20:51 2016 -0500
     | / | |
2163
2164
                Merge branch 'master' into tc-fixes
2165
2166 * | |
             commit f87cb946eff0389be01d20ba5e62ff9882b6b94f
     |\ \ Merge: 6d73717 842ee5a
2168
       | | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2169
             Date: Sun Nov 20 00:20:35 2016 -0500
2170
2171
                Merge pull request #69 from Neitsch/regression—tests
2172
2173
                Regression tests
2174
2175
              commit 842ee5aa0e12f721fc985689fa2bf1bff66a167b
     * |
2176
     | |\ \ Merge: 214ab9d 6d73717
2177
     | |/ / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2178
     1/1 | |
             Date: Sun Nov 20 00:18:56 2016 -0500
2179
                   Merge branch 'master' into regression—tests
2180
2181
2182 * | |
              commit 6d73717a9152d479eceeb1778f90baaaca6a9083
     |\ \ \ Merge: 36f72al 04e5c4a
2183
             | Author: Jared Samet < jared.samet@aya.yale.edu>
2184
2185
             Date: Sat Nov 19 23:55:35 2016 -0500
2186
2187
                  Merge pull request #66 from Neitsch/fix-test-cases
2188
2189
                  Fix test cases
2190
2191
                commit 214ab9d5df7fa62828bbb0d1284e761365885a23
2192
         |\ \ Merge: fb31505 5e39ba7
2193
             | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2194
               Date: Sat Nov 19 22:10:33 2016 -0500
2195
2196
                     Merge
2197
                   commit 5e39ba7b6f490b9f810c37e8157056ab31151b4c
2198
         | |\ \ \ Merge: 25263fe 36f72a1
2199
     | |-|-|/ / / Author: Nigel Schuster <nigel.schusters@googlemail.com>
2200
                   Date: Sat Nov 19 21:55:03 2016 -0500
2201
2202
2203
                      Merge
2204
2205
             | commit 25263fe599515a7bc97a37f874d5995371f77b2c
2206
             | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2207
             | Date: Sat Nov 19 21:50:21 2016 -0500
2208
2209
                     Removed travis from build, removed super verbose output
2210
2211
               commit 0554ad9c6ceb85f2f30929b4b63f1476b9e52780
2212
                Author: Nigel Schuster <nigel.schusters@googlemail.com>
2213
                Date: Sat Nov 19 21:42:28 2016 -0500
2214
2215
                 Using precise lli version
```

```
2216
2217
                commit 2825ada0022a5dflaeac7d1871904a16f676cb9c
2218
               Author: Nigel Schuster <nigel.schusters@googlemail.com>
2219
               Date: Fri Nov 18 12:51:33 2016 -0500
2220
2221
                    Added branch to build
2222
2223
               commit aafabb2f0b48af7e1961740edccd63c676fb2595
2224
             | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2225
               Date: Fri Nov 18 12:50:56 2016 -0500
2226
2227
                     Verbose output for travis debug
2228
2229
         * | | commit fb315051683e9323f494ec9b4cd42a87103f7ea9
2230
     | |/ / / Author: Nigel Schuster <nigel.schusters@googlemail.com>
2231
                Date: Sat Nov 19 22:08:42 2016 -0500
2232
2233
                     Passing testcases are in separate directory. Output of stats
2234
2235
            | commit 05f317a8560e8cc6f59af840b3e5d97581fec1be
2236
            Author: Nigel Schuster < nigel.schusters@googlemail.com>
2237
           | Date: Sat Nov 19 22:37:36 2016 -0500
2238
2239
                  Fixed output on TCs
2240
2241
            commit aa1d974fec852f9d6c2c524eb4e0e585c000d2a8
             | Author: Nigel Schuster <nigel.schusters@googlemail.com>
2242
2243
             Date: Sat Nov 19 22:33:40 2016 -0500
2244
2245
                  Fixed expected value for ternary
2246
2247
           * | commit ab7653af94b6eb3c441ab2aa4cb1a0238cb0103f
2248
             | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2249
             Date: Sat Nov 19 22:32:27 2016 -0500
2250
2251
                  Fixed import testcases
2252
2253
             | commit 848066cd1ea2e7e580ec4710181b5e36273ea9a8
2254
             Author: Nigel Schuster <nigel.schusters@googlemail.com>
2255
             Date:
                      Sat Nov 19 22:24:55 2016 -0500
2256
2257
                  Moved testcase asset to asset folder
2258
           * | commit 53c920628b8283b501dd70df16b76c1b668b5a66
2259
2260
         | | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2261
         | | Date: Sat Nov 19 22:21:48 2016 -0500
2262
2263
                   Corrected use of global variable in test_globals
2264
2265
        | * | commit 5fe74a8c9883277c3ef1df944623a54f6782030c
2266
        |/ / Author: Nigel Schuster <nigel.schusters@googlemail.com>
       // | Date:
2267
                      Sat Nov 19 22:19:47 2016 -0500
2268
2269
                   Fixed expected output for test_access_column_cells
2270
     | * | commit 04e5c4a7bc3ea9d79a2cbdffe03011df96b5af6f
2271
```

```
2272
            Author: oracleofnj <jared.samet@aya.yale.edu>
2273
            Date: Sat Nov 19 18:30:32 2016 -0500
2274
2275
                Add more operators to interpreter
2276
2277
         commit e4a190c32f50362cae49e27679e8860a1b95f49b
2278
         | Author: oracleofnj <jared.samet@aya.yale.edu>
2279
          Date: Sat Nov 19 17:14:04 2016 -0500
2280
2281
                Add argument to main and remove _expected from filenames
2282
2283
              commit 7cd2b3ae0741a05e19d1f0dc39afb4f3d6be3bff
       |\ \ \ Merge: d1fddfd 36f72a1
2284
2285
     | |/ / Author: oracleofnj <jared.samet@aya.yale.edu>
2286
              Date: Sat Nov 19 16:53:12 2016 -0500
     1/1 1 1
2287
2288
                  Merge branch 'master' into fix-test-cases
2289
2290
             commit d1fddfd7bf6ba8190ff38aaed5a22cd3b3f85ef4
     | * | |
2291
     | |\ \ Merge: a9320f3 7b6b79e
2292
       2293
          | Date: Sat Nov 19 16:52:48 2016 -0500
2294
2295
     Merge branch 'fix-test-cases' of https://github.com/Neitsch/plt into fix
        -test-cases
2296
2297
                commit 7b6b79ed80d9356bfea1a038757c746788c41fee
2298
         |\ \ Merge: 24a3625 de262b4
2299
            | Author: Jared Samet < jared.samet@aya.yale.edu>
2300
             | Date: Sat Nov 19 14:31:39 2016 -0500
2301
2302
                    Merge branch 'master' into fix-test-cases
2303
2304
                  commit a9320f3f249e2b2a342add2c750ee9beb4bec2de
2305
       |\ \ \ \ Merge: 24a3625 de262b4
2306
       | |/ / / Author: oracleofnj <jared.samet@aya.yale.edu>
       1/1 / / /
2307
                  Date: Sat Nov 19 14:29:51 2016 -0500
       1 / / /
2308
2309
                      Merge branch 'master' into fix-test-cases
2310
2311
            | commit 24a3625ee0a2ebe90f49563eb355549fe6938905
2312
          | | Author: oracleofnj <jared.samet@aya.yale.edu>
            Date: Sat Nov 19 14:27:48 2016 -0500
2313
2314
2315
                  Add switch tests
2316
2317
             commit 75e3f71b55e8f57c4092924b1294a6c717bd223e
2318
          | Author: oracleofnj <jared.samet@aya.yale.edu>
2319
          | Date: Fri Nov 18 20:39:23 2016 -0500
2320
2321
                  Fix parsing errors in test cases
2322
2323
         * commit 9b742d16a14b81215a51612eb237875017320a97
2324
     | | _ | _ | / Author: Nigel Schuster < nigel.schusters@googlemail.com>
2325
              Date: Sun Nov 20 00:24:39 2016 -0500
     1/1 1
2326
```

```
2327
              Fixed partial function application warning
2328
2329
               commit 36f72a190820385610b63dd1c8e9e94a0fc564a9
    * | |
2330
        \\\ Merge: de262b4 c46c87b
2331
     | | _ | / Author: Jared Samet < jared.samet@aya.yale.edu>
2332
     1/1
             Date: Sat Nov 19 16:49:34 2016 -0500
2333
2334
                   Merge pull request #67 from Neitsch/test_cases
2335
2336
                   Test cases
2337
2338
               commit c46c87bef9282aae0e4d754d74e77cd1c5399a13
2339
       |\ \ Merge: 642ce76 de262b4
2340
              Author: Jared Samet < jared.samet@aya.yale.edu>
2341
                      Sat Nov 19 16:47:26 2016 -0500
     1/1 1 1
               Date:
2342
2343
                   Merge branch 'master' into test_cases
2344
2345 * | |
              commit de262b4bbe84505ef0dc460afe5fa4fea8da6ba3
2346
    |\ \ \ Merge: 7146dce 4e38757
     | | _ | / Author: Jared Samet < jared.samet@aya.yale.edu>
2347
             Date: Sat Nov 19 14:24:39 2016 -0500
2348
     1/1 1 1
2349
2350
                   Merge pull request #60 from Neitsch/box-args
2351
2352
                   Box args
2353
2354
               commit 4e3875716c30388817c66fad2df038141b89ca51
      *
2355
          \ \ Merge: faecfal 7146dce
2356
           / Author: Jared Samet <jared.samet@aya.yale.edu>
2357
              Date: Fri Nov 18 16:00:10 2016 -0500
     |/| |
2358
2359
                   Merge branch 'master' into box-args
2360
              commit 7146dce9e2cc8dc459dc51e0dbfeb7dd426551a0
2361
2362
        \ \ Merge: 124d61e 09cb42f
2363
       |_|_|/ Author: Jared Samet < jared.samet@aya.yale.edu>
2364
               Date: Fri Nov 18 15:59:54 2016 -0500
2365
2366
                   Merge pull request #64 from Neitsch/reorg-test
2367
2368
                   Reorg test
2369
2370
             commit 09cb42f8e184a376bc7a00f69ed57d1d60a30737
2371
             Author: oracleofnj <jared.samet@aya.yale.edu>
2372
             Date: Fri Nov 18 14:07:39 2016 -0500
2373
2374
                 Fix parse difference
2375
             commit 39634bbf216c4eb75ed7653687739f3d22bf68a4
2376
2377
             Author: oracleofnj <jared.samet@aya.yale.edu>
2378
             Date: Fri Nov 18 14:01:21 2016 -0500
2379
2380
                 Remove unnecessary files
2381
         | commit d772725d15628dd48f6542cd70bd234c5d157304
2382
```

```
2383
            Author: oracleofnj <jared.samet@aya.yale.edu>
2384
            Date: Fri Nov 18 14:01:02 2016 -0500
2385
2386
                Make inputs work with interpreter
2387
              commit faecfa1905804786fa0fc08086ef32e37b811964
2388
2389
           \ Merge: 6f63e89 41a81ce
2390
             | Author: oracleofn; <jared.samet@aya.vale.edu>
2391
             Date: Fri Nov 18 01:48:44 2016 -0500
2392
2393
                   Fix merge conflict in box_args
2394
2395
             commit 41a81cead3637dc09da80d33ba04ee453d873b88
2396
             | Author: oracleofnj <jared.samet@aya.yale.edu>
2397
             Date: Fri Nov 18 01:40:11 2016 -0500
2398
2399
                  Move argument boxing into a function
2400
2401
           * commit 642ce765c175416879ca7d17f68f31966a027710
2402
           | Author: Kevin <kevinye1113@gmail.com>
2403
             Date: Sat Nov 19 16:39:50 2016 -0500
2404
2405
                   Fixed helloworld bug
2406
2407
            * commit ac3d7fa3ff769a6b987e3837a05652be00b1057b
2408
             Author: Kevin <kevinye1113@gmail.com>
2409
             Date: Sat Nov 19 16:10:53 2016 -0500
2410
2411
                   Added corresponding AST result for gcd function
2412
           * commit f483ac7bc551d831ef314f07ecf51eb3c571b184
2413
2414
           | Author: Kevin <kevinye1113@gmail.com>
2415
             Date: Fri Nov 18 14:10:32 2016 -0500
2416
2417
                   Updated print statement for each test
2418
                commit f4456f8815d6e4d181920a4800da3257d75edbf7
2419
2420
               Merge: 00aafb7 124d61e
2421
                Author: kevinye1 <kevinye1@users.noreply.github.com>
2422
                 Date: Fri Nov 18 13:17:25 2016 -0500
2423
2424
                     Merge branch 'master' into test_cases
2425
2426 * | | |
                commit 124d61e803cd209a0b7edf977473240fa1b450f5
2427 |\ \ \ \ Merge: 6f63e89 82cf599
2428
    | | / / / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2429
     Date: Fri Nov 18 12:44:50 2016 -0500
2430
     1 1/ / /
2431
     1/1 1 1
                     Merge pull request #61 from Neitsch/reorg-test
2432
2433
                     Modify test script to compare interpreter and compiler with expected
2434
2435
      * | commit 82cf59904f569175b2dcd4de51e4faf5ff925d7d
2436
            Author: oracleofnj <jared.samet@aya.yale.edu>
     / / /
2437
             Date: Fri Nov 18 12:34:57 2016 -0500
2438
```

