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Task Allocation:

- parse.c and parse.h contain **helper functions**, **syntax rule parsing functions**, and essential **parser operations**.

Implemented by Zhao Yunhao.

- syntax_tree.c handles the construction and management of the **syntax tree**.

Implemented by Zhao Yunhao.

- parse_print.c is responsible for **printing the syntax tree** and related debugging outputs. **Implemented by Zhang Zuokun.**

- **debug together**
- use cmake to compile them (CMakeLists.txt)

```
[1] 30215 - user@ubuntu:~/parser/parser-1.0/examples
→ build git:(main) * cmake --build .
-- Configuring done (0.0s)
-- Generating done (0.0s)
-- Build files have been written to: /Users/ianzhao/Desktop/编译原理/compiler/build
[ 16%] Building C object scanner_pyc/CMakeFiles/scanner.dir/scanner.c.o
[ 33%] Linking C static library libscanner.a
[ 33%] Built target scanner
[ 50%] Building C object parser/CMakeFiles/parser.dir/parse.c.o
[ 66%] Building C object parser/CMakeFiles/parser.dir/syntax_tree.c.o
[ 83%] Building C object parser/CMakeFiles/parser.dir/parse_print.c.o
[100%] Linking C executable parser
[100%] Built target parser
```

Encounter obstacles that we can not solve:

Such segmentation fault :

```

[1] 38580 segmentation fault ./parser/parser ../text.pc
→ build git:(main) x x ./parser/parser ../text.pc
Lexical analysis completed successfully.
----- Token List -----
INT
ID:x
SEMI
NEWLINE
FRAC
ID:z
SEMI
END_OF_FILE
-----
Parser created.
[Debug] set_token_list: info=0x600000974480, currentTokenNode=0x6000009742d0
[1] 38580 segmentation fault ./parser/parser ../text.pc

```

```

→ build git:(main) x lldb parser/parser
(lldb) target create "parser/parser"
Current executable set to '/Users/ianzhao/Desktop/编译原理/compiler/build/parser/parser' (arm64).
(lldb) run ../text.pc
Process 42573 launched: '/Users/ianzhao/Desktop/编译原理/compiler/build/parser/parser' (arm64)
Lexical analysis completed successfully.
----- Token List -----
INT
ID:x
SEMI
NEWLINE
FRAC
ID:z
SEMI
END_OF_FILE
-----
Parser created.
[Debug] set_token_list: info=0x600000c00030, currentTokenNode=0x600000c0c000
Process 42573 stopped
* thread #1, queue = 'com.apple.main-thread', stop reason = EXC_BAD_ACCESS (code=1, address=0x0)
   frame #0: 0x0000000100004cd0 parser`skipNewlines + 140
parser`skipNewlines:
-> 0x100004cd0 <+140>: ldr    w9, [x8]
   0x100004cd4 <+144>: mov    x8, x9
   0x100004cd8 <+148>: mov    x9, sp
   0x100004cdc <+152>: str    x8, [x9]
Target 0: (parser) stopped.
(lldb)

```

During the experience , we understand the principle of designing a set of grammar, and are familiar with how to write parse function with recursive function... Unfortunately, some errors hinder our successful compilation.

I hope Professor could give us some instructions to overcome them.