```
 1 "G:\Fall 2021\Compilers\venv\Scripts\python.exe" "G:/
   Fall 2021/Compilers/Scanner/Parser Submission/
   GrammarScript.py"
 2
 3
 4
 5
 6
 7
 8
 9 Ricky Tan Grammar Submission
10 Currently at Token number  0
11 ('library', '#include<math.h>', '\n')
12  non MATCH-----
13 FIRING PRODUCTION 0 <program> ->['<libtoken>', '<
   libtoken_tail>', '<start>']
14 Push <start> Push <libtoken_tail> Push <libtoken>
   STACK
15 ['$', '<start>', '<libtoken_tail>', '<libtoken>']
16
17 Currently at Token number  0
18 ('library', '#include<math.h>', '\n')
19  non MATCH-----
20 FIRING PRODUCTION 4 <libtoken> ->['library']
21 Push library STACK
22 ['$', '<start>', '<libtoken_tail>', 'library']
23
24 Currently at Token number  0
25 ('library', '#include<math.h>', '\n')
26 MATCH----- POPPING
27 STACK
28 ['$', '<start>', '<libtoken_tail>']
29 Currently at Token number  1
30 ('library', '#include<string>', '\n')
31  non MATCH-----
32 FIRING PRODUCTION 2 <libtoken_tail> ->['<libtoken
   >', 'LAMBDA']
33 Push LAMBDA Push <libtoken> STACK
34 ['$', '<start>', 'LAMBDA', '<libtoken>']
35
36 Currently at Token number  1
```

```
37 ('library', '#include<string>', '\n')
38  non MATCH-----
39 FIRING PRODUCTION 4 <libtoken> ->['library']
40 Push library STACK
41 ['$', '<start>', 'LAMBDA', 'library']
42
43 Currently at Token number  1
44 ('library', '#include<string>', '\n')
45 MATCH----- POPPING
46 STACK
47 ['$', '<start>', 'LAMBDA']
48 Currently at Token number  2
49 ('library', '#include<iostream.h>', '\n')
50 MATCH----- POPPING
51 STACK
52 ['$', '<start>']
53 Currently at Token number  3
54 ('library', '#include"mylib.h"', '\n')
55  non MATCH-----
56 FIRING PRODUCTION 5 <start> ->['<code>', 'LAMBDA']
57 Push LAMBDA Push <code> STACK
58 ['$', 'LAMBDA', '<code>']
59
60 Currently at Token number  3
61 ('library', '#include"mylib.h"', '\n')
62  non MATCH-----
63 FIRING PRODUCTION 7 <code> ->['program', 'id
   ', ';', '<vars>', '<main>', '<end>']
64 Push <end> Push <main> Push <vars> Push ; Push id
   Push program STACK
65 ['$', 'LAMBDA', '<end>', '<main>', '<vars>', ';', 'id
   ', 'program']
66
67 Currently at Token number  3
68 ('library', '#include"mylib.h"', '\n')
69 MATCH----- POPPING
70 STACK
71 ['$', 'LAMBDA', '<end>', '<main>', '<vars>', ';', 'id
   ']
72 Currently at Token number  4
73 ('comment', '//includelibraryfunctions', '\n')
```

```
 74 Comment, skipped
 75 Currently at Token number  5
 76 ('comment', '//usingnamespacestd', ';')
 77 Comment, skipped
 78 Currently at Token number  6
 79 ('comment', '{*HELLO{HELLOusingnamespacestd}}*}', '\
    n')
 80 Comment, skipped
 81 Currently at Token number  7
 82 ('comment', '{*HELLO*}')
 83 Comment, skipped
 84 Currently at Token number  8
 85 ('comment', '{*HELLOusingnamespacestd*}', '\n')
 86 Comment, skipped
 87 Currently at Token number  9
 88 ('comment', '/*
    mergeusingnamespacestdMULTILINECOMMENTstrings*/', '\
    n')
 89 Comment, skipped
 90 Currently at Token number  10
 91 program
 92 MATCH----- POPPING
 93 STACK
 94 ['$', 'LAMBDA', '<end>', '<main>', '<vars>', ';']
 95 Currently at Token number  11
 96 ('ID', 'test1', ';')
 97 MATCH----- POPPING
 98 STACK
 99 ['$', 'LAMBDA', '<end>', '<main>', '<vars>']
100 Currently at Token number  12
101 var
102  non MATCH-----
103 FIRING PRODUCTION 8 <vars> ->['<var>', '<var_type
    >', ':', 'p_type', ';', '<var_type_tail>']
104 Push <var_type_tail> Push ; Push p_type Push : Push
     <var_type> Push <var> STACK
105 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type', ':', '<var_type>', '<var>']
106
107 Currently at Token number  12
108 var
```

```
109  non MATCH-----
110 FIRING PRODUCTION 14 <var> ->['id']
111 Push id STACK
112 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type', ':', '<var_type>', 'id']
113
114 Currently at Token number  12
115 var
116 MATCH----- POPPING
117 STACK
118 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type', ':', '<var_type>']
119 Currently at Token number  13
120 ('ID', 'arm')
121  non MATCH-----
