

BUPT Compilers Lab4 2023Fall

Overview

Welcome to the lab class! In this course, you will be completing the programming assignments. Lab 4 is an error handling experiment where you will learn how to identify and handle incorrect JSON files. Error handling is an important aspect in compilers as it can improve the robustness of the compiler.

Coding

1. Code
2. Make the target
3. Run self-test examples in python3 and try to pass them!

(**Optional:** When completing error recovery, you may notice that conflicts may arise, as shown in the first red box in the following figure. Please try to resolve them.)

```

root@bc6069412775:/mnt/Workspace/lab4-yanggao017/jp# make jp
flex lex.l
bison -t -d syntax.y
syntax.y: warning: 3 shift/reduce conflicts [-Wconflicts-sr]
gcc syntax.tab.c -lfl -ly -o jp.out
root@bc6069412775:/mnt/Workspace/lab4-yanggao017/jp# python3 jsonparser_test.py
For file fail02.json:
-----
["Unclosed array"
syntax error: Unclosed array, recovered
#####
For file fail04.json:
-----
["extra comma",]
syntax error: extra comma, recovered
#####
For file fail05.json:
-----
["double extra comma",,]
syntax error: double extra comma, recovered
#####
For file fail06.json:
-----
[ , "<-- missing value"]
syntax error: <-- missing value, recovered
#####
For file fail07.json:
-----
["Comma after the close"],
syntax error: Comma after the close, recovered
#####
For file fail08.json:
-----
["Extra close"]]
syntax error: Extra close, recovered
#####
For file fail09.json:
-----
{"Extra comma": true,}
syntax error: Extra comma, recovered

```

```

For file fail10.json:
-----
{"Extra value after close": true} "misplaced quoted value"
-----
syntax error: Extra value after close, recovered
#####
For file fail13.json:
-----
{"Numbers cannot have leading zeroes": 013}
-----
syntax error: Numbers cannot have leading zeroes, recovered
#####
For file fail19.json:
-----
{"Missing colon" null}
-----
syntax error: Missing colon, recovered
#####
For file fail20.json:
-----
{"Double colon": : null}
-----
syntax error: Double colon, recovered
#####
For file fail21.json:
-----
{"Comma instead of colon", null}
-----
syntax error: Comma instead of colon, recovered
#####
For file fail22.json:
-----
["Colon instead of comma": false]
-----
syntax error: Colon instead of comma, recovered
#####
For file fail32.json:
-----
{"Comma instead if closing brace": true,
syntax error: Comma instead if closing brace, recovered
#####
For file fail33.json:
-----
["mismatch"]
-----
syntax error: mismatch, recovered
#####
Recovered/Total: 15/15
root@bc6069412775:/mnt/Workspace/lab4-yanggao017/jp#

```

Report

Additionally, you will need to submit a pdf report(name_studentID.pdf) documenting your work for assignment. Please carefully follow the instructions outlined below:

1. Academic Integrity: Plagiarism or any form of cheating is strictly prohibited. Your work should be original, and any external sources should be appropriately cited.
2. Programming Assignments: Feel free to ask questions and seek assistance from the teaching assistant if needed.

3. Report:

- Pdf type
- Naming like **name_studentID.pdf**
- Include any relevant diagrams, charts, or screenshots to enhance your explanations.
- Make sure your report is well-structured, with appropriate headings and subheadings.
- **Please provide a detailed explanation of your key code in the report.**

4. Submission Guidelines:

- Include your **name, student ID, class number** and **container number** in the report's header. For Docker on Windows systems, you can view the container numbers in the containers of the Docker Desktop.
- Commit the compressed package of the lab4 folder (**lab4.zip**) , which should include the code you wrote, the compilation results, and your PDF report.

5. Deadline:

November 5, 2023, 23:59

6. Submission Platform:

Teaching cloud platform

Report format

Name: xxx

Student ID: xxxxxxxxxx

Class Number: xxxxxxxxxx

Container Number: 04c56e0ced1b3944f2e000027840f5210f54efecc49b3377166c9a7a32ff119