```
2439
            Modify test script to compare interpreter and compiler with expected
2440
2441 * | |
            commit 6f63e898f49513139ab852300ee219aad742020b
2442
            Merge: 012caaa 088dc45
2443
            Author: Jared Samet < jared.samet@aya.yale.edu>
2444
     1/1
            Date: Fri Nov 18 00:48:07 2016 -0500
2445
2446
                Merge pull request #59 from Neitsch/hello-hello
2447
2448
                Hello world
2449
2450
            commit 088dc45e0b59702e41d2a3d4e13ef6eb11f580dc
2451
            Merge: f84757b 012caaa
2452
            Author: Nigel Schuster <nigel.schusters@googlemail.com>
            Date: Fri Nov 18 00:29:45 2016 -0500
2453
     1/1
2454
2455
                Merge
2456
2457 * | |
            commit 012caaaf689c35d226b447301bb847b14d645cab
2458
    |\ \ Merge: 5e63cee 9463afa
2459
           Author: Jared Samet < jared.samet@aya.yale.edu>
            Date: Fri Nov 18 00:12:40 2016 -0500
2460
2461
2462
                Merge pull request #58 from Neitsch/copy-argv
2463
2464
                Copy argv
2465
             commit 9463afa08811674f462b4a52b8433c8a7c19a7e9
2466
          \ \ Merge: 54858ab bb11d6d
2467
2468
            | Author: oracleofnj <jared.samet@aya.yale.edu>
2469
            Date: Thu Nov 17 23:12:41 2016 -0500
2470
2471
                  Merge branch 'copy-argv' of https://github.com/Neitsch/plt into copy-
        arqv
2472
2473
             commit 54858ab5bbcc0b1879f4b4d7387d9e7e839e0677
2474
             | Author: oracleofnj <jared.samet@aya.yale.edu>
             Date: Thu Nov 17 23:11:29 2016 -0500
2475
2476
2477
                  Add => infix operator to cut down on all the build_struct_gep calls
2478
            | commit f84757bec65346775db43303f5b02754aa155e29
2479
2480
            | Author: Nigel Schuster <nigel.schusters@googlemail.com>
2481
             Date: Fri Nov 18 00:02:34 2016 -0500
2482
2483
                  Removed unneccessary files
2484
         | * | commit 18fbff1163bf5660839cc7f2d03ab00299fbec29
2485
2486
            | Author: Nigel Schuster <nigel.schusters@googlemail.com>
2487
             Date: Fri Nov 18 00:01:49 2016 -0500
2488
2489
                  Removed dummy arg reading, added printing to interpreter - helloworld TC
         passes
2490
         2491
     | | * | commit b866da35db69204510000fd87c33cb6aade0532d
     2492
```

```
2493
             Date: Thu Nov 17 23:31:42 2016 -0500
2494
2495
                   Made hello world work
2496
2497
               commit bb11d6dfa4ba716dfd50347645619d8f79321a66
         *
2498
       | |\ \ Merge: e123652 5e63cee
2499
       // / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2500
               Date: Thu Nov 17 23:10:24 2016 -0500
2501
     1 1/ /
2502
     1/1 1
                   Merge branch 'master' into copy-argv
2503
2504
             commit 5e63ceebeaf8664dfdedb23271f70769609eb4b2
        \ \ Merge: cafe20e 4a4a806
2505
2506
         | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2507
            Date: Thu Nov 17 17:40:31 2016 -0500
2508
2509
                Merge pull request #54 from Neitsch/operation_tests
2510
2511
                 Operation tests.
2512
2513
              commit 4a4a8063c0da95694f00b7683f9985f40877cbda
2514
     | | \ \ Merge: 4b28df2 cafe20e
2515
     | |/ / / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2516
     1/1 1 1
             Date: Thu Nov 17 17:19:13 2016 -0500
2517
2518
                   Merge branch 'master' into operation_tests
2519
2520 * | |
             commit cafe20e6e0f4dfe020f2c34caafa3f8879a944ee
2521
          \ \ Merge: d43a87b b728e2e
2522
           | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2523
           | Date: Thu Nov 17 17:19:11 2016 -0500
2524
2525
                   Merge pull request #52 from Neitsch/one-main-arg
2526
2527
                   Call main() with first argument <empty> in interpreter
2528
2529
                 commit b728e2e80558871009f78e188adaea92ff9826af
          \\\ Merge: e490548 d43a87b
2530
2531
                Author: Nigel Schuster <Neitsch@users.noreply.github.com>
         2532
     1/1
                 Date:
                       Thu Nov 17 17:16:20 2016 -0500
2533
2534
                     Merge branch 'master' into one-main-arg
2535
2536
                 commit e490548c499782a30071fb192311adea1711422f
     | | \ \ \ Merge: 79ee3de a4cf367
2537
2538
           | | Author: Jared Samet < jared.samet@aya.yale.edu>
2539
             | Date: Thu Nov 17 15:50:35 2016 -0500
2540
2541
                     Merge branch 'master' into one-main-arg
2542
2543
               | commit 79ee3dea137cf7fd4ace406716195cf758cabd75
2544
                 Author: oracleofnj <jared.samet@aya.yale.edu>
                 Date: Thu Nov 17 15:18:58 2016 -0500
2545
2546
2547
                     Call main() with first argument <empty> in interpreter
2548
```

```
| * | | commit 4b28df26b724eccc92829ca84bd1ccdbc84c6729
2549
                  Merge: 3255e1b d43a87b
2550
2551
      |-|-|/
                  Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2552
     1/1 | | | |
                   Date: Thu Nov 17 17:17:44 2016 -0500
2553
2554
                       Merge branch 'master' into operation_tests
2555
                   commit d43a87b8ab2c8e52d42c16af44d90a48301752c7
2556
2557
        \\\\\ Merge: a4cf367 b1238a0
2558
       |-|/////
                  Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2559
                   Date: Thu Nov 17 17:15:28 2016 -0500
2560
2561
                       Merge pull request #55 from Neitsch/shell-fix
2562
2563
                       Using bourne shell style redirection:
2564
             | commit b1238a0145da88327094dd2fa59a243cc72856c2
2565
2566
             | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2567
             Date: Thu Nov 17 17:08:56 2016 -0500
2568
2569
                     Shell is not my strength
2570
2571
               | commit a6cc0eafe87931aa48498436441c6351ea1bfe0c
2572
               Author: Nigel Schuster < nigel.schusters@googlemail.com>
2573
               Date: Thu Nov 17 17:05:09 2016 -0500
2574
2575
                     Screw you bourne shell
2576
2577
            | commit 51fbe679918ad80440986f53208c9d393a98f2bb
2578
     |/ / / / Author: Nigel Schuster <nigel.schusters@googlemail.com>
2579
           | Date: Thu Nov 17 16:59:50 2016 -0500
2580
2581
                     Using bourne shell style redirection:
2582
         * | commit 3255e1b771252f98fbbffc2067744e7761ee4a2e
2583
2584
           | Author: Ishaan <ishaankolluri@gmail.com>
2585
             | Date: Thu Nov 17 16:32:12 2016 -0500
2586
2587
                   Modify test suite specs
2588
            | commit f0ab4d8880196a8f693891ef5ab6c8510e9a305d
2589
2590
           | | Author: Ishaan <ishaankolluri@gmail.com>
2591
            Date: Thu Nov 17 16:30:42 2016 -0500
2592
2593
                   Moved expected output text files to directory
2594
         * | commit 06d330c8e0470daaeefa0c06ad7b89a31f2ea4e5
2595
     | |/ / / Author: Ishaan <ishaankolluri@gmail.com>
2596
2597
     |/| | Date: Thu Nov 17 16:07:02 2016 -0500
2598
2599
                   75% through operator cases
2600
2601
            commit e123652c39885430a3ae0d6773b186cd102d37ac
2602
             Author: oracleofnj <jared.samet@aya.yale.edu>
2603
             Date: Thu Nov 17 22:28:12 2016 -0500
2604
```

```
2605
             Add byte for zero
2606
      | * | commit 26a03b7e32173ed2ef947084d16e25eaa82ff921
2607
2608
     | |/ / Author: oracleofnj <jared.samet@aya.yale.edu>
2609
             Date: Thu Nov 17 22:24:17 2016 -0500
     | / | |
2610
2611
                 Add new_string function
2612
2613
             commit a4cf367633dd1dba496a2ec83472d8f513f56aaf
        \ \ Merge: 7af929a c4f7437
2614
2615
       // Author: Jared Samet < jared.samet@aya.yale.edu>
2616
             Date: Thu Nov 17 15:50:29 2016 -0500
     1/1
2617
2618
                 Merge pull request #51 from Neitsch/test-script
2619
2620
                 Test script
2621
2622
     | * | commit c4f74379a669e99fa7941712f9d5f3406bd2a390
2623
         | Author: Nigel Schuster < nigel.schusters@googlemail.com>
2624
          Date: Thu Nov 17 14:39:38 2016 -0500
2625
2626
               Removed version specific lli
2627
     2628
         commit 7b2236b3671a30fe5c49dcd15de8e1d7ec40fd7d
2629
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
2630
           Date: Thu Nov 17 14:35:55 2016 -0500
2631
2632
               Fixed if no flag is given
2633
2634
          commit e10f6566f1d0a786eb103f542bd5572a7dc049b1
2635
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
2636
         Date: Thu Nov 17 14:24:20 2016 -0500
2637
2638
               Outputting diff only if -p flag is given
2639
     2640
         commit 2d2959718512cd1c4ab4d8618595e0fbf5a1afb2
2641
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
2642
          Date: Thu Nov 17 14:19:30 2016 -0500
2643
2644
               Added it as build target
2645
2646 *
             commit 7af929a4a10c0b447752ddb02b189ff74e48c7ed
2647
     |\ \ Merge: 7feb392 6ea43f6
2648
     | | / / Author: Jared Samet < jared.samet@aya.yale.edu>
2649
             Date: Thu Nov 17 14:12:19 2016 -0500
2650
2651
                 Merge pull request #50 from Neitsch/test-script
2652
2653
                 Test script
2654
2655
           commit 6ea43f63f5e0e05287b1b7c85d60b25a3fa471d9
2656
           Author: Nigel Schuster <nigel.schusters@googlemail.com>
2657
           Date: Thu Nov 17 13:54:55 2016 -0500
2658
2659
               Added more env variables to avoid copy paste
2660
```