122 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
123 Push <var_tail> Push <var> STACK
124 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type', ':', '<var_tail>', '<var>']
125
126 Currently at Token number  13
127 ('ID', 'arm')
128  non MATCH-----
129 FIRING PRODUCTION 14 <var> ->['id']
130 Push id STACK
131 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type', ':', '<var_tail>', 'id']
132
133 Currently at Token number  13
134 ('ID', 'arm')
135 MATCH----- POPPING
136 STACK
137 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type', ':', '<var_tail>']
138 Currently at Token number  14
139 ('ID', 'leg', ':')
140  non MATCH-----
141 FIRING PRODUCTION 12 <var_tail> ->['<var>']
142 Push <var> STACK
143 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
```

```
143 >', ';', 'p_type', ':', '<var>']
144
145 Currently at Token number  14
146 ('ID', 'leg', ':')
147  non MATCH-----
148 FIRING PRODUCTION 14 <var> ->['id']
149 Push id STACK
150 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type', ':', 'id']
151
152 Currently at Token number  14
153 ('ID', 'leg', ':')
154 MATCH----- POPPING
155 STACK
156 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type', ':']
157 Currently at Token number  15
158 currency
159 MATCH----- POPPING
160 STACK
161 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'p_type']
162 Currently at Token number  16
163 ('comment', '//currency', '\n')
164 Comment, skipped
165 Currently at Token number  17
166 ('ID', 'a')
167 MATCH----- POPPING
168 STACK
169 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';']
170 Currently at Token number  18
171 ('ID', 'b')
172 MATCH----- POPPING
173 STACK
174 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
175 Currently at Token number  19
176 ('ID', 'ab', ':')
177  non MATCH-----
178 FIRING PRODUCTION 9 <var_type_tail> ->['<var_type
```

```
178 >', ':', '<ptype>', ';', '<var_type_tail>']
179 Push <var_type_tail> Push ; Push <ptype> Push : Push
     <var_type> STACK
180 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_type>']
181
182 Currently at Token number  19
183 ('ID', 'ab', ':')
184  non MATCH-----
185 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
186 Push <var_tail> Push <var> STACK
187 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', '<var>']
188
189 Currently at Token number  19
190 ('ID', 'ab', ':')
191  non MATCH-----
192 FIRING PRODUCTION 14 <var> ->['id']
193 Push id STACK
194 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', 'id']
195
196 Currently at Token number  19
197 ('ID', 'ab', ':')
198 MATCH----- POPPING
199 STACK
200 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>']
201 Currently at Token number  20
202 string
203  non MATCH-----
204 FIRING PRODUCTION 12 <var_tail> ->['<var>']
205 Push <var> STACK
206 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var>']
207
208 Currently at Token number  20
209 string
210  non MATCH-----
211 FIRING PRODUCTION 14 <var> ->['id']
```

```
212 Push id STACK
213 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', 'id']
214
215 Currently at Token number  20
216 string
217 MATCH----- POPPING
218 STACK
219 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':']
220 Currently at Token number  21
221 ('comment', '//stringvariables', '\n')
222 Comment, skipped
223 Currently at Token number  22
224 ('ID', 'c')
225 MATCH----- POPPING
226 STACK
227 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>']
228 Currently at Token number  23
229 ('ID', 'd')
230  non MATCH-----
231 FIRING PRODUCTION 15 <ptype> ->['int']
232 Push int STACK
233 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'int']
234
235 Currently at Token number  23
236 ('ID', 'd')
237 MATCH----- POPPING
238 STACK
239 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';']
240 Currently at Token number  24
241 ('ID', 'cd', ':')
242 MATCH----- POPPING
243 STACK
244 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
245 Currently at Token number  25
246 ('ID', 'int', ';')
```

```
247  non MATCH-----
