Alan Perlis Febr. 1960

The following represent my and A. Holt's comments on the report draft. Holt is Turnaski's replacement.

| page/line | change | to | read |
|---|---|---|---|
| 4/16 | recursive | | iterative |
| 7: 2.81/4 to end 2.8. | | Certain of the quantities are said to possess values at some instant in program time. The value of a quantity X at time t means: | |
| | | X — value of X at time t | |
| | | numeral — corresponding number | |
| | | variable — a number at time t | |
| | | array designator — a sequence of numbers at time t | |
| | | expression — the result of evaluating the expression at time t | |
| | | procedure designator — the result of evaluation as specified in the procedure body at time t. Not all procedures have values. | |
| | | Reference to time dependence may be omitted whereever the context permits. | |
| 8:2.9. | delete | | |
| 8: 2.10./1 | delete | | |
| /2 | | The scope of a quantity is the block in which that quantity is declared to possess that property. | |
| 8/1- | identifier | designator | |
| 9:3.2. | VALUES | DESIGNATORS | |
| /1- | value | designator | |
| 3.2.3./1 | | The values of procedure designators are .... which results from the application, to fixed sets of actual parameters, of given sets of rules..... ....The rules governing specification of actual..... | |
| 3.2.4./3 | | ..analysis, which will be xxxxxxxxxxxxxxxxxx | |
| 10:3.2.5. | | Transform procedures | |
| | | for all occurrences of the stem "transfer" "read" "transform" | |
| /1 | | ..procedures which transform quantities of one type into another may be defined. Such procedures may be called transform procedures. | |
| :3.3.1./4 | value | designator | |
| | occurrences of | | |
| | simple | unconditional | |

10:3.3.1. Insert after 3.3.1. Table of most complex forms

$f = A_1^{A_2}$

$t = f \times f \times \ldots \times f$

$A_u = t + t + \ldots + t$

$A_{if} =$ if B then (A)

A = if B then (A) else A

Peter: the letters f, t, etc. could be printed to the left of the left margin of the syntax list. This will help the reader see what is going on.

11: occurrences of simple unconditional

12:3.4./5 procedure value procedure designator

13:3.4.4./2 " "

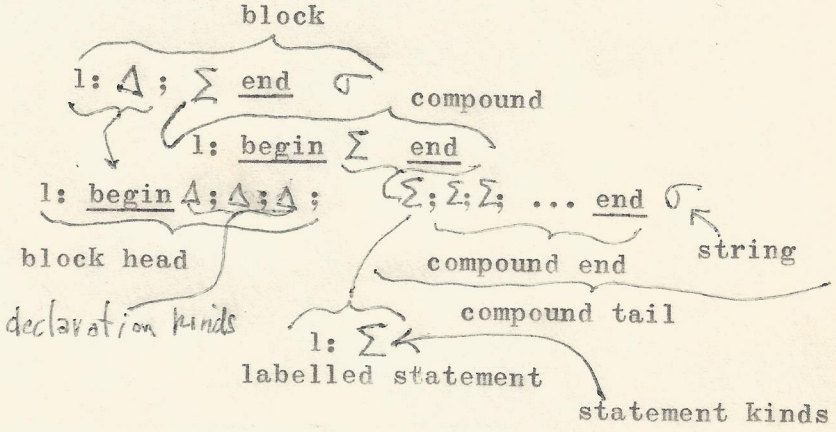
13:3.4.3./2 computing a logical value computing a logical value--that for the Boolean expression.

14: and thereafter all occurrences

switch value switch designator

15: 4.4.1.

Peter: the following picture will clarify the syntax of compound statements.




16:4.1.3/6,7,11 entity quantity

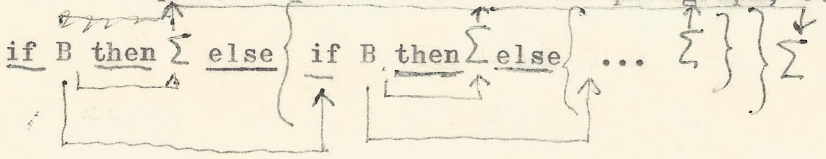
/10 to in

4.2.4./ all occurrences

transfer transform

17:4.5. Peter: for clarity add syntax definition of ⟨statement⟩.