```
* | commit 05f27a219ca18a846664c65754bf682a6bc3c58d
2661
2662
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
2663
         Date: Thu Nov 17 12:45:11 2016 -0500
2664
2665
              Made simple testscript
2666
     2667
     | * | commit aca43c139c3b3a1c925473669f664b41acc7c0df
2668
     // Author: Nigel Schuster < nigel.schusters@googlemail.com>
2669
          Date: Thu Nov 17 11:08:11 2016 -0500
2670
2671
              Removed accidentally added files
2672
2673
     * commit 00aafb71be96f422170e12cd38bd29a624cae40f
     | Author: Kevin <kevinye1113@gmail.com>
2674
     | Date: Fri Nov 18 13:16:08 2016 -0500
2675
2676
2677
             Renamed inputs folder
2678
2679
     * commit 99db652ae157dce96aa01290d6a492e4467e63ed
2680
     | Author: Kevin <kevinye1113@gmail.com>
2681
     | Date: Fri Nov 18 12:51:40 2016 -0500
2682
2683
             Renamed expected output extension and created input folder for test cases
2684
2685
      * commit b8028f9b923d3cdd5600088f2582c8b29bc9bc5b
2686
       Author: Kevin <kevinye1113@gmail.com>
2687
         Date: Thu Nov 17 20:27:37 2016 -0500
2688
2689
             Removed files from test folder
2690
     * commit c85d9b71b9b5073e2f2e2b2ecaf5253c2ffc1203
2691
2692
     | Author: Kevin <kevinye1113@gmail.com>
2693
     | Date: Thu Nov 17 20:25:21 2016 -0500
2694
2695
            Move testcases to testcases directory
2696
2697
     * commit f17c6b67700996588a2696886faba09bc5484880
2698
     | Author: Kevin Ye <kevinye1113@gmail.com>
2699
                Thu Nov 17 20:21:38 2016 -0500
         Date:
2700
2701
             Complete testcases for List/Range/Function/Expression with expected outputs
2702
2703
     * commit 9228eacadf83a6c901ce34947cad67eceb1dabca
2704 |/ Author: Kevin Ye <kevinye1113@gmail.com>
2705
       Date: Thu Nov 17 04:52:31 2016 -0500
2706
2707
             Test cases for List of Tests and Range/Function/Expression Tests
2708
2709 *
       commit 7feb392e1193b63f71f99995db0981330668253a
    |\ Merge: 41ef578 6e42afa
2710
       | Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
2711
2712
        Date: Thu Nov 17 00:28:53 2016 -0500
2713
2714
             Merge pull request #48 from Neitsch/testing_list
2715
2716
           Added initial testing list
```

```
2717
           commit 6e42afa596a96286149edacb4a44a0ff0c6f2a47
2718
       *
2719
       1\
          Merge: e40734b 41ef578
2720
           Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
2721
           Date: Thu Nov 17 00:27:13 2016 -0500
     1/1
2722
2723
               Merge branch 'master' into testing_list
2724
2725 * |
           commit 41ef57814b0e03cb890a26a11021150a1cb6793f
     |\ \ Merge: 1570836 3cbf089
2726
2727
         Author: Jared Samet < jared.samet@aya.yale.edu>
2728
           Date: Wed Nov 16 17:50:03 2016 -0500
2729
2730
               Merge pull request #49 from Neitsch/consume-command-line-args
2731
2732
               Consume command line args
2733
2734
     | * |
             commit 3cbf089e698f117fe7c093c0ad965ae75f7f5060
2735
     | | \ Merge: 2fa73be 1570836
2736
      // Author: oracleofnj <jared.samet@aya.yale.edu>
2737
     1/1
             Date: Wed Nov 16 17:45:58 2016 -0500
2738
2739
                 Fix merge conflict
2740
2741
             commit 1570836bf3643d233e52d1ceb1d46e072e37222a
2742
            Merge: 4alfcac a8fbced
2743
           Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2744
             Date: Wed Nov 16 16:51:05 2016 -0500
2745
2746
                 Merge pull request #45 from Neitsch/doc
2747
2748
                 Added a little documentation
2749
2750
             commit a8fbcedf43a46b3e398838e15b1f713ba5874ad3
2751
             Author: Nigel Schuster <nigel.schusters@googlemail.com>
2752
             Date: Wed Nov 16 16:38:49 2016 -0500
2753
2754
                 Fixed minor syntax error
2755
2756
               commit c2f37c8a801eda2b33c09d24ab762e10c0336168
       | \ \ \ \ \  Merge: 92fb7a3 4a1fcac
2757
2758
       |/ / Author: Nigel Schuster <nigel.schusters@googlemail.com>
2759
     1/1 1 1
               Date: Wed Nov 16 16:30:43 2016 -0500
2760
2761
                   Merge
2762
2763
             commit 92fb7a326d3811b20ca2f64938fc46e3879dc090
2764
             Author: Nigel Schuster <nigel.schusters@googlemail.com>
2765
             Date: Tue Nov 15 23:57:37 2016 -0500
2766
2767
                 Added a little documentation
2768
2769
             commit 2fa73be6cebe75a58364148689a0b496940cccd9
2770
             Author: oracleofnj <jared.samet@aya.yale.edu>
2771
             Date: Wed Nov 16 16:05:37 2016 -0500
2772
```

```
2773
            Set return code to length of argv[1]
2774
2775
     | | * | commit cd0d156ceeab4830df0f3a30b3265f34d3c07c68
2776
     | | / / Author: oracleofnj <jared.samet@aya.yale.edu>
2777
          Date: Wed Nov 16 15:50:39 2016 -0500
    1/1 1
2778
2779
                Start processing command line args
2780
    | | * commit e40734b736193f27f346eda80f4748132316db43
2781
2782
        Author: Ishaan <ishaankolluri@gmail.com>
2783
        Date: Wed Nov 16 23:25:01 2016 -0500
2784
2785
              Added more test scenarios
2786
     | | * commit bc21af622d3a32bb6c9fe2e86f83129886b8e574
2787
2788
     2789
    |/| Date: Wed Nov 16 15:54:12 2016 -0500
2790
2791
             Added initial testing list
2792 | |
          commit 4a1fcacf86ee892bc72582fd2ea3a9dc74d0e63c
2793 * |
2794 |\ Merge: 8944b9a f1b481e
2795
       | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2796
        Date: Wed Nov 16 13:55:46 2016 -0500
2797
2798
              Merge pull request #46 from Neitsch/number-type
2799
2800
             Added number type that defaults to int
2801
    | * | commit f1b481efad2233c37a8722580c655266116dad55
2802
2803 |/ / Author: Nigel Schuster <nigel.schusters@googlemail.com>
2804
         Date: Wed Nov 16 11:04:44 2016 -0500
2805
2806
              Added number type that defaults to int
2807
2808 * |
          commit 8944b9a1fb299e43a8de33dfb342243f75f7718a
    |\ \ Merge: fa1741a bcbde36
2809
     | |/ Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2810
2811
     1/1
          Date:
                Wed Nov 16 00:19:33 2016 -0500
2812
2813
             Merge pull request #44 from Neitsch/fix-arg
2814
2815
              Using subranges instead of ranges everywhere
2816
2817
          commit bcbde3610ba04bc8b125f34a502ad20f1ae80bd8
    *
2818
    | |\ Merge: 57b2162 fa1741a
2819
    2820
          Date: Tue Nov 15 23:49:07 2016 -0500
    1/1
2821
2822
              Merge branch 'master' into fix-arg
2823
          commit fa1741a24c0bd75650d06a79fee7ea1401382c0a
2824
       \ Merge: 660c049 9407677
2825
2826
        | Author: Jared Samet < jared.samet@aya.yale.edu>
2827
          Date: Tue Nov 15 23:03:23 2016 -0500
2828
```

```
2829
               Merge pull request #43 from Neitsch/more-llvm-gen-js
2830
2831
               More llvm gen from JS
2832
2833
         commit 9407677c52644d935175cf5abe25a31127bf1787
2834
         Author: oracleofnj <jared.samet@aya.yale.edu>
2835
         Date: Tue Nov 15 22:31:03 2016 -0500
2836
2837
               Add hash table for common functions and add dereference-the-range
     2838
2839
     * | commit 46e1fd5752c75220787e60a50a8c51064e50c7ce
2840
     // Author: oracleofnj <jared.samet@aya.yale.edu>
                  Tue Nov 15 21:38:51 2016 -0500
2841
           Date:
2842
2843
               Eliminate some copy & paste
2844
2845
     * commit 57b2162706267d8ae19c759d4ef4b1199f9946e3
2846
     / Author: Nigel Schuster < nigel.schusters@googlemail.com>
2847
         Date: Tue Nov 15 22:39:38 2016 -0500
2848
2849
             Using subranges instead of ranges everywhere
2850
2851 *
        commit 660c049fb22baac3526cd251b0b366ee3d1b8305
2852
     |\ Merge: 8ad5a19 25b23cd
2853
       | Author: Jared Samet < jared.samet@aya.yale.edu>
2854
         Date: Tue Nov 15 20:54:33 2016 -0500
2855
2856
             Merge pull request #42 from Neitsch/llvm-gen
2857
2858
             Llvm gen
2859
2860
     * commit 25b23cd3df1ebe93a00a330b2e02166d41e4dfea
2861
       Author: Nigel Schuster <nigel.schusters@googlemail.com>
2862
                Tue Nov 15 17:23:54 2016 -0500
2863
2864
             Fixed column retrieval for 1x1
2865
2866
       * commit 3f022031254b6da7a3278153288a09d052d16fa2
2867
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
2868
         Date:
                 Tue Nov 15 17:17:02 2016 -0500
2869
2870
             Fixed tests
2871
2872
          commit 26b8fcf1a26394ee6c82f447330ef2510aa32dc8
2873
     | |\ Merge: e347a87 aed28b3
2874
         Author: Nigel Schuster <nigel.schusters@googlemail.com>
2875
                  Tue Nov 15 17:15:08 2016 -0500
         Date:
2876
2877
               Merge
2878
2879
         * commit aed28b3e2ad836558e1ecdb4afb276f5bd022114
2880
           Author: oracleofnj <jared.samet@aya.yale.edu>
2881
           Date: Tue Nov 15 17:08:07 2016 -0500
2882
2883
               Add is_subrange_1x1
2884
```

```
2885
             commit cf5cbf0613395995f0ee23f19ab4a1a879364385
2886
            Merge: c71d469 4b34abd
2887
           | Author: oracleofnj <jared.samet@aya.yale.edu>
2888
             Date: Tue Nov 15 14:51:40 2016 -0500
2889
2890
                 Merge branch 'llvm-gen' of https://github.com/Neitsch/plt into llvm-gen
2891
2892
              commit 4b34abd125b1651df31211d8779b7c549d515ae7
         | |\ Merge: a80a6d0 8ad5a19
2893
2894
              Author: Nigel Schuster <Neitsch@users.noreply.github.com>
2895
               Date: Tue Nov 15 14:41:37 2016 -0500
2896
2897
                   Merge branch 'master' into llvm-gen
2898
2899
               commit 8ad5a19ed1d3e25da7ee9995fa1079fab3d08cb5
2900
        \ \ Merge: d6daff3 3f0362a
2901
           | Author: Jared Samet < jared.samet@aya.yale.edu>
2902
             Date: Tue Nov 15 14:33:40 2016 -0500
2903
2904
                   Merge pull request #40 from Neitsch/interpreter
2905
2906
                   Interpreter
2907
2908
                 commit 3f0362aff5a44f3c39f0d991c5cc11b85dc7c47e
2909
          \ \ \
                 Merge: d5f4024 d6daff3
2910
                 Author: Jared Samet < jared.samet@aya.yale.edu>
2911
                 Date:
                         Tue Nov 15 14:28:44 2016 -0500
2912
2913
                     Merge branch 'master' into interpreter
2914
                 commit d6daff3a9c877c8277f1bd86f080f0defa597ead
2915
2916
              \ Merge: 443a818 6afe599
2917
               Author: Jared Samet < jared.samet@aya.yale.edu>
2918
                 Date: Sun Nov 13 20:26:14 2016 -0500
2919
2920
                     Merge pull request #41 from Neitsch/LRM_String_Update
2921
2922
                     Added changes relating to strings.
2923
2924
                 commit 6afe5996ee757b714490685718f04027e04532ab
2925
                 Author: Ishaan Kolluri <ishaankolluri@gmail.com>
2926
                 Date:
                        Sun Nov 13 18:44:58 2016 -0500
2927
2928
                     Added changes relating to strings.
2929
2930
              commit c71d469cf691b624960ee4657697d623f0055f55
2931
             // Author: oracleofnj <jared.samet@aya.yale.edu>
2932
                 Date: Tue Nov 15 14:51:19 2016 -0500
2933
2934
                     Replace String.equal with =
2935
2936
             * commit a80a6d0053c71eb473fbbe5b3cdcaca004be4b48
2937
               Author: oracleofnj <jared.samet@aya.yale.edu>
2938
               Date: Tue Nov 15 14:41:07 2016 -0500
2939
2940
                 Add compile option to main
```