248 FIRING PRODUCTION 9 <var_type_tail> ->['<var_type
    >', ':', '<ptype>', ';', '<var_type_tail>']
249 Push <var_type_tail> Push ; Push <ptype> Push : Push
     <var_type> STACK
250 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_type>']
251
252 Currently at Token number  25
253 ('ID', 'int', ';')
254  non MATCH-----
255 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
256 Push <var_tail> Push <var> STACK
257 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', '<var>']
258
259 Currently at Token number  25
260 ('ID', 'int', ';')
261  non MATCH-----
262 FIRING PRODUCTION 14 <var> ->['id']
263 Push id STACK
264 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', 'id']
265
266 Currently at Token number  25
267 ('ID', 'int', ';')
268 MATCH----- POPPING
269 STACK
270 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>']
271 Currently at Token number  26
272 ('comment', '//integervariables', '\n')
273 Comment, skipped
274 Currently at Token number  27
275 ('ID', 'e')
276  non MATCH-----
277 FIRING PRODUCTION 12 <var_tail> ->['<var>']
278 Push <var> STACK
279 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var>']
```

```
280
281 Currently at Token number  27
282 ('ID', 'e')
283  non MATCH-----
284 FIRING PRODUCTION 14 <var> ->['id']
285 Push id STACK
286 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', 'id']
287
288 Currently at Token number  27
289 ('ID', 'e')
290 MATCH----- POPPING
291 STACK
292 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':']
293 Currently at Token number  28
294 ('ID', 'goo', ':')
295 MATCH----- POPPING
296 STACK
297 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>']
298 Currently at Token number  29
299 ('ID', 'real', ';')
300  non MATCH-----
301 FIRING PRODUCTION 15 <ptype> ->['int']
302 Push int STACK
303 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'int']
304
305 Currently at Token number  29
306 ('ID', 'real', ';')
307 MATCH----- POPPING
308 STACK
309 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';']
310 Currently at Token number  30
311 ('comment', '//floattype', '\n')
312 Comment, skipped
313 Currently at Token number  31
314 start
315 MATCH----- POPPING
```

```
316 STACK
317 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
318 Currently at Token number  32
319 ('comment', '//startofthemaincode', '\n')
320 Comment, skipped
321 Currently at Token number  33
322 ('ID', 'a', ':')
323  non MATCH-----
324 FIRING PRODUCTION 9 <var_type_tail> ->['<var_type
    >', ':', '<ptype>', ';', '<var_type_tail>']
325 Push <var_type_tail> Push ; Push <ptype> Push : Push
     <var_type> STACK
326 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_type>']
327
328 Currently at Token number  33
329 ('ID', 'a', ':')
330  non MATCH-----
331 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
332 Push <var_tail> Push <var> STACK
333 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', '<var>']
334
335 Currently at Token number  33
336 ('ID', 'a', ':')
337  non MATCH-----
338 FIRING PRODUCTION 14 <var> ->['id']
339 Push id STACK
340 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', 'id']
341
342 Currently at Token number  33
343 ('ID', 'a', ':')
344 MATCH----- POPPING
345 STACK
346 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>']
347 Currently at Token number  34
348 ('STRING', '"hello"', ';')
```

```
349  non MATCH-----
350 FIRING PRODUCTION 12 <var_tail> ->['<var>']
351 Push <var> STACK
352 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var>']
353
354 Currently at Token number  34
355 ('STRING', '"hello"', ';')
356  non MATCH-----
357 FIRING PRODUCTION 14 <var> ->['id']
358 Push id STACK
359 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', 'id']
360
361 Currently at Token number  34
362 ('STRING', '"hello"', ';')
363 MATCH----- POPPING
364 STACK
365 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':']
366 Currently at Token number  35
367 ('ID', 'b', ':')
368 MATCH----- POPPING
369 STACK
370 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>']
