AUTOMATIC BRAILLE TRANSLATION

IN THE NETHERLANDS

by

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As I told you yesterday, I am a worker in the research-laboratory of Philips Computers Industries, Eindhoven, Holland. Two years ago, the Netherlands library for the Blind asked me to develop a program for Braille and contracted Braille. I worked on it in my own time, but during the time I got more and more facilities of Philips without any commercial aims of Philips. When I say "we" I do mean the Netherlands library for the Blind and not Philips.

A couple of years ago there was developed in the Netherlands, in the Technical High School of Delft, a Braille embosser driven by paper tape punched on a Flexowriter directly. The Flexowriter punches were slightly rebuilt. I have some information about this Braille embosser with me for distribution.

In 1969 our library had a gift from a newspaper firm on the occasion of its 125th anniversary, for which we bought a computer PDP 8/I with 8K core memory, disk units, a high speed reader and punch. There still is some money left for which we will buy a magnetic tape unit and a small line printer.

This is the situation in the Netherlands library for the Blind with the program working now during about six months, and it works very well. Our goals are very high: it is to make everything with every input, for everybody in every grade of contraction.

The situation of contracted Braille in Holland is quite difficult. The normally used Braille has four contractions in it, that is what you call in Germany and England Grade I. The Grade 2 in Holland has about 1/3 contraction, in common use however is, let us say grade I 1/2, which has up to now fifteen percent contraction. So I am forced to write a program for these three types of contracted Braille. To test the program I made a sample of 30,000 characters from 20 book titles, 20 random sentences per book, giving a 5,000 different words. Now it is 100 percent perfect Braille for this sample, but since it is only a small sample, I cannot say, my program is better than one failure in 5,000 words. The program is written in PDP 8 assembler code and uses 6,000 words of memory for the program and tables. There are five levels in the program:

1. The input level for which I wrote preprocessors, I am independent of input codes. There are preprocessors available for Flexowriter code, telexcode, ASCII code, and one for a code used in the Philips computer industries for which we make Braille copies of the manuals.

2. I wrote some postprocessors to be independent of output codes: two for Braille embossers, one for inkprint on the teletype of the PDP 8. It is easy to write a post processor to produce Braille on a line printer. Between input and output there are three other blocks in the program.

3. To gather characters to words: a word is a string of characters, going from space to space. In the word there are three groups of characters in the following sequences:

a) the punctuation at the beginning: parentheses, quotes, and so on

b) a group of alphabetic characters which form the spoken word

c) a string of "word endings": dots, commas, parentheses, quotation marks, etc.

In this block the contractions for Grade I and I 1/2 are made.

4. After the word is completed the contractions for Grade 2 are done. In this step the program goes in four passes through the word according to the priority of a contraction.

Note: Word contractions are done before 4 or afterwards, resp. according to Grade 1 1/2 or 2.

5. To gather words to lines at the end of the line the program will jump to a hyphenation block. We have two hyphenation programs: One is a copy of a Fortran syllable splitting processor in PDP 8 code and the other is a Markov processor using a matrix of 26 x 26, giving a Boolean whether or not hyphenation is permitted.

I found in the statistics of the outcoming text, that the average loss at the end of a line is two cells. I agree with Mr. Gildea's percentage of about seven percent loss in paper.

In 1948 a committee was installed to develop a uniform contracted Braille code. At that time there was a handful of Braille codes in use in the Netherlands.

As this system was too difficult in Grade 2, a new committee was installed to revise or streamline the system. I had the luck to be asked for this committee, so I may have some influence on the new system.

That is the state of the uniform Braille system in the Netherlands.