```
2941
2942
             commit e347a876c8713deff609324bae48d55ba8a69f04
2943
              Author: Nigel Schuster <nigel.schusters@googlemail.com>
2944
               Date: Tue Nov 15 17:12:26 2016 -0500
2945
2946
                   Using more generic flag for values
2947
2948
              commit c0c95a24323efbbe0abab2632671275c6ba0854a
2949
           |\ Merge: aa61ac9 d5f4024
2950
              Author: Nigel Schuster < nigel.schusters@googlemail.com>
2951
               Date: Tue Nov 15 14:16:13 2016 -0500
2952
2953
                   Merge
2954
2955
             commit d5f4024aab33d3307ddea75005f9885dc03395dc
2956
             Author: Nigel Schuster <nigel.schusters@googlemail.com>
2957
             Date: Tue Nov 15 13:44:44 2016 -0500
2958
2959
                 Moved failing TCs
2960
2961
             commit 42fd9ef88b59f80351a1170a3c5fc3d393ad55b6
2962
             Author: oracleofnj <jared.samet@aya.yale.edu>
2963
             Date: Tue Nov 15 12:21:57 2016 -0500
2964
2965
                 Fix bug in import
2966
2967
             commit 9c567c954d5e4f576f1ffaec3c5f152e86761c65
2968
             Author: Nigel Schuster <nigel.schusters@googlemail.com>
2969
             Date: Tue Nov 15 11:11:30 2016 -0500
2970
2971
                 Working on imports, fixed most testcases
2972
2973
            commit cf1ebf94b4dfacc0163e479d2ed6979146b47e2e
2974
            Author: oracleofnj <jared.samet@aya.yale.edu>
                    Sun Nov 13 23:09:30 2016 -0500
2975
             Date:
2976
2977
                 Rewrite main to take options; fix bug where import didn't know about first
          filename
2978
2979
            commit 0a5d484dba0b5e288e3b2bad4d6a4c044e1f8da9
2980
             Author: oracleofnj <jared.samet@aya.yale.edu>
2981
             Date: Sun Nov 13 18:45:29 2016 -0500
2982
2983
                 Revert "Generating function header"
2984
2985
                 This reverts commit f83a0bcc6ca8d58d79bdfb4b49471c6031e8d201.
2986
              commit 137d7e2b95b7340894b1d826dc38ef91a958e731
2987
2988
         |\ \ Merge: 118bfc5 bf1d8bb
             | Author: oracleofnj <jared.samet@aya.yale.edu>
2989
2990
             Date: Sun Nov 13 18:39:33 2016 -0500
2991
2992
                   Merge branch 'interpreter' of https://github.com/Neitsch/plt into
         interpreter
2993
     | | * | | commit 118bfc54ba67ecba87442b26112557c59868220e
2994
```

```
2995
              Author: oracleofnj <jared.samet@aya.yale.edu>
2996
                      Sun Nov 13 18:38:34 2016 -0500
               Date:
2997
2998
                   Allow single slice on RHS; make hashtag work
2999
3000
              commit 3addcc8b8c5029a7635a4b7edb5d718917618304
3001
              | Author: oracleofnj <jared.samet@aya.yale.edu>
3002
                       Sun Nov 13 14:38:11 2016 -0500
3003
3004
                   Make size(expr) an operator instead of built-in function
3005
3006
             commit 9a74e14abc798cab3268420451b7b9f3a9a2b7aa
3007
             Author: oracleofnj <jared.samet@aya.yale.edu>
3008
             Date:
                       Sun Nov 13 14:22:44 2016 -0500
3009
3010
                   Changing size() to be an operator
3011
3012
             * commit aa61ac98d42571ab91a54ff06cb80be3deaa76b7
3013
             Author: Nigel Schuster < nigel.schusters@googlemail.com>
3014
             Date: Tue Nov 15 09:31:42 2016 -0500
3015
3016
                   Allocating scope object
3017
3018
             * commit 574953833ac17b8d9c86faa967568ee8a27c7c22
3019
             Author: Nigel Schuster < nigel.schusters@googlemail.com>
3020
                      Sun Nov 13 21:59:28 2016 -0500
             Date:
3021
3022
                   Added main function
3023
3024
             * commit e376270c9b5af196cac37f5cd2f64071b9768ace
3025
             Author: Nigel Schuster <nigel.schusters@googlemail.com>
3026
             Date: Sun Nov 13 17:55:41 2016 -0500
3027
3028
                   Added type arguments for functions
3029
3030
           * commit 5cfb5199f5effd2ce86663bfce7ba388a169bb6f
3031
           |/ Author: Nigel Schuster <nigel.schusters@googlemail.com>
3032
                      Sun Nov 13 17:26:23 2016 -0500
               Date:
3033
3034
                   Set more types up
3035
3036
               commit bf1d8bb2b3965e4aeab26a1f4d1c91569c2eb6f2
           |\ Merge: f83a0bc d6d2eaa
3037
3038
           // Author: Nigel Schuster <nigel.schusters@googlemail.com>
3039
                       Sun Nov 13 15:30:35 2016 -0500
        |/|
               Date:
3040
3041
                   Merge branch 'interpreter' of https://github.com/Neitsch/plt into
         interpreter
3042
         3043
             commit d6d2eaa5440fbb39958b104a520197857514ea06
3044
             Author: oracleofnj <jared.samet@aya.yale.edu>
3045
             Date: Sun Nov 13 00:08:41 2016 -0500
3046
3047
                 Add closure to interpreter_variable
3048
       | * | commit 64fba825d3c3d6eb216bfa6228cab91c8985d048
3049
```

```
3050
            Author: oracleofnj <jared.samet@aya.yale.edu>
3051
             Date: Sat Nov 12 22:38:39 2016 -0500
3052
3053
                 Added bsearch to show logic bug
3054
3055
             commit 66ffdb1cdd48dfdb93653a30e07ea47573fbb42c
3056
             Author: oracleofnj <jared.samet@aya.yale.edu>
3057
             Date: Sat Nov 12 19:21:07 2016 -0500
3058
3059
                 Add alpha version of function calls
3060
             commit 376b29ae1f4b72fedb438e13b5fd1b3373c827bb
3061
3062
             Author: oracleofnj <jared.samet@aya.yale.edu>
3063
             Date: Sat Nov 12 17:17:23 2016 -0500
3064
3065
                Add string as value type
3066
3067
         * | commit 08c6lee7724a15c9f95f1afbaabfe69aff63c2a4
3068
            Author: oracleofnj <jared.samet@aya.yale.edu>
3069
             Date: Sat Nov 12 17:14:47 2016 -0500
3070
3071
                 Clean up discrepancies
3072
3073
         * commit f83a0bcc6ca8d58d79bdfb4b49471c6031e8d201
3074
         // Author: Nigel Schuster <nigel.schusters@googlemail.com>
             Date: Sun Nov 13 15:30:28 2016 -0500
3075
3076
3077
                 Generating function header
3078
3079
        * commit a18d5fc571d7ad30c4720b2a2ab5a58865726120
3080
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3081
        Date: Tue Nov 8 11:38:22 2016 -0500
3082
3083
               Fix bug with x[-1]
3084
3085
         * commit 962f81284eea2537d5b92451fb5494e52c1600a1
3086
         Author: oracleofnj <jared.samet@aya.yale.edu>
3087
         Date: Mon Nov 7 23:27:08 2016 -0500
3088
3089
               Refactor scope for interpreter; resolve variables on demand; make selections
          work properly
3090
        * commit 47bbef19ea8c13e555d5751a1ae4f369b8d0007d
3091
3092
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3093
     | | Date: Sun Nov 6 22:05:55 2016 -0500
3094
3095
               Minor adjustments to interpreter to work with mapped AST
3096
3097
        * commit fddc6bc63b746a5aa19fb96fc1100a9da62ef94f
3098
         Author: oracleofnj <jared.samet@aya.yale.edu>
3099
         Date: Sun Nov 6 18:32:17 2016 -0500
3100
3101
               Eliminate extraneous nulls in JSON
3102
3103
        * commit ffddb17fb3d6995f44b24199a1fa6a45289ec8a3
3104
     | | Author: oracleofnj <jared.samet@aya.yale.edu>
```

```
Date: Sun Nov 6 18:15:40 2016 -0500
3105
3106
3107
              Turn statement and function lists into StringMaps
3108
3109
              * Lists of statements are organized into StringMaps, mapping
3110
              * variable names to (dimensions, [formula assignments])
3111
              * Each dimension is either an integer or an ID (no "Some")
              * For each formula assignment, row_start, row_end, col_start, col_end
3112
3113
              * are now either integers or IDs
3114
3115
              * Lists of functions are organized into StringMaps, mapping function
              * names to (parameters, StringMap{variable name: def}, return val)
3116
3117
3118
              * Throws an exception if duplicate variable definitions or function
3119
              * definitions are encountered
3120
3121
              * Throws an exception if an assignment to an unknown variable
3122
              * is encountered
3123
3124
     | | * commit 6810003e25ead7a1cb013849cb94600ab501dae8
3125
     | | Author: oracleofnj <jared.samet@aya.yale.edu>
     3126
3127
3128
              Fix pattern matching warning
3129
         * commit 7107a46504b717448dcd1f51a969fe5d0fc289e8
3130
3131
          Author: oracleofnj <jared.samet@aya.yale.edu>
3132
         Date: Sat Nov 5 18:01:34 2016 -0400
3133
3134
              Add function to check range literals for legality at parse time
3135
3136
        * commit 80b13d19d1c44db5109f6bcaf2a484175a0340a6
3137
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3138
         Date: Sat Nov 5 15:13:10 2016 -0400
3139
3140
              Handle selections better
3141
3142
         * commit 6cbb009ff6e6d1cee972a5cf79520797c685a52f
3143
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3144
         Date:
                 Fri Nov 4 15:48:58 2016 -0400
3145
3146
              Count to 1,000,000 using tail—recursive versions of List.map and cartesian
     product
3147
     * commit 9b2252d163cb36dee96cc654b3b33a2adb96825e
3148
3149
     | | Author: oracleofnj <jared.samet@aya.yale.edu>
3150
     3151
3152
              Show enter and exit
3153
3154
         * commit 3585e432acf0c6aef34585cad6ef491f1e0aa1cd
3155
          Author: oracleofnj <jared.samet@aya.yale.edu>
3156
          Date: Fri Nov 4 02:21:38 2016 -0400
3157
3158
              See how high it can count recursively
3159
```

```
3160
       * commit 38cf541bfd31e7fe9458c287c39c639ddda2792f
3161
           Author: oracleofnj <jared.samet@aya.yale.edu>
3162
          Date: Fri Nov 4 02:15:50 2016 -0400
3163
3164
               Get the easy parts of the interpreter working
3165
3166
         * commit 5d81d6ebc492cd13db7ea52a35f104512a5873c9
3167
         Author: oracleofni <jared.samet@ava.vale.edu>
         Date: Thu Nov 3 17:17:51 2016 -0400
3168
3169
3170
               Start working on interpreter
3171
3172
         * commit 0078cee2ecbb431212849db233909580a2bb8c41
3173
           Author: oracleofnj <jared.samet@aya.yale.edu>
3174
          Date: Tue Nov 1 23:40:57 2016 -0400
3175
3176
               Got a non-tail-recursive version of topological sort working
3177
3178
         * commit 85df17519a57bf08f21d20c97c7c768e294673ac
3179
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3180
         Date: Tue Nov 1 15:39:10 2016 -0400
3181
3182
               Irrelevant highlighting thing
3183
3184
         * commit 84c719aaaf45a702e2ad81ffb08b52505d780b3f
3185
           Author: oracleofnj <jared.samet@aya.yale.edu>
3186
          Date: Tue Nov 1 14:39:49 2016 -0400
3187
3188
               Rearrange nested functions
3189
3190
         * commit 557dc4e32897ad2a47585d6a64cee6f649813000
3191
         Author: oracleofnj <jared.samet@aya.yale.edu>
3192
         Date: Tue Nov 1 13:50:52 2016 -0400
3193
3194
               Add circular import test case
3195
3196
         * commit c47679884ae0408cce7352f2b7c12032596d1813
3197
           Author: oracleofnj <jared.samet@aya.yale.edu>
                  Tue Nov 1 13:35:46 2016 -0400
3198
           Date:
3199
3200
              Fix syntax errors
3201
3202
             commit af5a31da8b2c2dbf99b1f7238aa75f5424a4917a
3203
         |\ Merge: 02ca24f d451cc4
3204
           Author: Jared Samet < jared.samet@aya.yale.edu>
3205
             Date: Tue Nov 1 13:31:49 2016 -0400
3206
3207
                 Merge pull request #37 from Neitsch/import-rec
3208
3209
                 Recursively looking up dependencies
3210
              commit d451cc42d244b6fbab30c782cb2c2a4005be539b
3211
3212
              Merge: 6a28c05 e673dca
3213
             | Author: Jared Samet < jared.samet@aya.yale.edu>
3214
               Date: Tue Nov 1 13:31:33 2016 -0400
3215
```

