Figure 5. Perimeter routeing for a square mesh.

where the 'dot' operators are defined as follows:

$$a \, \dot{o}p \, b = \begin{cases} 0, & \text{if } a \, op \, b \text{ is false} \\ 1, & \text{if } a \, op \, b \text{ is true.} \end{cases}$$

As in the case of the straight line of processors, the solution can be expressed in matrix form as $U = A^{-1}C$, where the coefficients of the matrix A are given by:

$$a_{(r-1)\,n+c,\,(i-1)\,n+j} = \begin{cases} 1 + Rt_s, & \text{when } r = i \text{ and } c = j \\ Rt_a[1/(m-1)] + Rt_r^{i,j}P_{r,c}, & \text{otherwise} \end{cases}$$

where $1 \leqslant i, j, r, c \leqslant n$. Note that in the matrix solution, the potential utilization $U_{r,c}$ of processor $p_{r,c}$ is mapped to $U_{(r-1)\,n+c}$.

Book Review

Rapid improvements in technology and cost/performance ratios result in continuous changes in the way organizations apply information technology. This is true in office information systems as in other areas. While for most of the 1980s they were viewed largely as self-contained departmental systems, they are now, through the development of networks and integration with personal computing, corporate data processing and MIS, becoming part of or even the basis for organisational computing. Office systems seemed to be seeking a role throughout the later 80s; they may now have found it, as the platform for organisation-wide communications. This makes office systems more important than they have been before, and the need to understand them more pressing.

This book is intended as an introductory text for students in computing or business studies, or for people involved in implementing office systems either as managers or technical specialists. While it discusses current office technology including networks in some detail, it does not attempt to explain what office systems are *for*, or what the business benefits of OIS might be. This signals a general weakness on the business and organisational side.

On the technical side, the book contains a detailed discussion of word processing, image processing, electronic storage, electronic mail, networks, decision support, expert systems and system design. Computing students would find this accessible and useful, if the material is not covered in their other textbooks or courses. The discussion of office work however does not reflect its many-sidedness and complexity as is found in Doswell (1990), for example. It also does not provide them with the analysis of the function of the office and its role in the business which they particularly need. Instead, it focuses on office roles and activities as they are currently performed (and existing office equipment such as typewriters and filing cabinets), as the basis for the computer system; the implication therefore is that you automate existing procedures rather than analyse and redesign work processes and information flows, as is stressed for example in the recent Institute of Administrative Management/Touche Ross report on office automation. It would be unfortunate if a new textbook helped perpetuate among the next generation of computer specialists a view which is already becoming outdated.

The relation of office to other systems is now very topical, because of the trend to integration. On this the book is unclear. Office systems are treated as a category of MIS, along with transaction processing, and MIS are at one point equated to the total business information systems of the organisation.

However, the rest of the discussion of MIS seems to use the term in the narrower and more usual sense of supporting management functions and decision-making requirements. Some attempt to classify systems, for example according to the routineness and structuredness of the work, would have been helpful.

Students of business and management and other non-specialists also need a clear understanding of the business role of office systems, as well as an explanation of the available technology. They would get something of the latter from this text; however, it is not always easy to follow. Technical terms are sometimes dropped in without explanation, some of the diagrams are difficult to interpret, and there is no glossary. The two case studies are rather limited, as one concerns the introduction of word processing in 1982, and the other desktop publishing in an academic environment.

The authors indicate the importance of the user at several points, but the book is neither business- nor user-led. It provides a better introduction to current office technology than to office information systems. The organisational aspects of OIS are mentioned in passing but not considered in any depth, and there is no vision of the important part which office systems will have in the near future as the basis of organisational communications.

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