Μεταγλωττιστές 2019

Προγραμματιστική Εργασία #2

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AM: П2016148

• Κανόνες γραμματικής:

```
Grammar
Stmt_list → Stmt Stmt_list
Stmt →
            id equal Expr
           print Expr .
           Term Term_tail .
Expr →
Term tail → xor Term Term tail
           Factor Factor_tail .
Term →
Factor tail →or Factor Factor tail
          Atom Atom_tail .
Factor →
Atom tail →
            and Atom Atom_tail
            parethensis1 Expr parethensis2
Atom →
            id
            number .
```

Αποτέλεσμα ελέγχου για LL(1) συμβατότητα:



• Πίνακες με τα FIRST και FOLLOW sets:

nonterminal	first set	follow set	nullable	endable
Stmt_list	id print	0	yes	yes
Strnt	id print	id print	no	yes
Term_tail	xor	parethensis2 id print	yes	yes
Term	parethensis 1 id number	parethensis2 xor id print	no	yes
Factor_tail	or	parethensis2 xor id print	yes	yes
Factor	parethensis 1 id number	parethensis2 or xor id print	no	yes
Atom_tail	and	parethensis2 or xor id print	yes	yes
Atom	parethensis 1 id number	parethensis2 and or xor id print	no	yes
Expr	parethensis 1 id number	parethensis2 id print	no	yes

• Αποτελέσματα:

Με σωστές εισόδους:

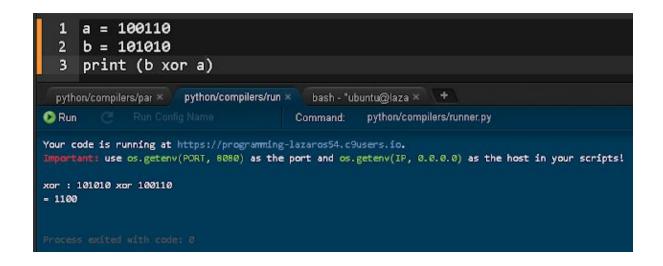
```
1 a = 1001
2 b = 1010 or a
3 print b

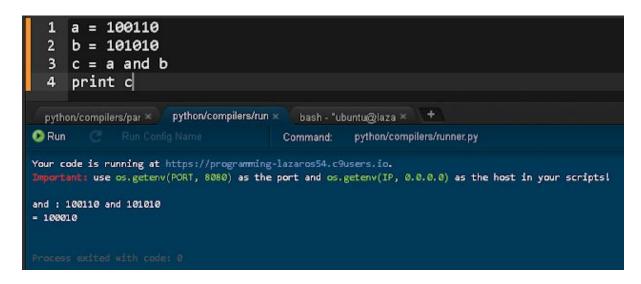
python/compilers/par × python/compilers/run × bash - "ubuntu@laza × +

Run Config Name Command: python/compilers/runner.py

Your code is running at https://programming-lazaros54.c9users.io.
Important: use os.getenv(PORT, 8080) as the port and os.getenv(IP, 0.0.0.0) as the host in your scripts!

or : 1010 or 1001
= 1011
```