371 Currently at Token number  36
372 ('STRING', '"world"', ';')
373  non MATCH-----
374 FIRING PRODUCTION 15 <ptype> ->['int']
375 Push int STACK
376 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'int']
377
378 Currently at Token number  36
379 ('STRING', '"world"', ';')
380 MATCH----- POPPING
381 STACK
382 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';']
383 Currently at Token number  37
```

```
384 ('ID', 'ab', ':')
385 MATCH----- POPPING
386 STACK
387 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
388 Currently at Token number  38
389 ('ID', 'a')
390  non MATCH-----
391 FIRING PRODUCTION 9 <var_type_tail> ->['<var_type
    >', ':', '<ptype>', ';', '<var_type_tail>']
392 Push <var_type_tail> Push ; Push <ptype> Push : Push
     <var_type> STACK
393 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_type>']
394
395 Currently at Token number  38
396 ('ID', 'a')
397  non MATCH-----
398 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
399 Push <var_tail> Push <var> STACK
400 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', '<var>']
401
402 Currently at Token number  38
403 ('ID', 'a')
404  non MATCH-----
405 FIRING PRODUCTION 14 <var> ->['id']
406 Push id STACK
407 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', 'id']
408
409 Currently at Token number  38
410 ('ID', 'a')
411 MATCH----- POPPING
412 STACK
413 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>']
414 Currently at Token number  39
415 ('ID', 'b', ';')
416  non MATCH-----
```

```
417 FIRING PRODUCTION 12 <var_tail> ->['<var>']
418 Push <var> STACK
419 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var>']
420
421 Currently at Token number  39
422 ('ID', 'b', ';')
423  non MATCH-----
424 FIRING PRODUCTION 14 <var> ->['id']
425 Push id STACK
426 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', 'id']
427
428 Currently at Token number  39
429 ('ID', 'b', ';')
430 MATCH----- POPPING
431 STACK
432 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':']
433 Currently at Token number  40
434 ('comment', '/*mergestrings*/', '\n')
435 Comment, skipped
436 Currently at Token number  41
437 ('ID', 'c', ':')
438 MATCH----- POPPING
439 STACK
440 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>']
441 Currently at Token number  42
442 ('INTEGER', '543', ';')
443  non MATCH-----
444 FIRING PRODUCTION 15 <ptype> ->['int']
445 Push int STACK
446 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'int']
447
448 Currently at Token number  42
449 ('INTEGER', '543', ';')
450 MATCH----- POPPING
451 STACK
452 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
```

```
452 >', ';']
453 Currently at Token number  43
454 ('ID', 'd', ':')
455 MATCH----- POPPING
456 STACK
457 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
458 Currently at Token number  44
459 ('INTEGER', '120')
460  non MATCH-----
461 FIRING PRODUCTION 9 <var_type_tail> ->['<var_type
    >', ':', '<ptype>', ';', '<var_type_tail>']
462 Push <var_type_tail> Push ; Push <ptype> Push : Push
     <var_type> STACK
463 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_type>']
464
465 Currently at Token number  44
466 ('INTEGER', '120')
467  non MATCH-----
468 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
469 Push <var_tail> Push <var> STACK
470 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', '<var>']
471
472 Currently at Token number  44
473 ('INTEGER', '120')
474  non MATCH-----
475 FIRING PRODUCTION 14 <var> ->['id']
476 Push id STACK
477 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', 'id']
478
479 Currently at Token number  44
480 ('INTEGER', '120')
481 MATCH----- POPPING
482 STACK
483 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>']
484 Currently at Token number  45
```

```
485 ('INTEGER', '345', ';')
486  non MATCH-----
487 FIRING PRODUCTION 12 <var_tail> ->['<var>']
488 Push <var> STACK
489 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var>']
490
491 Currently at Token number  45
492 ('INTEGER', '345', ';')