```
3216
                   Merge pull request #38 from Neitsch/import-load
3217
3218
                   Loading data from all imports
3219
3220
           * commit e673dca67cec24791211af2b9f80791cb14de39d
3221
           // Author: Neitsch <ns3158@columbia.edu>
3222
               Date: Mon Oct 31 15:56:43 2016 -0400
3223
3224
                   Loading data from all imports
3225
3226
           * commit 6a28c05cd7632d70aedb70fdcfdc8d264e3e3479
3227
             Author: Neitsch <ns3158@columbia.edu>
3228
             Date: Mon Oct 31 15:40:41 2016 -0400
3229
3230
                 Recursively looking up dependencies
3231
3232
               commit 02ca24fac16c38f7b7f2dcbe2010ec04af49e007
3233
         |\ Merge: 3f28289 6fa0e39
3234
             Author: Jared Samet < jared.samet@aya.yale.edu>
3235
             Date: Tue Nov 1 13:30:47 2016 -0400
3236
3237
                   Merge pull request #39 from Neitsch/wild-exc
3238
3239
                   Raising exceptions on certain values
3240
             | commit 6fa0e392019110045c14f1cdddc007e2bf5533ec
3241
3242
              Author: Neitsch <ns3158@columbia.edu>
3243
               Date: Mon Oct 31 16:43:17 2016 -0400
3244
3245
                   Raising exceptions on certain values
3246
3247
               commit 3f28289a73cf2fe837b2b44eaab7b105bb2b81fb
3248
            \ Merge: 7d70af2 4eaef3b
3249
           // Author: Jared Samet < jared.samet@aya.yale.edu>
3250
                       Mon Oct 31 11:53:10 2016 -0400
               Date:
3251
3252
                   Merge pull request #36 from Neitsch/import-arrange
3253
3254
                   Added unsorted function, globals and imports
3255
3256
           * commit 4eaef3b64c7b0404fea7876990e621d4f6ded907
3257
             Author: Neitsch <ns3158@columbia.edu>
3258
             Date: Mon Oct 31 11:01:00 2016 -0400
3259
3260
                 Removed obsolete parts
3261
3262
         * commit 7d7b1e51de024be3acc6f276df2027ea80c8b35f
3263
         // Author: Neitsch <ns3158@columbia.edu>
3264
             Date: Mon Oct 31 10:59:12 2016 -0400
3265
3266
                 Added unsorted function, globals and imports
3267
3268
         * commit 7d70af2345c2cc0d09944e19f7517b0378635ce7
3269
           Author: oracleofnj <jared.samet@aya.yale.edu>
3270
           Date: Sun Oct 30 15:23:04 2016 -0400
3271
```

```
3272
     | | Add some explanatory comments
3273
3274
        * commit 40d6b169baf47be6839cc792f7fa17e79b83dab6
3275
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3276
         Date: Sun Oct 30 15:03:32 2016 -0400
3277
3278
              More expansion samples
3279
3280
        * commit af9b01c245de91965ee64957c7ce5112e8e059db
3281
         Author: oracleofnj <jared.samet@aya.yale.edu>
         Date: Sun Oct 30 14:48:44 2016 -0400
3282
3283
3284
              Refactor expansion code
3285
         * commit 903bc3fe44b93382ae8211e1828a66526954058a
3286
3287
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3288
       | | Date: Sun Oct 30 00:19:10 2016 -0400
3289
3290
              Add test output
3291
3292
         * commit 68b7b0340a9b6e21ca71140207c46a00e36d3396
3293
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3294
        Date: Sun Oct 30 00:17:02 2016 -0400
3295
3296
              Add test case
3297
3298
         * commit a8bdf33619977487b629fc12bb99a66a5a5c41ed
3299
          Author: oracleofnj <jared.samet@aya.yale.edu>
3300
         Date: Sun Oct 30 00:04:05 2016 -0400
3301
3302
              Add LHS slice expansion
3303
3304
         * commit 4ee6fdf258900ecbae3a8d1efb66e1019c188ce8
3305
         Author: oracleofnj <jared.samet@aya.yale.edu>
         Date: Sat Oct 29 17:36:17 2016 -0400
3306
3307
3308
              Add output
3309
        * commit 2b8bced61855a2361384912a47b3459c98828e2c
3310
3311
     3312
                 Sat Oct 29 17:27:22 2016 -0400
     1/1
          Date:
3313
3314
              Expand dimension expressions
3315
3316 * |
          commit 443a818dc4fd9ec42da4afd6e733dca35cc198e8
3317
    |\ \ Merge: 022e8cd 9ba3c65
3318
     | |/ Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
3319
          Date: Wed Oct 26 16:31:51 2016 -0400
3320
3321
              Merge pull request #35 from ishaankolluri/master
3322
3323
              Add UNIs
3324
3325
      * commit 9ba3c657b5a67bc5d2fc69be83b2e73809ab96ce
3326
     | Author: Ishaan Kolluri <ishaankolluri@gmail.com>
3327
     | | Date: Wed Oct 26 16:31:00 2016 -0400
```

```
3328
3329
             Add UNIs
3330
3331 * |
           commit 022e8cdff18e452b0d3c518836141f30f93a9356
3332
          Merge: Obd9c4a 808aae5
3333
          Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
3334
           Date: Wed Oct 26 16:25:57 2016 -0400
3335
3336
               Merge pull request #34 from ishaankolluri/master
3337
3338
               One more edit
3339
3340
     * commit 808aae5ee501ea7b86371ffe3b03ca489af02c07
3341
     // Author: Ishaan Kolluri <ishaankolluri@gmail.com>
3342
                Wed Oct 26 16:22:10 2016 -0400
         Date:
3343
3344
             Added change to precedence operators
3345
3346 *
         commit 0bd9c4af5b3575b5c8f60973b8a2e9593ec207ee
3347 |\ Merge: e7020ec fb2b382
3348
       Author: Jared Samet < jared.samet@aya.yale.edu>
3349
         Date: Wed Oct 26 15:59:53 2016 -0400
3350
3351
             Merge pull request #33 from Neitsch/final-slicing-comments
3352
3353
             Thats all for now folks
3354
3355
     * commit fb2b382bd13dcdd469a3c2d7a6cce429f41ea632
3356
     // Author: oracleofnj <jared.samet@aya.yale.edu>
3357
         Date: Wed Oct 26 15:54:11 2016 -0400
3358
3359
             Thats all for now folks
3360
3361 *
         commit e7020ec688f7a86453b383714d8b5db98c699d2a
     |\ Merge: 4b7984a 4683f14
3362
3363
       | Author: Jared Samet < jared.samet@aya.yale.edu>
3364
                 Wed Oct 26 15:00:11 2016 -0400
         Date:
3365
3366
             Merge pull request #32 from Neitsch/final-lrm-edits
3367
3368
             Flesh out switch expressions, add precedence
3369
     * commit 4683f14715a99d5cdb53089a3bd247035847f3c5
3370
3371
     // Author: oracleofnj <jared.samet@aya.yale.edu>
3372
         Date: Wed Oct 26 14:48:41 2016 -0400
3373
3374
             Flesh out switch expressions, add precedence
3375
3376 *
         commit 4b7984ac504b295e16f8bc77db8024742c6543ab
     |\ Merge: 0c42b9c 3d587c5
3377
3378
       | Author: Jared Samet < jared.samet@aya.yale.edu>
3379
         Date: Wed Oct 26 11:15:03 2016 -0400
3380
3381
             Merge pull request #31 from Neitsch/more-lrm-edits
3382
3383
             Incorporate requested edits and a few more clarifications
```

```
3384
3385
      * commit 3d587c5997c06337022a69c4a064ee1f33ca6bd2
3386
     // Author: oracleofnj <jared.samet@aya.yale.edu>
3387
         Date:
                Wed Oct 26 11:10:15 2016 -0400
3388
3389
             Incorporate requested edits and a few more clarifications
3390
3391 *
         commit 0c42b9cf523a95903a4464420864a25a638c8bfb
3392 |\ Merge: 63fb02b cd81040
3393
       | Author: Jared Samet < jared.samet@aya.yale.edu>
3394
                Wed Oct 26 09:22:08 2016 -0400
         Date:
3395
3396
             Merge pull request #30 from ishaankolluri/LRM_update
3397
3398
             Added changes to first half of LRM
3399
     | * commit cd81040e2c5ba5da130c04bc67eaef13fa6522db
3400
3401
     // Author: ishaankolluri <ishaankolluri@gmail.com>
3402
         Date: Wed Oct 26 03:30:20 2016 -0400
3403
3404
             Added changes to first half of LRM
3405
        commit 63fb02be16a805fd845fb89632ca258ddbeedeb6
3406 *
3407
     |\ Merge: 5932551 0941e96
3408
       | Author: Jared Samet < jared.samet@aya.yale.edu>
3409
         Date: Wed Oct 26 02:13:17 2016 -0400
3410
3411
             Merge pull request #29 from Neitsch/lrm-edits
3412
3413
             Lrm edits
3414
3415
     * commit 0941e967272126c6417f458450c611109792e6b8
3416
     | Author: oracleofnj <jared.samet@aya.yale.edu>
3417
       Date: Wed Oct 26 02:04:47 2016 -0400
3418
3419
             Rebuild PDF
3420
3421
     * commit cb0406921e69f750eca4de178dc2eb8d0733f90f
3422
        Author: oracleofnj <jared.samet@aya.yale.edu>
                Wed Oct 26 02:04:01 2016 -0400
3423
         Date:
3424
3425
            Add built in functions
3426
     * commit 4abf638392a694426f3ca02fb7fcd8ce5b5d3098
3427
3428
     | Author: oracleofnj <jared.samet@aya.yale.edu>
3429
     | Date: Wed Oct 26 01:56:38 2016 -0400
3430
3431
             Add built in functions
3432
3433
     * commit 7661925a96608a3ca00325d343f3feb4c6a0803a
3434
     // Author: oracleofnj <jared.samet@aya.yale.edu>
         Date: Wed Oct 26 00:04:22 2016 -0400
3435
3436
3437
             Initial comments
3438
3439 * commit 59325515eae265feca08ec854902c0e14fcd0565
```

```
3440
     |\ Merge: b978f00 cc66297
       Author: Nigel Schuster <Neitsch@users.noreply.github.com>
3441
3442
        Date: Tue Oct 25 21:30:40 2016 -0400
3443
3444
             Merge pull request #28 from Neitsch/func-doc-fix
3445
3446
             Fixed mistakes in functions part of the doc
3447
     * commit cc66297fd6785a81de7d638a838cc2e4e6645c54
3448
3449
     // Author: Nigel Schuster <nigel.schusters@googlemail.com>
3450
                 Tue Oct 25 20:14:27 2016 -0400
         Date:
3451
3452
             Fixed mistakes in functions part of the doc
3453
         commit b978f0021545f18d4481658176c1118d7186e624
3454 *
3455
     |\ Merge: 2e1ea60 125a5bb
3456
     | Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
3457
     | Date: Tue Oct 25 13:04:05 2016 -0400
3458
3459
             Merge pull request #27 from ishaankolluri/master
3460
3461
             Removed AUX file
3462
3463
     * commit 125a5bb4578448db78b45022651c818e6e07c842
3464
     / Author: Ishaan Kolluri <ishaankolluri@gmail.com>
         Date: Tue Oct 25 12:49:38 2016 -0400
3465
3466
3467
             Removed AUX file
3468
3469 *
         commit 2e1ea607d20d2b7c0ce2b283c77720b067e197a9
    |\ Merge: eb24036 84b03ee
3470
3471
       Author: Jared Samet < jared.samet@aya.yale.edu>
3472
       Date: Tue Oct 25 11:30:35 2016 -0400
3473
3474
             Merge pull request #26 from Neitsch/better-regexp
3475
3476
             Better regexp
3477
      * commit 84b03ee4733da1e7a89376cfce43bb76f0884999
3478
3479
     | Author: oracleofnj <jared.samet@aya.yale.edu>
3480
                 Tue Oct 25 01:22:31 2016 -0400
     | Date:
3481
3482
            Fix let order
3483
     * commit 91b40c52f9891693fe9cbb7d00418c9877fbae37
3484
3485
     // Author: oracleofnj <jared.samet@aya.yale.edu>
3486
         Date: Tue Oct 25 01:14:43 2016 -0400
3487
3488
             Improve regexp
3489
3490
         commit eb240362462693dca5918e90054fc421c65113fe
     |\ Merge: ec7cc9c 991c918
3491
3492
       | Author: Jared Samet < jared.samet@aya.yale.edu>
3493
         Date: Mon Oct 24 23:55:38 2016 -0400
3494
3495
         Merge pull request #23 from Neitsch/file-io
```