Λαθος εισοδοι:

```
a = 1998
   2
  python/compilers/c
                                               Command: python/compilers/passerpy
Run
Your code is running at https://programing-lazaros51.cousers.io.
     tants use os.getem.(POPT, 6060) as the port and os.getem.(IP, 6.0.6.0) as the host in your scripts!
Traceback (most recent call last):
  File "/home/ubuntu/workspace/python/compilers/parser.py", line 153, in <module>
  parser.parse(fp)
File "/home/ubuntu/workspace/python/compilers/parser.py", line 54, in parse
   self.stmt_list()
  File "/home/ubuntu/workspace/python/compilers/parser.py", line 58, in stmt_list
   self.stnt()
  File "/home/ubuntu/workspace/python/compilers/parser.py", line 70, in stat
    e = self.eqr()
  File "/home/ubuntu/workspace/python/compilers/parser.py", line 80, in expr
    self.term()
  File "/home/ubuntu/workspace/python/compilers/parser.py", line 99, in term
    self.factor()
  File "/home/ubuntu/workspace/python/compilers/parser.py", line 116, in factor
   self.aton()
  File "/home/ubuntu/workspace/python/compilers/parser.py", line 145, in atom
    self.match('BINARY_NUM')
  File "/home/ubuntu/workspace/python/compilers/parser.py", line 48, in match
    self.la,self.text=self.next_token()
 File "/home/uburtu/workspace/python/compilers/parser.py", line 44, in next_token
   return self.scanner.read()
  File "/usr/local/lib/python2.7/dist-packages/plec-2.0.0dev-py2.7.egg/plec/scanners.py", line 94, in read
   self.text, action = self.scan_a_token()
  File "/usr/local/lib/pythom2.7/dist-packages/plex-2.6.@dev-py2.7.egg/plex/scanners.py", line 138, in scan_a_token
raise errors.UnrecognizedInput(self, self.state_name)
plex.errors.UnrecognizedInput: '', line 1, char 5: Token not recognised in state ''
```

```
a = 1001
  2 b = 1001
  3 c = a + b
  4 print c
  python/compilers/p × python/compilers/r ×
Run
                                               Command: python/compilers/runner.py
Your cole is running at https://programming-lazaros51.csusers.io.
         is use on-geten (PORT, 6060) as the port and on-geten (IP, 0.0.0.0) as the host in your scripts!
Traceback (most recent call last):
        "/home/ubuntu/workspace/python/compilers/runner.py", line 146, in <module>
 parser.parse(fp)
File "/home/uburtu/workspace/python/compilers/runner.py", line 54, in parse
    self.stmt_list()
        "/home/ubuntu/workspace/python/compilers/runner.py", line 59, in stmt_list
    self.stmt_list()
       "/home/ubuntu/workspace/python/compilers/runner.py", line 59, in stmt_list
    self.stmt_list()
        "/home/ubuntu/workspace/python/compilers/runner.py", line 58, in stmt_list
    self.stnt()
        "/home/ubuntu/workspace/python/compilers/runner.py", line 70, in stnt
  File
  File "/home/ubuntu/workspace/python/compilers/runner.py", line 84, in expr
    t = self.term()
  File "/home/ubuntu/workspace/python/compilers/runner.py", line 98, in term
    f = self.factor()
  File "/home/ubuntu/workspace/python/compilers/runner.py", line 112, in factor
 a = self.stom()
File "/home/ubuntu/workspace/python/compilers/runner.py", line 132, in stom
    self.metch('ID_TOKEN')
        "/home/ubuntu/workspace/python/compilers/runner.py", line 47, in match
    self.la,self.text-self.next_token()
       "/home/ubuntu/workspace/python/compilers/runner.py", line 42, in next_token
    return self.scanner.read()
        /usr/local/lib/pythom2.7/dist-packages/plex-2.0.8dev-py2.7.egg/plex/scanners.py", line 94, in read
    self.text, action = self.scan_a_token()
ile "/usr/local/lib/python2.7/dist-packages/plex-2.8.8dev-py2.7.egg/plex/scanners.py", line 138, in scan_a_token
raise errors.Unrecognizedinput(self, self.state_name)
plex.errors.Unrecognizedinput: '', line 3, char & Token not recognised in state ''
```

Πηγές και σχόλια:

Χρησιμοποίησα τον κώδικα που δημιουργήσαμε κατα την διάρκεια του εξαμήνου στα εργαστήρια σαν βοήθημα όπου στη συνέχεια τον επέκτεινα σύμφωνα με την γραμματική που δημιούργησα έχοντας γνώμονα την εκφώνηση της εργασίας. Άλλες πηγές που χρησιμοποιήθηκαν ήταν κάποια link που είχε η εκφώνηση της εργασίας καθώς και το Google. Επίσης για την αναπτυξη και το τρέξιμο του κώδικα χρησιμοποιησα το cloud9.

Πηγές:

- https://c9.io/login
- http://mixstef.github.io/courses/compilers/assignment2.pdf
- http://mixstef.github.io/courses/compilers/lecturedoc/unit5/mo dule2.html#id1
- https://gist.github.com/mixstef/946fce67f49f147991719bfa4d 0101fa
- http://smlweb.cpsc.ucalgary.ca/start.html