493  non MATCH-----
494 FIRING PRODUCTION 14 <var> ->['id']
495 Push id STACK
496 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', 'id']
497
498 Currently at Token number  45
499 ('INTEGER', '345', ';')
500 MATCH----- POPPING
501 STACK
502 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':']
503 Currently at Token number  46
504 ('ID', 'leg', '=')
505 MATCH----- POPPING
506 STACK
507 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>']
508 Currently at Token number  47
509 ('currency', '$12,123.05', ';')
510  non MATCH-----
511 FIRING PRODUCTION 15 <ptype> ->['int']
512 Push int STACK
513 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'int']
514
515 Currently at Token number  47
516 ('currency', '$12,123.05', ';')
517 MATCH----- POPPING
518 STACK
519 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';']
```

520 Currently at Token number 48
521 ('ID', 'cd', ':')
522 MATCH----- POPPING
523 STACK
524 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
525 Currently at Token number 49
526 ('ID', 'c')
527 non MATCH-----
528 FIRING PRODUCTION 9 <var_type_tail> ->['<var_type
    >', ':', '<ptype>', ';', '<var_type_tail>']
529 Push <var_type_tail> Push ; Push <ptype> Push : Push
     <var_type> STACK
530 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_type>']
531
532 Currently at Token number 49
533 ('ID', 'c')
534 non MATCH-----
535 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
536 Push <var_tail> Push <var> STACK
537 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', '<var>']
538
539 Currently at Token number 49
540 ('ID', 'c')
541 non MATCH-----
542 FIRING PRODUCTION 14 <var> ->['id']
543 Push id STACK
544 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', 'id']
545
546 Currently at Token number 49
547 ('ID', 'c')
548 MATCH----- POPPING
549 STACK
550 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>']
551 Currently at Token number 50
552 ('ID', 'd', ';')

```
553  non MATCH-----
554 FIRING PRODUCTION 12 <var_tail> ->['<var>']
555 Push <var> STACK
556 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var>']
557
558 Currently at Token number  50
559 ('ID', 'd', ';')
560  non MATCH-----
561 FIRING PRODUCTION 14 <var> ->['id']
562 Push id STACK
563 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', 'id']
564
565 Currently at Token number  50
566 ('ID', 'd', ';')
567 MATCH----- POPPING
568 STACK
569 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':']
570 Currently at Token number  51
571 ('comment', '/*addunsignedintegers*/', '\n')
572 Comment, skipped
573 Currently at Token number  52
574 ('ID', 'e', ':')
575 MATCH----- POPPING
576 STACK
577 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>']
578 Currently at Token number  53
579 ('INTEGER', '444')
580  non MATCH-----
581 FIRING PRODUCTION 15 <ptype> ->['int']
582 Push int STACK
583 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'int']
584
585 Currently at Token number  53
586 ('INTEGER', '444')
587 MATCH----- POPPING
588 STACK
```

```
589 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';']
590 Currently at Token number  54
591 ('currency', '444.13', ';')
592 MATCH----- POPPING
593 STACK
594 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
595 Currently at Token number  55
596 ('ID', 'goo', ':')
597  non MATCH-----
598 FIRING PRODUCTION 9 <var_type_tail> ->['<var_type
    >', ':', '<ptype>', ';', '<var_type_tail>']
599 Push <var_type_tail> Push ; Push <ptype> Push : Push
     <var_type> STACK
600 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_type>']
601
602 Currently at Token number  55
603 ('ID', 'goo', ':')
604  non MATCH-----
605 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
606 Push <var_tail> Push <var> STACK
607 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', '<var>']
608
609 Currently at Token number  55
610 ('ID', 'goo', ':')
611  non MATCH-----
612 FIRING PRODUCTION 14 <var> ->['id']
613 Push id STACK
614 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', 'id']
615
616 Currently at Token number  55