```
3496
3497
            File io
3498
     * commit 991c918de9ba07ab68722fe8042a1edc96b555a5
3499
3500
     | Author: oracleofnj <jared.samet@aya.yale.edu>
3501
       Date: Mon Oct 24 23:20:12 2016 -0400
3502
3503
             Replace fopen, fclose etc. with open, close etc.
3504
3505
     * commit 338faa006d8d4c7858477028eb8074d69c24aee1
3506
       Author: oracleofnj <jared.samet@aya.yale.edu>
        Date: Mon Oct 24 23:14:30 2016 -0400
3507
3508
3509
            Fix file inclusion and rebuild PDF
3510
3511
          commit b24edd3a58eed2763abd1fe1d4023138af05bbf7
3512
     | |\ Merge: 44a1cc5 2f09a64
3513
       | Author: oracleofnj <jared.samet@aya.yale.edu>
3514
       Date: Mon Oct 24 23:11:50 2016 -0400
3515
3516
              Merge in expressions section
3517
3518
         * commit 2f09a643221dec47af99592d0a53e15bcc7d67d7
3519
         Author: Kevin <kevinye1113@gmail.com>
         Date: Mon Oct 24 15:52:10 2016 -0400
3520
3521
3522
              Added the Expression Section 4 to LRM
3523
3524
            commit 8cd39aca8a29d19fe986ad4e7a3540fa4347221f
3525
           Merge: e5d2478 3609366
3526
           Author: Kevin <kevinye1113@gmail.com>
3527
            Date: Mon Oct 24 11:05:33 2016 -0400
3528
3529
                Added string literals to scanner
3530
3531
          | commit e5d247809c610f428568dce665213019bc368047
3532
            Author: Kevin <kevinye1113@gmail.com>
3533
            Date: Mon Oct 24 11:00:39 2016 -0400
3534
3535
                Added string literals to scanner
3536
3537
             commit 44a1cc53aee333cb2d9832f66c0750b8a7add7d8
3538
       |\ \ Merge: 1ea3c28 3609366
         | |/ Author: oracleofnj <jared.samet@aya.yale.edu>
3539
3540
             Date: Mon Oct 24 23:06:07 2016 -0400
       | |/|
3541
3542
                  Merge scanner changes and add regexp to properly escape strings
3543
3544
          | commit 36093668180db647b45e208d1dfe0158e7281281
3545
            Author: kevinye1 <kevinye1@users.noreply.github.com>
3546
            Date: Thu Oct 20 21:14:00 2016 -0400
3547
3548
                 Update scanner.mll
3549
3550
            commit 0d57652f53d8a6f4dbbb84d58a6807e5ef59a6fe
3551
```

```
Date: Thu Oct 20 21:10:27 2016 -0400
3552
3553
3554
                 Fixed bug in scanner
3555
3556
             commit 1848813885a8c826151e62a27b4ef97b99004a96
3557
             Author: Kevin <kevinye1113@gmail.com>
3558
             Date: Thu Oct 20 20:21:49 2016 -0400
3559
3560
                Made scanner
3561
3562
               commit 1ea3c283f511068ed0886e67e5e65e974b646015
          \ \ Merge: a692466 ec7cc9c
3563
3564
          / / Author: oracleofnj <jared.samet@aya.yale.edu>
3565
              Date: Mon Oct 24 15:26:16 2016 -0400
3566
3567
                   Merge branch 'master' into file-io
3568
3569
     * | | commit ec7cc9c42b88c8cab9bbfe748fb03109eb18bd9b
3570
     | | _ | / Author: oracleofnj < jared.samet@aya.yale.edu>
3571
     1/1
             Date: Mon Oct 24 15:06:06 2016 -0400
3572
3573
                 Replace repetitive code with more idiomatic OCaml
3574
     3575
         commit a69246646b48528da4e0f0ddf422cbc35522aeaf
3576
           Author: oracleofnj <jared.samet@aya.yale.edu>
3577
           Date: Mon Oct 24 01:09:21 2016 -0400
3578
3579
               Fix tests until strings ready
     3580
          commit 8553a50322c8741d29ed4f4b963a69f232f54750
3581
      *
3582
          Author: oracleofnj <jared.samet@aya.yale.edu>
3583
         Date: Mon Oct 24 01:08:29 2016 -0400
3584
3585
              Fix tests until string ready
3586
       3587
             commit 0ed4ad70e5f0db7388b1228df374a1f214f450e6
3588
       |\ \ Merge: 71e0b1c 92ac506
3589
         / Author: oracleofnj <jared.samet@aya.yale.edu>
3590
             Date: Mon Oct 24 00:55:08 2016 -0400
     1/1
3591
3592
                 Add File IO, Entry point and Example to LRM
3593
3594
          commit 92ac50626674ad7d1ccd534f24d39892ca8cb3fa
3595
         | Author: ishaankolluri <ishaankolluri@gmail.com>
3596
     | | Date: Sun Oct 23 22:24:06 2016 -0400
3597
3598
               Make small change to data type section
3599
3600
         commit 71e0b1cb20967ecf7698c343d3774588f361e71c
3601
         | Author: oracleofnj <jared.samet@aya.yale.edu>
3602
          Date: Sun Oct 23 22:58:21 2016 -0400
3603
3604
               Fix section reference
3605
3606
     | * | commit 6abb290b9aeaf16eaac6bc431862cb780337b4c6
3607
     |/ / Author: oracleofnj <jared.samet@aya.yale.edu>
```

```
3608
         Date: Sun Oct 23 22:34:42 2016 -0400
3609
3610
               Initial commit for File I/O section
3611
3612 * | commit 67b4b65ab85c86f5369138e782c352143aa1cfec
3613 | Author: oracleofnj <jared.samet@aya.yale.edu>
3614
     | Date: Sun Oct 23 19:12:38 2016 -0400
3615
3616
            Reduce eye pain
3617 | |
3618 * |
           commit 2824ee9412ceb67f802e77c382b50dfbf98b57e3
     |\ \ Merge: 13d0896 f8ae543
3619
         Author: Nigel Schuster < Neitsch@users.noreply.github.com>
3620
3621
         Date:
                 Sun Oct 23 19:03:24 2016 -0400
3622
3623
              Merge pull request #20 from Neitsch/samples
3624
3625
              Samples from LRM
3626
     3627
             commit f8ae5439b7d1ffc27640e2e66cb657184f2cd1b8
3628
     | | \ Merge: e0c702d 13d0896
3629
     | | / / Author: Nigel Schuster < Neitsch@users.noreply.github.com>
3630
    1/1
             Date: Sun Oct 23 18:23:11 2016 -0400
3631
3632
                 Merge branch 'master' into samples
3633
3634
             commit 13d089696d899b6c691b4c3af603e334fd462f04
            Merge: 9805753 3a2cd60
3635
3636
           | Author: Jared Samet < jared.samet@aya.yale.edu>
3637
            Date: Sun Oct 23 18:20:03 2016 -0400
3638
3639
                 Merge pull request #19 from Neitsch/sequence-operator
3640
3641
                 Sequence operator
3642
3643
              commit 3a2cd606ec6fd9bba26107ec9208b34f257d32d4
          \\ Merge: 57319c4 9805753
3644
3645
         // Author: Jared Samet < jared.samet@aya.yale.edu>
3646
                      Sun Oct 23 18:16:35 2016 -0400
               Date:
3647
3648
                  Merge branch 'master' into sequence-operator
3649
3650
             commit 57319c48db49a519a0f2a75f3abed55ece413df9
3651
             Author: oracleofnj <jared.samet@aya.yale.edu>
3652
             Date: Sun Oct 23 17:11:13 2016 -0400
3653
3654
                 Remove intermediate files
3655
3656
            commit 53824eaef49ae831e43ab5685b9e1fcea5fcd678
3657
             Author: oracleofnj <jared.samet@aya.yale.edu>
3658
             Date: Sun Oct 23 17:10:39 2016 -0400
3659
3660
                 Flip precedence of -> and ?: (?: is now lowest)
3661
3662
             commit 7dedf93f4ed468537317e5105eeb5a2b8f791aad
3663
         | | Author: oracleofnj <jared.samet@aya.yale.edu>
```

```
Date: Sun Oct 23 17:05:23 2016 -0400
3664
3665
3666
                Add sequence operator to scanner/parser/AST
3667
3668
            commit e0c702d18ceb98ce5ec03ffe49ed53534540fb0d
3669
            Author: Neitsch <ns3158@columbia.edu>
3670
            Date: Sun Oct 23 18:17:58 2016 -0400
3671
3672
                Fixed .gitignore
3673
        3674
            commit e42fe941b3c93b0cda424f01925754e2f12cbe43
3675
            Author: Neitsch <ns3158@columbia.edu>
            Date: Sun Oct 23 18:05:48 2016 -0400
3676
3677
3678
                Added code in LRM to test code samples
3679
3680
        *
             commit 9d2cd174bb0cddd3894d3e77ade8626a2700429c
3681
     | | | \ Merge: 167ddd2 9805753
3682
     | | _ | / Author: Neitsch <ns3158@columbia.edu>
3683
    1/1 1 1
             Date: Sun Oct 23 17:24:15 2016 -0400
3684
3685
                  Merge branch 'master' into samples
3686
3687 * | |
             commit 980575329d6ce70040a7911de284463f8c9ebf2f
        \ \ \ Merge: 3f015ee e0c7aed
3688
       // / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
3689
3690
     1/1
             Date: Sun Oct 23 17:01:31 2016 -0400
3691
3692
                  Merge pull request #17 from Neitsch/make-correction
3693
3694
                  Added simple TCs, Moved Makefile to oasis config
3695
3696
         | commit e0c7aed793ba6070ec94baa3bc52f009c5615c20
3697
         | Author: Neitsch <ns3158@columbia.edu>
3698
          Date: Sun Oct 23 16:59:33 2016 -0400
3699
3700
                Fixed test
3701
              commit ec3d682eeeecb8b1c20f35a746b65e503b7cdeb4
3702
     | |\ \ \ Merge: ea05658 3f015ee
3703
     | |/ / / Author: Nigel Schuster <Neitsch@users.noreply.github.com>
3704
3705
     1/1 1 1
             Date: Sun Oct 23 16:41:00 2016 -0400
3706
3707
                  Merge branch 'master' into make-correction
3708
3709 * | |
             commit 3f015eedeeda8af3aac5cb728d9e6258d6b7acda
    |\ \ \ Merge: d4961eb edf3dea
3710
       3711
3712
          | Date: Sun Oct 23 15:52:01 2016 -0400
3713
3714
                  Merge pull request #18 from Neitsch/grammar-bug-fixes
3715
3716
                  Modify grammar to allow [m,n] foo, bar, baz;
3717
3718
                commit edf3dead5be0840a9a80f407dcef8b63c898d14a
     | |\ \ \ Merge: b45718d d4961eb
3719
```

