

Compilers

Practicum 1 **Lexical analysis**

Introduction

- 4 practical labs
 - Lexing
 - Parsing
 - Code generation
 - IR optimization
- 4 theoretical exercise sessions

Goal

```
void hello_world() {  
    print("Hello, World!")  
}
```

```
hello_world()
```

1:1 → 1:5	void	IDENTIFIER
1:6 → 1:17	hello_world	IDENTIFIER
1:17 → 1:18	('('
1:18 → 1:19)	')'
1:20 → 1:21	{	'{'
2:5 → 2:10	print	IDENTIFIER
2:10 → 2:11	('('
2:11 → 2:26	"Hello, World!"	STRING
2:26 → 2:27)	')'
3:1 → 3:2	}	'}'
5:1 → 5:12	hello_world	IDENTIFIER
5:12 → 5:13	('('
5:13 → 5:14)	')'

Goal

runaway /* comment

1:1 → 1:8 runaway IDENTIFIER

Syntax error: unterminated block comment
at line 1 column 9

runaway /* comment

^^^^^^^^^^

Assignment

- **Flex** lexical analyser generator: `lexer.l`
- “Which files can I modify?”
Check the `make_tarball.sh` script!
- `./make_tarball.sh 01 “John Doe”`

Assignment

- 4 sub-assignments
 - basic lexing
 - location information
 - error reporting
 - context-sensitive rules
- **Deadline:** in two week

Assignment





Compilers > Documenten > pract1

Compilers

Huidige folder:

/pract1

 omhoog

Titel	^ Omschrijving
 lexer	
 lexer_files.tar	

Environment

- **Docker** container platform

```
$ docker run --rm -it  
            -v $(pwd):/pract  
            tbesard/compilers:pract1
```

```
root@15e6d367a85c:/# ls /pract  
Makefile  lexer.hpp  lexer.l   main.cpp  ...
```


Environment

- **Docker** container platform

```
root@15e6d367a85c:/# cd /pract
```

```
root@15e6d367a85c:/pract# make
```

```
flex -d -o lexer.cpp lexer.l
```

```
g++ -g -Wall -std=c++11 -c -o lexer.o lexer.cpp
```

```
g++ -g -Wall -std=c++11 main.cpp lexer.o -o main
```

```
root@15e6d367a85c:/pract# ./main test/dummy.c
```

```
Syntax error: unknown symbol
```

Environment

- **Docker** container platform
- **Ubuntu 18.10** installation, VM, ...
- Any other OS

Organization

- **Groups:** Minerva, per 2
- **WebPA**
- **Interrogations**
- **Contact:** compilers@lists.ugent.be