**Compilers Phase2 Part1**

-Type ::= "int" TypeDash  
| "float" TypeDash  
| "String" TypeDash  
| "char" TypeDash  
| "boolean" TypeDash

* TypeDash 🡪 "[" "]"| lamda

-Statement 🡪 "{" ( Statement )\* "}"  
| "if" "(" Expression ")" Statement StatementDash   
| "while" "(" Expression ")" Statement  
| "System.out.println" "(" Expression ")" ";"  
| Identifier StatementIdentifier

* StatementDash 🡪 "else" Statement | lamda
* StatementIdentifier 🡪 "=" Expression ";" | "[" Expression "]" "=" Expression ";"

-Expression 🡪

<INTEGER\_LITERAL> ExpressionDash  
| <FLOAT\_LITERAL> ExpressionDash  
| "true" ExpressionDash

| "false" ExpressionDash  
| Identifier ExpressionDash  
| "this" ExpressionDash  
| "new" ExpressionNewDash  
| "!" Expression ExpressionDash  
| "(" Expression ")" ExpressionDash

* ExpressionDash 🡪

( "&&" | "||" | "==" | "!=" | ">" | "<" |"<=" | ">="| "+" | "-" | "\*" | "/" ) Expression ExpressionDash

|"[" Expression "]" ExpressionDash

| "." ExpressionDotDash

| lamda

* ExpressionNewDash 🡪 ("int" | "float" | "String" | "char" | "boolean" ) "[" Expression "]" ExpressionDash | Identifier "(" (Expression ( "," Expression)\*)? ")" ExpressionDash
* ExpressionDotDash 🡪 "length" ExpressionDash | Identifier "(" ( Expression ( "," Expression )\* )? ")" ExpressionDash