```
3720
    | | / / / Author: Jared Samet < jared.samet@aya.yale.edu>
                      Sun Oct 23 15:44:20 2016 -0400
3721
     1/1
                Date:
3722
3723
                    Merge branch 'master' into grammar-bug-fixes
3724
3725
           | commit b45718decc1b9e3816105722eebb39afa45dbc5a
3726
            | Author: oracleofnj <jared.samet@aya.yale.edu>
3727
            Date: Sun Oct 23 02:27:36 2016 -0400
3728
3729
                  Modify grammar to allow [m,n] foo, bar, baz;
3730
3731
            | commit ea056587ed93451542d5a5e67b9b993cba4a170f
3732
          | Author: Neitsch <ns3158@columbia.edu>
3733
          | | Date:
                     Sun Oct 23 16:40:24 2016 -0400
3734
3735
                 Moved sequence file
3736
3737
               commit 0ca56a0230a52c254d21724848c52ddc65350997
        * | |
3738
        |\ \ Merge: 9d1094e 7e558c1
3739
          | | Author: Neitsch <ns3158@columbia.edu>
3740
            | Date: Sun Oct 23 16:10:14 2016 -0400
3741
3742
                    Merge
3743
3744
                  commit 7e558c19a9d85c1dea38f9745b2915dcc14418b7
3745
          |\ \ Merge: 4652c67 d4961eb
3746
                 Author: Nigel Schuster <Neitsch@users.noreply.github.com>
3747
     1/| | | |
                  Date: Sun Oct 23 15:44:20 2016 -0400
3748
3749
                      Merge branch 'master' into make-correction
3750
3751 * | | | |
                  commit d4961eb9497ffe2abacb91b8ab5d09ebf2b714a9
3752
                  Merge: 143fcba 0e0bda5
3753
                  Author: Nigel Schuster <Neitsch@users.noreply.github.com>
3754
    1/1
                  Date: Sun Oct 23 15:43:16 2016 -0400
3755
3756
                      Merge pull request #15 from Neitsch/functions-doc
3757
3758
                      Functions doc
3759
3760
                  commit 0e0bda54deeafa312a3da9323d2ba2ff58dfdb79
3761
         | | | |
                  Merge: cfe827d 143fcba
3762
         /// Author: Nigel Schuster <Neitsch@users.noreply.github.com>
3763
     1/1
                  Date: Sun Oct 23 15:05:42 2016 -0400
3764
3765
                      Merge branch 'master' into functions-doc
3766
            | commit cfe827d4173deb1a3fff5719704eae3ff131a615
3767
3768
          | | Author: Nigel Schuster < nigel.schusters@googlemail.com>
3769
            | Date: Fri Oct 21 20:50:51 2016 -0400
3770
3771
                    Completed initial functions section doc
3772
3773
                  commit 1b610ac614b03b24e829084a6d245b0d99fad01f
      *
        3774
          \\\\ Merge: acb9b93 7542b5d
3775
```

3776		Date: Thu Oct 20 13:50:22 2016 -0400
3777		
3778		
3779		
3780	*	commit 7542b5d1866554d70bd312ae649cd1d86f459f12
3781		Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
3782		Date: Thu Oct 20 11:16:35 2016 -0400
3783		
3784		Added dimension section
3785 3786		
3787	*	
3788	-	- / Author: Nigel Schuster <nigel.schusters@googlemail.com> Date: Wed Oct 19 12:28:09 2016 -0400</nigel.schusters@googlemail.com>
3789		Date: Wed Oct 19 12:20:09 2010 -0400
3790		
3790		Started working on runctions
3792		
3793	"	Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
3794		Date: Thu Oct 20 13:40:00 2016 -0400
3795		
3796		Changed subsection header
3797	i i i i	
3798	*	commit b95d039ea41668404b9005f1a7eb19e686abb071
3799	iiii	Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
3800		Date: Thu Oct 20 11:16:35 2016 -0400
3801		
3802		Added dimension section
3803		
3804	*	commit 71b93bbd5cc99d7ebc3a8c5446b06d5b13ab96ac
3805		Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
3806		Date: Wed Oct 19 12:28:09 2016 -0400
3807		
3808		Started working on Functions
3809		
3810	*	commit 9d1094e62f36b4170d996ffb07dcb5ee769050f2
3811		Author: Neitsch <ns3158@columbia.edu></ns3158@columbia.edu>
3812		Date: Sun Oct 23 15:00:35 2016 -0400
3813 3814		Added simple TCs Moved Makefile to easis config
3815		Added simple TCs, Moved Makefile to oasis config
3816		
3817		Commit
3818		Date: Fri Oct 21 20:50:51 2016 -0400
3819		
3820		Completed initial functions section doc
3821		
3822	*	commit 0797f328f6f6f6e696a72b1222d4cab38f8e8507
3823	i i i i	Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
3824	i i i	Date: Thu Oct 20 13:40:00 2016 -0400
3825		
3826		Changed subsection header
3827		
3828	*	commit 9df31f7322f58cbc1b14ea9740b102750e0321ae
3829		Author: Nigel Schuster <nigel.schusters@googlemail.com></nigel.schusters@googlemail.com>
3830		Date: Thu Oct 20 11:16:35 2016 -0400
3831		

```
3832
                 Added dimension section
3833
3834
                 commit 8939903db79ed9de1a8e4b97fc02e79b4be54b61
3835
                 Author: Nigel Schuster <nigel.schusters@googlemail.com>
3836
                Date: Wed Oct 19 12:28:09 2016 -0400
3837
3838
                     Started working on Functions
3839
3840
               commit cae3b37031dc87451ff03790eb6321dce42c516b
3841
               Author: Nigel Schuster <nigel.schusters@googlemail.com>
3842
                        Thu Oct 20 11:16:35 2016 -0400
                Date:
3843
3844
                     Added dimension section
3845
         | * | | commit 049c95d512ce6e6e8e48d4b2c838fd06df40b619
3846
3847
      |_|/ / / Author: Nigel Schuster <nigel.schusters@googlemail.com>
3848
                Date: Wed Oct 19 12:28:09 2016 -0400
3849
3850
                     Started working on Functions
3851
3852
           * commit 167ddd2addae79549eb6d887b98bee35cf2cc4cf
3853
           | Author: Neitsch <ns3158@columbia.edu>
3854
            Date: Sun Oct 23 17:18:35 2016 -0400
3855
3856
                   Removed test output
3857
           * commit 84d20b5448f24b98f308c1fb319f213de230d4f1
3858
           // Author: Neitsch <ns3158@columbia.edu>
3859
3860
              Date: Sun Oct 23 16:01:00 2016 -0400
3861
3862
                   Comparing sample code with correctly parsed code in samples_comp
3863
3864
        * commit 4652c6727f848dd573a44509fb498729b28b3080
3865
     | | _ | / Author: Neitsch <ns3158@columbia.edu>
             Date: Sun Oct 23 15:00:35 2016 -0400
3866
     1/1
3867
3868
                 Added simple TCs, Moved Makefile to oasis config
3869
3870
             commit 143fcba457b49d2c4ab1495d17b830534554508e
3871
             Merge: 660de8c a726236
3872
             Author: Jared Samet < jared.samet@aya.yale.edu>
3873
             Date: Sat Oct 22 23:23:10 2016 -0400
3874
3875
                 Merge pull request #16 from Neitsch/more—AST
3876
3877
                 Hook up scanner and parser
3878
             commit a7262368b391c2031c66cfcf1d9fd6224749be69
3879
3880
             Author: oracleofnj <jared.samet@aya.yale.edu>
             Date: Sat Oct 22 20:51:27 2016 -0400
3881
3882
3883
                 Add comments and sample program
3884
3885
                 * Added multiline comments using microC code
3886
                 * Added one-line comments but didn't test it yet
3887
                * Added example file sequence.xtnd which is the program from proposal
```

```
3888
3889
                  To try:
3890
3891
                  $ make
3892
                  $ ./jsonify < sequence.xtnd</pre>
3893
3894
                 paste output into https://jqplay.org/
3895
             commit 8db40989c4efe4ecefdb8409d45fe8347adc0c79
3896
3897
             Author: oracleofnj <jared.samet@aya.yale.edu>
             Date: Sat Oct 22 19:44:48 2016 -0400
3898
3899
3900
                 Fix minor grammar bug
3901
3902
                  * foo[:4,:5] was not being accepted
3903
                  * Added rules to Islice and rslice to allow this
3904
3905
             commit 80754c3f3072609502c902d6d26c2e6c33885a84
3906
     // / Author: oracleofnj <jared.samet@aya.yale.edu>
3907
             Date: Sat Oct 22 18:19:27 2016 -0400
3908
3909
                 Hook up scanner and parser
3910
3911
                 * Added hand coded jsonification
3912
                  * Didn't look like Yojson would work with our types
3913
                 * Currently not working on any input besides EOF
3914
                  * Added temporary makefile
3915
3916 * | commit 660de8c848406e8f5fffe099610b6147bc553cad
3917
          Author: Jared Samet < jared.samet@aya.yale.edu>
           Date: Sat Oct 22 13:54:32 2016 -0400
3918
3919
3920
               Add stuff to the grammar, minor corrections (#14)
3921
3922
               * Started AST
3923
3924
               * Made scanner
3925
3926
               * Fixed bug in scanner
3927
3928
               * Update scanner.mll
3929
3930
               * Add stuff to the grammar, minor corrections
3931
3932
               Operators, in order of precedence (lowest first)
3933
                * LOGOR ||
3934
                * LOGAND &&
3935
                * EQ NOTEQ LT GT LTEQ GTEQ == != < > <= >=
                * PLUS MINUS BITOR BITXOR + -\mid ^
3936
3937
                * TIMES DIVIDE MOD LSHIFT RSHIFT BITAND * / % <<>>> &
3938
                * POWER **
                * BITNOT LOGNOT NEG ~ ! -
3939
3940
                * I took the precedence from Golang
3941
3942
               String and char literals
               New token ASN which is = (as opposed to EQ ==)
3943
```

```
3944
3945
               Range literals
3946
               * {1, 2, 3; 4, 5, 6} is a 2x3 range
3947
                * \{foo(1); bar(2)\} should work too
3948
                * The semantic analysis phase will be responsible
3949
                   for ensuring that the dimensions make sense
3950
                * Had to add mandatory parentheses to switch(cond) to
3951
                    avoid shift/reduce conflicts but C has that anyway
3952
3953
               * Allow general expr slicing, imports and globals
3954
               * New HASH token #
3955
               * New IMPORT and GLOBAL tokens ("import", "global")
3956
3957
               Expr slicing:
3958
               * rls_sel no longer -> epsilon
3959
               * replaced by expr -> expr rhs_sel, expr -> ID, expr -> HASH expr
3960
3961
               Import:
3962
               * import "othermodule";
3963
3964
               Global variables:
3965
                * global PI := 3.14159;
3966
                * global [3,5] foo; is legal but has no effect
3967
3968
               Program structure:
                * imports followed by globals followed by functions
3969
3970
                * This should theoretically be mix-and-matchable without much more work
3971
3972
               Size inference:
3973
               * foo := "Hello, world!" right now results in [1,1] foo == "H"
3974
               * Semantic not grammar issue
3975
3976
               * Fix error in col_list production
3977
3978
               * Remove intermediate files
3979
               * Remove intermediate files
3980
3981
3982
               * Rework AST
3983
           commit a15772cba8b1fd16e7d21da07ec9b89d34b3062e
3984
3985
          Merge: d8794e9 dee63c7
3986
          Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
3987
           Date: Thu Oct 20 13:38:08 2016 -0400
     1/1
3988
3989
               Merge pull request #10 from ishaankolluri/LRM
3990
3991
               Initial LRM Commit
3992
3993
           commit dee63c70c8c9e7396e255662c302f3d77a7bf7db
3994
          Merge: 4d763cb dc93dbf
           Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
3995
3996
           Date: Thu Oct 20 13:26:28 2016 -0400
3997
3998
               Merge pull request #1 from Neitsch/grammar-doc
3999
```

