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\* Patrick Fischer

\* Checkpoint #3

\* Due 9/29/2016

\* Token names must be all capitalized. Non-terminal symbols must be all lowercase.

\* Place semicolons under the last |

\*/

program : headingstmt datasection algsection endmainstmt;

headingstmt: RWMAIN SEMICOLON;

datasection: DATA COLON

|DATA COLON decstmtlist

;

decstmtlist: decstmtlist decstmt

|decstmt

;

decstmt: RWINT COLON varlist

|RWREAL COLON varlist

;

varlist: varref COMMA varlist

|varref SEMICOLON

;

varref: VAR

|liststmt

;

liststmt: RWLIST LBRACK exp RBRACK SEMICOLON;

algsection: RWALG COLON programbody;

programbody: assignstmt programbody

|repstmt programbody

|controlstmt programbody

|inputstmt programbody

|outputstmt programbody

|exitstmt

;

assignstmt: varref assign exp SEMICOLON;

assign: ASSIGNOP;

repstmt: RWWHILE condstmt SEMICOLON

|RWCOUNTING varref RWUPWARD varref RWTO varref SEMICOLON

|RWCOUNTING varref RWDOWNWARD varref RWTO varref SEMICOLON

|endstmt SEMICOLON

;

controlstmt: RWIF condstmt SEMICOLON

|RWELSE SEMICOLON

|endstmt SEMICOLON

;

conditionals: LESS

|GREATER

|LESSEQU

|GREATEQU

|EQUAL

|NOTEQUAL

|AND

|OR

|NOT

;

condstmt: exp conditionals exp;

inputstmt: RWREAD VAR SEMICOLON;

outputstmt: RWPRINT printlist;

printlist: CHARSTRING printlist

|CARRETURN printlist

|CARRETURN COMMA printlist

|SEMICOLON

;

exitstmt: RWEXIT SEMICOLON;

endstmt: RWEND RWMAIN SEMICOLON

|RWEND RWIF SEMICOLON

|RWEND RWWHILE SEMICOLON

|RWEND RWCOUNTING SEMICOLON

;

exp: exp ADD term

|exp MINUS term

|term

;

term: term MULT factor

|term DIV factor

|factor

;

factor: atom

|LPAREN exp RPAREN

;

commentstmt: COMMENT;