

2423

BL R&D
Report No. 5807

A front-end for IR experiments

S.E. Robertson
J.D. Bovey

Department of Information Science
The City University
Northampton Square
London EC1V 0HB

Final report to the
British Library Research and Development Department
on Project Number SI/G/569
(November 1982 - September 1983)

December 1983

Contents

1. Introduction

1.1. Research background

1.2. Overview of the present project

2. Progress of the project

2.1. Connecting links

2.2. PSS gateway

2.3. Hardware and software in the Department

2.4. Noise on the line

2.5. York software

2.6. Future developments

3. The cirt system: users' view

3.1. Overview

3.2. Data structures.

3.3. The Output File

3.4. Command Syntax

3.5. Doing a search

3.5.1. Invoking cirt

3.5.2. Calling up Data Star

3.5.3. Building a query

3.5.4. Searching

3.5.5. Printing documents on the terminal

3.5.6. Relevance feedback

3.5.7. Logging off from Data Star

3.6. The cirt Commands

3.7. The weighting scheme

3.8. Experiences

4. The searching algorithm

4.1. Introduction

4.2. Previous suggestions

4.3. Constraints on the present approach

4.4. Description of the algorithm

4.5. Use of the algorithm

4.6. Experiences

4.7. Discussion

4.8. Appendix

5. Technical description of the system

5.1. Installation

5.2. Source code

5.2.1. Cirt.c

5.2.2. Search.c

5.2.3. Print.c

5.2.4. Lex.yy.c

5.2.5. X29.c

6. Thoughts on the future development of cirt

6.1. Dividing cirt into two processes

6.1.1. The problem of size

6.1.2. Splitting the process

6.1.3. Communication between the processes

6.1.4. Flow of Control in P2

6.1.5. The Universal Search Protocol

6.1.6. Notes

6.2. Other Additions

6.2.1. Save and Restore

6.2.2. Term deletion and improved term addition

6.2.3. Other search algorithms

6.2.4. Automatic query expansion

6.2.5. Other Databases on Data-Star

6.2.6. Checking the X25 connection is up

6.2.7. A logout command

6.2.8. A Help Command

6.2.9. A Limit Command

6.3. Making cirt more user-friendly

6.4. Bugs

7. A Universal Search Protocol

7.1. Introduction

7.2. Description of the USP

7.2.1. Search commands and replies.

7.2.2. The Print command

7.2.3. Other commands

7.3. Message Format

7.4. Some actual message formats

7.4.1. Search Commands and Replies

8. Conclusions and recommendations

8.1. Conclusion

8.2. Oddy-Jamieson evaluation

8.3. Possible operational evaluation of cirt

- 5 -

8.4. Outline of a project

References