617 ('ID', 'goo', ':')
618 MATCH----- POPPING
619 STACK
620 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>']
```

```
621 Currently at Token number  56
622 ('ID', 'c')
623  non MATCH-----
624 FIRING PRODUCTION 12 <var_tail> ->['<var>']
625 Push <var> STACK
626 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var>']
627
628 Currently at Token number  56
629 ('ID', 'c')
630  non MATCH-----
631 FIRING PRODUCTION 14 <var> ->['id']
632 Push id STACK
633 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', 'id']
634
635 Currently at Token number  56
636 ('ID', 'c')
637 MATCH----- POPPING
638 STACK
639 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':']
640 Currently at Token number  57
641 ('ID', 'e', ';')
642 MATCH----- POPPING
643 STACK
644 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>']
645 Currently at Token number  58
646 ('comment', '/*addsingedintegersandreals*/', '\n')
647 Comment, skipped
648 Currently at Token number  59
649 ('ID', 'read_from_device')
650  non MATCH-----
651 FIRING PRODUCTION 15 <ptype> ->['int']
652 Push int STACK
653 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'int']
654
655 Currently at Token number  59
656 ('ID', 'read_from_device')
```

```
657 MATCH----- POPPING
658 STACK
659 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';']
660 Currently at Token number  60
661 ('FILE', '[A:file.test]', ';')
662 MATCH----- POPPING
663 STACK
664 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
665 Currently at Token number  61
666 ('ID', 'write_to_device')
667  non MATCH-----
668 FIRING PRODUCTION 9 <var_type_tail> ->['<var_type
    >', ':', '<ptype>', ';', '<var_type_tail>']
669 Push <var_type_tail> Push ; Push <ptype> Push : Push
     <var_type> STACK
670 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_type>']
671
672 Currently at Token number  61
673 ('ID', 'write_to_device')
674  non MATCH-----
675 FIRING PRODUCTION 11 <var_type> ->['<var>', '<
    var_tail>']
676 Push <var_tail> Push <var> STACK
677 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', '<var>']
678
679 Currently at Token number  61
680 ('ID', 'write_to_device')
681  non MATCH-----
682 FIRING PRODUCTION 14 <var> ->['id']
683 Push id STACK
684 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>', 'id']
685
686 Currently at Token number  61
687 ('ID', 'write_to_device')
688 MATCH----- POPPING
689 STACK
```

```
690 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var_tail>']
691 Currently at Token number  62
692 ('FILE', '[A:test]', ';')
693  non MATCH-----
694 FIRING PRODUCTION 12 <var_tail> ->['<var>']
695 Push <var> STACK
696 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', '<var>']
697
698 Currently at Token number  62
699 ('FILE', '[A:test]', ';')
700  non MATCH-----
701 FIRING PRODUCTION 14 <var> ->['id']
702 Push id STACK
703 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':', 'id']
704
705 Currently at Token number  62
706 ('FILE', '[A:test]', ';')
707 MATCH----- POPPING
708 STACK
709 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>', ':']
710 Currently at Token number  63
711 return
712 MATCH----- POPPING
713 STACK
714 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', '<ptype>']
715 Currently at Token number  64
716 ('INTEGER', '0', ';')
717  non MATCH-----
718 FIRING PRODUCTION 15 <ptype> ->['int']
719 Push int STACK
720 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';', 'int']
721
722 Currently at Token number  64
723 ('INTEGER', '0', ';')
724 MATCH----- POPPING
```

```
725 STACK
726 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >', ';']
727 Currently at Token number  65
728 stop
729 MATCH----- POPPING
730 STACK
731 ['$', 'LAMBDA', '<end>', '<main>', '<var_type_tail
    >']
732 Currently at Token number  66
733 ('comment', '//stoptheprogram', '\n')
734 Comment, skipped
735 Currently at Token number  67
736 Found $
737 Ending predictive parsing procedure
738
739 Ricky Tan Grammar Submission
740
741 Process finished with exit code 0
742
```