1 Supported Matlab grammar

⟨*program*⟩ ::= ⟨*statement_or_function_list*⟩

⟨*statement_or_function_list*⟩ ::= ⟨*statement_list*⟩
| ⟨*function_list*⟩

⟨*function_list*⟩ ::= FUNCTION ⟨*function_values*⟩ ⟨*identifier*⟩ ⟨*function_params*⟩
⟨*function_body*⟩ END

⟨*function_body*⟩ ::= ⟨*statement_list*⟩

⟨*function_values*⟩ ::= ⟨*identifier*⟩ EQ
| LSBRACKET ⟨*identifier_list*⟩ RSBRACKET EQ
| ⟨*empty*⟩

⟨*function_params*⟩ ::= LPAREN ⟨*identifier_list*⟩ RPAREN

⟨*identifier_list*⟩ ::= ⟨*identifier*⟩ (COMMA ⟨*identifier*⟩)*

⟨*statement_list*⟩ ::= (⟨*statement*⟩)*

⟨*statement*⟩ ::= ⟨*assignment*⟩
| ⟨*expression*⟩
| ⟨*for_statement*⟩
| ⟨*while_statement*⟩

⟨*assignment*⟩ ::= ⟨*lhs*⟩ EQ ⟨*rhs*⟩ ⟨*newline_or_comma_or_semicolon*⟩

⟨*lhs*⟩ ::= ⟨*identifier*⟩
| ⟨*identifier_with_index*⟩

⟨*rhs*⟩ ::= ⟨*expression*⟩

⟨*expression*⟩ ::= ⟨*arithmetic_expression*⟩

⟨*arithmetic_expression*⟩ ::= ⟨*aexp1*⟩

⟨*aexp1*⟩ ::= ⟨*aexp2*⟩ (LOGICAL_OR ⟨*aexp2*⟩)*

⟨*aexp2*⟩ ::= ⟨*aexp3*⟩ (LOGICAL_AND ⟨*aexp3*⟩)*

⟨*aexp3*⟩ ::= ⟨*aexp4*⟩ (BINARY_OR ⟨*aexp4*⟩)*

⟨*aexp4*⟩ ::= ⟨*aexp5*⟩ (BINARY_AND ⟨*aexp5*⟩)*

⟨*aexp5*⟩ ::= ⟨*aexp6*⟩ (⟨*comparison_operators*⟩ ⟨*aexp6*⟩)*

⟨*aexp6*⟩ ::= ⟨*aexp7*⟩ (COLON ⟨*aexp7*⟩)*

⟨*aexp7*⟩ ::= ⟨*aexp8*⟩ (⟨*addition_operators*⟩ ⟨*aexp8*⟩)*

⟨*aexp8*⟩ ::= ⟨*aexp9*⟩ (⟨*multiplication_operators*⟩ ⟨*aexp9*⟩)*

⟨*aexp9*⟩ ::= ⟨*prefix_operator*⟩ ⟨*aexp9*⟩
| ⟨*aexp10*⟩

⟨*aexp10*⟩ ::= ⟨*aexp11*⟩ (⟨*exponentiation_operators*⟩ ⟨*aexp11*⟩)*

⟨*aexp11*⟩ ::= ⟨*unary_expression*⟩ (⟨*postfix_operator*⟩)?

⟨*unary_expression*⟩ ::= ⟨*elementary_expression*⟩
| LPAREN ⟨*expression*⟩ RPAREN

⟨*elementary_expression*⟩ ::= ⟨*identifier*⟩
| ⟨*integer*⟩
| ⟨*float*⟩
| ⟨*matrix*⟩
| ⟨*string*⟩

⟨*comparison_operators*⟩ ::= GT
| GTE
| LT
| LTE
| DEQ

⟨*addition_operators*⟩ ::= PLUS
| MINUS

⟨*multiplication_operators*⟩ ::= MULT
| LEFT_DIV
| CELLWISE_MULT
| CELLWISE_LEFT_DIV
| RIGHT_DIV
| CELLWISE_RIGHT_DIV

⟨*exponentiation_operators*⟩ ::= EXP
| CELLWISE_EXP