

**Project title:** Write grammar for an imaginary programming language and generate parse tree using ANTLR (ANOther Tool for Language Recognition).

Task1: Install ANTLR plugin in IntelliJ or PyCharm.

Task2: Write a context free g4 grammar for an imaginary programming language.

Task3: Create a few input files – both syntactically correct and wrong.

Task4: Generate parse tree for the generated input files using the installed plugin.

Task5: Write a report based on what you have done in the project.

Task6: Make a PowerPoint presentation.

Marks distribution:

Area	Allotted marks
Grammar writing (more features – more marks)	15
Parse tree generation	5
Report	5
Presentation	5
Total	30

**A sample grammar and parse tree:**

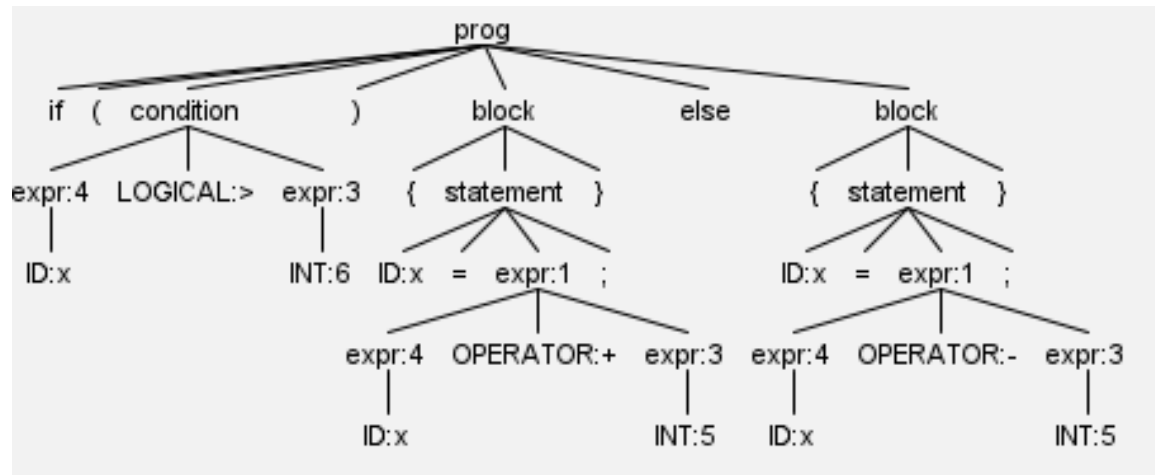
```
grammar prog;

prog: 'if' '(' condition ')' block 'else' block;
condition: expr LOGICAL expr ; // if (x > 6) | if(10 == 0) | if(x%2 <= 10+y)
expr: expr OPERATOR expr
    | '(' expr ')'
    | INT
    | ID
    ;
block: '{' statement '}';
statement: (ID '=' expr ';' )+;
LOGICAL: '==' | '>' | '>=' | '<' | '<=' | '!=' ;
OPERATOR: '+' | '-' | '*' | '/' | '%';
ID: [a-zA-Z]+;
INT: [0-9]+ ;
WS: [ \r\n\t] -> skip;
```

### Sample input:

```
if(x>6){  
    x = x+5;  
}  
else{  
    x = x - 5;  
}
```

### Parse tree:



### Another input:

```
if(x<5){  
    x = x - 5  
}  
else{  
    x = x + 5
```

### Parse tree:

