Exercise IV

Implementation of the conditional

The language MINI has to be extended with the conditional. Example:

```
IF piet > 0
THEN piet := piet - 1; put (text (piet))
ELIF piet < 0
THEN piet := piet + 1; put (text (piet))
ELSE put (text (piet))
FI
```

The syntax of the MINI language is therefore changed and augmented by the following syntax rules.

The conditional choice

Syntax

a) `conditional choice:`
```
    if token, condition, then part,
      else part option, end if token.
```

b) `then part:`
```
    then token, paragraph without declarations.
```

c) `else part:`
```
    else token, paragraph without declarations;
    elif token, condition, then part, else part option.
```

Context conditions

a) The conditional choice has the same type and access as the then part and else part option. If the else part option is empty, it has type VOID.

b) The then part has the same type and access as the paragraph without declarations.

c) The else part has the same type and access as the paragraph without declarations or the then part and else part option. If the else part option is empty, it has type VOID.

Semantics

a) In a conditional choice, the condition is evaluated first. If the condition yields the value TRUE, the then part will be executed. If it yields the value FALSE, the else part will be executed if present.

c) In an else part conforming to the second alternative, the condition is evaluated first. If the condition yields the value TRUE, the then part will be executed. If it yields the value FALSE, the else part will be executed if present.

Primaries

a)
```
primary:
    repetition;
    conditional choice;
    call;
    denoter;
    identifier application;
    open token, expression, close token.
```

Semantics

a) The type and access of the primary are the same as those of the conditional choice.

Symbols

The following symbols are added to the language

```
if symbol          IF
then symbol        THEN
elif symbol        ELIF
else symbol        ELSE
end if symbol      FI
```

A small set of test programs can be obtained by unpacking the file `ftp.cs.kun.nl://pub/cdl3/ex4.tgz` in your MINI working directory.