

## Assignment 5: Building with ANTLR

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Updates: You must have the word room/rooms in a floor production, as was originally intended. I am just going for the partial credit for identifying legal/illegal input.

Build Instructions: Run the python file complex.py

Compiler Version: Python 3.8, ANTLR 4.5.3

Instructions for running on a sample file: The main method prompts the user for a file. So just enter the filename then.

Screen Capture of running on the provided input from the instructions:

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: sampleComplex.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
Legal Input
```

Valid test 1: Simple test. 1 floor, 1 building with 1 floor.

Input: 

```
floor GAMING has room [ 100 by 5 ]
complex building GAMING with floors { GAMING }
```

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: test1.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
Legal Input
```

Valid test 2: More complex.

Input: 

```
floor BEDROOMS has rooms [ 50 by 50, 100 by 100 ]
floor BATHROOMS has room [ 20 by 20 ]
complex
building HOUSE with floors { BEDROOMS, BEDROOMS, BATHROOMS }
building OUTHUSE with floor { BATHROOMS }
```

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: test2.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
Legal Input
```

Error Test 1: Syntax error. Using the word 'has' instead of 'with' in a building line.

```
floor ONE has room [ 30 by 25 ]
complex building ONE has floors' [ ONE , ONE ]
```

Input:

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: test3.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
line 2:21 no viable alternative at input 'building ONE has'
Syntax error in input
```

Error Test 2: Typo

```
floor MAIN has room [ 40 by 30 ]
complex building B with floors { MAIN , MAIN }
```

Input:

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: test5.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
line 2:0 token recognition error at: 'compk'
line 2:5 token recognition error at: 'e'
line 2:6 token recognition error at: 'x'
Syntax error in input
```

Error Test 3: Missing the word room in floor declaration, and a typo in 'building'.

```
floor DINING has rooms [ 80 by 40 , 10 by 20 , 10 by 20 ]
    floor CUBICALS has [ 20 by 20 , 20 by 20 , 20 by 20 , 20 by 20 ]
    floor GRAND_OFFICE has rooms [ 40 by 30 , 20 by 20 , 15 by 15 , 30 by 30 ]
complex
    buildin A with floors { DINING , CUBICALS , CUBICALS }
```

Input:

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: test6.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
line 5:10 token recognition error at: 'buildin '
line 2:27 no viable alternative at input 'floor CUBICALS has ['
Syntax error in input
```

Error Test 4: Missing a square bracket

```
floor ONE has room [ 30 by 25
Input: complex building ONE has floors [ ONE , ONE ]
```

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: test7.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
Syntax error in input
```

Error Test 5: Missing a comma

```
floor ONE has room [ 30 by 25 ]
Input: complex building ONE has floors [ ONE ONE ]
```

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: test8.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
line 2:21 no viable alternative at input 'building ONE has'
Syntax error in input
```

Error Test 6: Missing the word 'by'

```
floor ONE has room [ 30 25 ]
Input: complex building ONE has floors [ ONE , ONE ]
```

```
C:\Users\harleys\Prog_Lang_Trans\Assignment 5>py complex.py
Enter a text file: test9.txt
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
ANTLR runtime and generated code versions disagree: 4.8!=4.5.3
Syntax error in input
```

Through testing I have not found any errors in my implementation (Only checking for syntactic correctness). Everything seems to work as intended.