```
4000
          Grammar import
4001
4002
       * commit dc93dbfa68ff7ee65eb38ce8a26baf081da0fe30
4003
       // Author: Nigel Schuster <nigel.schusters@googlemail.com>
4004
          Date: Thu Oct 20 13:18:29 2016 -0400
4005
4006
              Grammar import
4007
     * commit 4d763cbd2505f38028dc9ba820c02aea2b66a380
4008
4009
       Author: Ishaan Kolluri <ishaankolluri@gmail.com>
4010
                Thu Oct 20 12:21:21 2016 -0400
       Date:
4011
4012
            Made refactor and edits to intro section of LRM
4013
4014
          commit e7443cc478f120ea4aff5db91f7dbfa55e94c4b4
4015
       |\ Merge: 02a5c17 40c2a5a
4016
         | Author: Ishaan Kolluri <ishaankolluri@gmail.com>
4017
       | Date: Thu Oct 20 11:46:54 2016 -0400
4018
4019
              Merging
4020
4021
     | | * commit 40c2a5aa75310086dbcfab58eaa1e3ce86ccbe72
4022
     4023
          Date: Wed Oct 19 03:43:06 2016 -0400
4024
4025
              Initial LRM Commit part 1
4026
     * commit 02a5c175a1032b34fbf0f1726596270d934aec11
4027
4028
     // Author: Ishaan Kolluri <ishaankolluri@gmail.com>
4029
        Date: Tue Oct 18 18:38:21 2016 -0400
4030
4031
            Added LRM initial info
4032
4033 *
       commit d8794e96f4544ed0af9678ecb55e83e1e4b46c25
    |\ Merge: 5111202 70aa1b9
4034
4035
       Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
4036
       Date: Mon Oct 17 19:47:42 2016 -0400
4037
4038
            Merge pull request #9 from Neitsch/documentation
4039
4040
            Added PDF Latex template
4041
     * commit 70aa1b9846e135d1e8e3f2159148d1bc4e9ea0d8
4042
4043
    // Author: Nigel Schuster <nigel.schusters@googlemail.com>
        Date: Sun Oct 16 13:36:23 2016 -0400
4044
4045
4046
            Added PDF Latex template
4047
4048 * commit 5111202a9f0992d7b5a3f934f4109552064df4e1
4049
     Author: Jared Samet < jared.samet@aya.yale.edu>
      Date: Fri Oct 14 19:59:45 2016 -0400
4050
4051
4052
          Added a bunch of stuff to the grammar: (#8)
4053
4054
           * Cleaned up the existing token list
4055
          ** Removed a couple duplicates/unused that menhir flagged
```

```
4056
           ** Added PLUS MINUS TIMES DIVIDE MOD
4057
           ** Added SWITCH CASE DEFAULT
4058
           ** Added UNDERSCORE (for [_,2] in function declaration)
4059
           ** Separated LITERAL into LIT_INT and LIT_FLOAT (dimensions can
4060
                   only be integers)
4061
           ** Added a couple associativity/precedence rules that
4062
                   are undoubtedly incomplete
4063
4064
           * Made hopefully all the optional / repetition cases consistent
           ** Function declarations [] foo() {}
4065
                                                  [] bar() {}
4066
           ** Function parameters () ([] foo) ([]foo, []bar), ...
           ** Statements stmt1; stmt2; \dots
4067
4068
           ** Function arguments (), (foo), (foo, bar), ...
4069
           ** Switch cases (>=1 required) case fool: barl; case foo2: bar2; ...
4070
           ** Case conditions (>=1 required) case fool, foo2, ...
4071
4072
           * Added a few expression types
4073
           ** switch [expr] {case foo_la, foo_lb: bar1; case foo_2: bar2}
4074
           *** intended to work as in Go: if condition is present, evaluates
4075
           *** to first case where foo == expr. if condition is absent, evaluates
4076
           *** to first case where foo is truthy.
4077
           ** function calls foo(x,y,z)
4078
           ** expression in parentheses
           ** literals
4079
4080
4081
           * Slicing
4082
           ** Refactored slice_val into lslice_val and rslice_val
4083
           ** lslice_val can be any expr
4084
           ** rslice_val can be any expr or [expr]
4085
           ** both types of selections and slices are now consistent until
4086
                   you get down to val
4087
4088
           * Function return dimensions
4089
           ** Added _ to the allowed return dimension (for [_,2])
4090
4091 * commit da967e421b3f6887acd7c0d659f13d60b1898b6a
     Author: Nigel Schuster <Neitsch@users.noreply.github.com>
4092
       Date: Wed Oct 12 13:24:50 2016 -0400
4093
4094
4095
           CFG Grammar (#6)
4096
4097
           Added simple parser that has most of our rules.
4098
4099 * commit fea4e4b262513b011775899f35d17e29cb7a1642
4100 | Author: Nigel Schuster <Neitsch@users.noreply.github.com>
4101
     Date: Sat Oct 8 11:42:39 2016 -0400
4102
4103
           There is no need to constantly build all branches. (#2)
4104
4105
           Only building master.
4106
4107
     * commit 7a5ccfc7ada9ddefba61d5da995a7949d7fd1e9d
4108
       Author: Jared Samet <jared.samet@aya.yale.edu>
4109
       Date: Sat Oct 8 11:31:31 2016 -0400
4110
4111
     Added greeting and newlines (#4)
```

```
4112
4113 * commit 10b17f7772e4f7521d248b9656a917df781d96a4
4114
     Author: Nigel Schuster <Neitsch@users.noreply.github.com>
4115
       Date: Sat Oct 8 11:31:08 2016 -0400
4116
4117
           Imported microc (#5)
4118
4119
           * Imported microc
4120
           * Fixed sources
4121
4122 * commit 726456fcc25a785cc26d90845b8c0c6292fec61f
4123
    | Author: Ishaan Kolluri <ishaankolluri@users.noreply.github.com>
       Date: Tue Sep 20 09:45:07 2016 -0400
4124
4125
4126
          [test] Add sample greeting to repo (#3)
4127
4128
           * Added sample greeting
4129
4130
           * Add double semicolon notation
4131
4132 * commit 9a2183d3439d67d696ec6babcb6c2be233c2f3bd
4133 | Author: Nigel Schuster <nigel.schusters@googlemail.com>
4134
    Date: Thu Sep 15 18:44:00 2016 -0400
4135
4136
           Added merlin config
4137
4138 * commit 163e1761ac0f8113e017511f456029282e665d8b
4139
     Author: Nigel Schuster <nigel.schusters@googlemail.com>
4140
     Date: Wed Sep 14 18:51:53 2016 -0400
4141
4142
           Moved whole build to script
4143
4144 * commit d401eeaab71e5e927932c403be099e24700cdc8f
4145 | Author: Nigel Schuster <nigel.schusters@googlemail.com>
    Date: Wed Sep 14 18:43:58 2016 -0400
4146
4147
4148
           Added oasis opam package
4149
4150 * commit ba7fd9c3ccaa617d0709b395da84b43cca2c1860
4151
     Author: Nigel Schuster <nigel.schusters@googlemail.com>
     Date: Wed Sep 14 18:38:58 2016 -0400
4152
4153
4154
           Added ocaml configure (maybe this helps travis)
4155
4156 * commit a461eaea15fdf84b3a580af6cfa46451ab490b31
4157 | Author: Nigel Schuster <nigel.schusters@googlemail.com>
    | Date: Wed Sep 14 18:26:10 2016 -0400
4158
4159
4160
           Configuring opam environment for travis
4161
4162 * commit ba2df2f48c360588df163b22ad674297e3ae8b16
4163
     Author: Nigel Schuster <nigel.schusters@googlemail.com>
4164
       Date: Wed Sep 14 18:19:26 2016 -0400
4165
4166
           Added ocaml native compiler to apt package list
4167
```

```
4168 * commit a8e5958abf68181b0a7b4e7995a2cd7044de3bd4
     Author: Nigel Schuster <nigel.schusters@googlemail.com>
4170
     Date: Wed Sep 14 17:24:36 2016 -0400
4171
4172
           Added some more (possibly necessary opam packages
4173
4174 * commit c54f5e367d0d985d54bf89630e51a59203f91065
4175 | Author: Nigel Schuster <nigel.schusters@googlemail.com>
    Date: Wed Sep 14 17:18:32 2016 -0400
4176
4177
4178
          Missed opam option
4179
4180 * commit b10adf0f2964eff28de9f33618806e7d614573fc
     | Author: Nigel Schuster < nigel.schusters@googlemail.com>
     Date: Wed Sep 14 17:13:57 2016 -0400
4182
4183
4184
          Fixed opam install
4185
4186 * commit 124f7f37083351df7beaed11cc77d503b1ff0d9b
4187 | Author: Nigel Schuster <nigel.schusters@googlemail.com>
4188 | Date: Wed Sep 14 17:08:09 2016 -0400
4189
4190
          Fixed YML error
4191
4192 * commit 4909fa82e010b27f9dc0f2489ebf5cadc790e4e3
4193
     | Author: Nigel Schuster < nigel.schusters@googlemail.com>
4194
      Date: Wed Sep 14 17:03:54 2016 -0400
4195
4196
           Using avsm source
4197
4198 * commit 4b24046db1b50e97bac103170056c77be7273155
4199 | Author: Nigel Schuster <nigel.schusters@googlemail.com>
4200 | Date: Wed Sep 14 16:58:33 2016 -0400
4201
4202
           Allow sudo
4203
4204 * commit e7b50dbb8b2c463fa67f9ce07b6a8413f905b259
4205
    | Author: Nigel Schuster < nigel.schusters@googlemail.com>
4206
       Date: Wed Sep 14 16:56:57 2016 -0400
4207
4208
           Fixed setup order
4209
4210 * commit f6d7ac43f5f27fc4c641667bfe8e24ea3b0d7117
4211 | Author: Nigel Schuster <nigel.schusters@googlemail.com>
4212 | Date: Wed Sep 14 16:50:02 2016 -0400
4213
4214
          Manually installing apt packages
4215
4216 * commit f4084ab464f4f3097d11e0582328f351c40d9516
     | Author: Nigel Schuster <nigel.schusters@googlemail.com>
4217
4218
       Date: Wed Sep 14 16:40:55 2016 -0400
4219
4220
           Test commit
4221
4222 * commit d7c5e9a4dadd09c6d7ad97fc727f61aff1e88779
4223
    Author: Nigel Schuster <Neitsch@users.noreply.github.com>
```

4224 Date: Wed Sep 14 13:15:43 2016 -0400 4225 4226 Initial commit

4. Testing

Due to Extend being a large undertaking, we took steps to ensure that all features were working as the design of the language intended.

This was done through implementing test cases that isolated specific aspects of the Extend language to ensure that each feature worked correctly. For basic components, we wrote a plethora of tests to illustrate functionality. For undertakings that required more debate on the design of the language, other tests were created and modified throughout development.

4.1 Feature Integration & Testing

Development of new features naturally means that they must be deemed legal by the scanner, parser, semantic analyzer, and code generator. As we developed new features, the process was roughly as follows:

- 1. Write a simple test that illustrated the feature to test.
- 2. Write the expected output of the aforementioned test to a text file.
- 3. Confirm that the scanner consumes the tokens related to the feature.
- 4. Confirm that the parser grammar has been adjusted to accommodate the new feature.
- 5. Confirm that the semantic analyzer and transformer can properly identify and check the new feature code.
- 6. Confirm that code generation generates the appropriate LLVM IR for the new features such as allocating memory, building calls, and more.
- 7. Ensure that the test written can write its output to stdout, to be compared with expected output.
- 8. Compile and test the code to ensure that the code has worked to the team's expectations.

Earlier in the development process, we tested the front end of our compiler by JSON-ifying the abstract syntax tree and examining it. As we settled into full-fledged development, we would test with a full-fledged regression test suite.

4.2 Regression Test Suite

Extend's regression test suite is executable through the testscript.sh script at the top level of the project. There are over 100 integration test files for various features of the Extend language, and a corresponding file with their expected output to stdout. This is to ensure that the successful implementation of one feature does not impact that of others.

The test script iterates through every test file in the inputs_regression directory. It compiles and executes the test, and compares it with the corresponding expected output file living in the expected directory.

Some of these tests were "passing" tests, meant to confirm successful output, and some were "failing" tests, identifying the ability of the language to detect illegal actions and exit gracefully.

Note: We have added a full test listing at the end of this document. Please refer to the chapter titled "Test Listing" for more detail.

Integration with Travis CI

The aforementioned test suite is run by Travis CI in the event that the Extend compiler is successfully built; otherwise, the build will fail and exit. In our development workflow, checking the logs during build failures sometimes revealed that tests in the regression test suite did not succeed as expected. This integration kept the far-reaching effects of newly introduced features entirely transparent throughout the process.