

1 Introduction

For the grammar that follows Here are the types of the various elements by type font:

- **Keywords are in this type font.**
- **TOKEN CLASSES ARE IN THIS TYPE FONT.**
- *Nonterminals are in this type font.*

1.1 Some Token Definitions

letter = a | ... | z | A | ... | Z

digit = 0 | ... | 9

ID = letter letter*

NUM = digit digit*

Also note that white space is ignored except that it must separate **ID**'s, **NUM**'s, and keywords.

2 The Grammar

1. *program* \rightarrow *stmt-seq*
2. *stmt-seq* \rightarrow *stmt-seq* ; *stmt*
3. *stmt* \rightarrow *if-stmt* | *repeat-stmt* | *assign-stmt* | *read-stmt* | *write-stmt*
4. *if-stmt* \rightarrow **if** *exp* **then** *stmt-seq* **end** | **if** *exp* **then** *stmt-seq* **else** *stmt-seq* **end**
5. *repeat-stmt* \rightarrow **repeat** *stmt-seq* **until** *exp*
6. *assign-stmt* \rightarrow **ID** = *exp*
7. *read-stmt* \rightarrow **read** **ID**
8. *write-stmt* \rightarrow **write** *exp*
9. *exp* \rightarrow *simple-exp* < *simple-exp* | *simple-exp* = *simple-exp* | *simple-exp*
10. *simple-exp* \rightarrow *simple-exp* + *term* | *simple-exp* - *term* | *term*
11. *term* \rightarrow *term* * *factor* | *term* / *factor* | *factor*
12. *factor* \rightarrow (*exp*) | **NUM** | **ID**