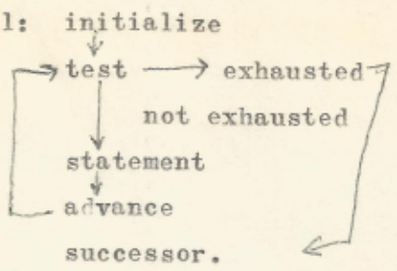
18:4.5.3.2. Add a picture at the end of this paragraph, e.g.,



19:4.6.3/3,4 delete while both.....remain true.

5,6,7 replace by

A for clause is in effect a sequence of assignment statements. The picture represents such a for clause. Initialize means: perform the first assignment of the for clause. Advance means: perform the next assignment of the for clause. Test determines if the last assignment has been done. If so, control is transferred to the successor of the for statement. If not, the statement following the for clause is executed.




20:4.6.5./1ff Upon exit out of the statement S through a go to statement the value of the controlled variable will be the same as it was immediately preceeding the execution of the go to statement.

4.6.6. replace

| | | |
|---|---|---|
| 4.7.3./4 | the language | ALGOL |
| .1./1 | replacement | assignment |
| /2 | identifiers | parameters |
| 21:/2, 4.7.4./3, 4.7.5.2./1, | | |
| 4.7.5.4./1, 4.7.5.5./2,6 | identifier | parameter |
| 4.7.3.2. | list is ...names of the | list is replaced, throughout... by the corresponding actual parameters, |
| 4.7.3.3./2 | finally the | finally the effect is as though.. |

The statement covered by a for clause may be complex, and may contain go-to statements leading to some statement outside the scope of the for-clause. At this point in computation time the for-clause is not yet exhausted and, for the time being its state remains unchanged. Then:

1. If the computation progresses to a new go-to statement which leads back into the compound under the for-clause, the for statement is continued just as if no interruption had taken place.
2. If the cojputation leads back to the beginning of the for statement it is re-initialized and begun again
3. If the computation does not lead back to the for statement (either to its interior or its beginning) then the for statement computation remains incomplete.

ma

...as above, is executed in place
.....procedure statement.

21/4.7.5./4 a correct statement... a correct ALGOL statement.

4.7.5.3.

4.7.5.5./4 the heading of the procedure declaration).

22:4.7.6./1

4.7.8./3 body not expressed in ALGOL code evidently...

5. all occurrences of identifiers quantities

/2 the program. The scope of a declaration is the block in whose heading it lies. (Two distinct quantities may have the same identifier if declared in different blocks. As control passes into a block the significance of a given identifer may consequently change.)

/14 ment) all quantities which are declared ...block become undefined.

/17 effect: upon a reentry into...

/20 All quantities of a program must be declared. Identifiers which use standard function or transform procedures will not be declared.

23:5.1.3./2 simple variables identifiers

/~~2~~2

24:5.2.4. lower bound upper bound expressions.

5.2.4.2./2 global non-local

/4 delete fixed

5.3.3./3 identifiers designator

.4./2 will be evaluated using the current value of all variables every time the item ....is referred to.

.3.5./2 " For each local identifier occurring in designational expressions in a switch declaration there must be a block in whose heading it is declared. All designational expressions referring to this switch declaration must be positionally within all of teese blocks.

Peter: Will we not have to append a new character to the list of declarators. Thus, do we not need an allocation constraint called array limits?

25:5.4./3,4,5 ⟨formal identifier⟩ ⟨formal parameter⟩

/12 ⟨specification part⟩⟨specifier⟩ion.iden

note: concatenate on the right

26:5.4.3./7 body to represent formal parameters. Those formal parameters called for as values in the ...

/10 the values of actual parameters.

/11 which do not represent formal parameters will be either local or non-local....

/13 global non-local

5.4.5/3 identifiers parameters

Peter: against not being optional feature

McCarthy asked me to communicate his satisfaction with the report with the exception of 3:/11 where we would prefer

...for stating and communicating processes.

Otherwise we think you did a magnificent job and well go along with what you deem the best compromise of the various criticisms. Regards (for A. Holt & M. Carthy)