Partition Number	Set Distribution	B	Splitting Criteria	Ratio n_t/N_a
1	120, R	0·864831	1·258636	3·000000
2	42, 78, R	0·928971	1·512282	2·193750
3	42, 21, 57, R	0·948126	1·620477	1·781250
*4	42, 21, 14, 43, R	0·951851	1·679806	1·478125
5	42, 21, 14, 10, 33, R	0·947850	1·643781	1·237500
6	42, 21, 14, 10, 8, 25, R	0·940539	1·528145	1·015625
7	42, 21, 14, 10, 8, 7, 18, R	0·931681	—	—

Problem 4   Distribution unsuitable for the Lynch method
$R = 120$, $T = 20(10)$ to be subdivided consecutively into two sets by removing a set of size 10 on each occasion. The splitting criteria and the ratio n_t/N_a are aligned with the distribution that is being tested prior to subdivision.

Partition Number	Set Distribution	B	Splitting Criteria	Ratio n_t/N_a
*1	200, R	0·983393	4·767308	2·000000
2	190, 10, R	0·963483	4·488231	2·072727
11	100, 10(10), R	0·884679	2·658586	1·909091
12	90, 11(10), R	0·880926	—	—

Note that, in contrast to the previous tables, the group of size 120, R, is the group that remains unchanged during the splitting process.

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Book review

Microprocessors—Their Development and Application, (ERA, £39)

The most useful aspect of this well compiled book is that it gathers together within one binder the sort of information that individuals new to the field, as well as old hands expanding into new areas, would find useful.

The chapters cover a broad range of microprocessor topics to an informative depth; including background information to the subject. The last third of the volume is totally devoted to information provided by major manufacturers. This saves the reader the trouble of sending away for this type of information, which, should he venture to, often results in him getting some uninformative glossy introductory material as well (or instead!) The inclusion of this information also serves the purpose of introducing people new to the field to the style and quality of specification material which is broadly distributed. This is often the only hardware and software documentation freely available upon which a selection decision will be made. An index to this wealth of information is, regretfully, not provided.

The first major chapter introduces the microprocessor as a natural result of a technological evolutionary chain, and traces the development of electronics from the introduction of solid-state devices up to the present day. A realistic assessment of future development trends is also included. The topic then switches to the present day, examining what a microprocessor is and is not. The effects of different technologies are discussed, and their influence on market products. The importance of the software/hardware problem is underlined. It is recognised that much work needs to be done on the development of microprocessor software and the need for standardisation is stressed.

The following chapter gives a closer look at what is available. It is noted that many (280) micros are on the market, but a much smaller number are readily available and in common use. The microprocessor devices covered are divided into major groups according to generation, word-length and single/multi chip.

Useful reference charts are included, with microprocessor summary data sheets describing briefly the main hardware, and to a lesser extent software, aspects of 35 micros. There are a few lines about each of the major manufacturers, mentioning which products they produce.

Chapter Four attempts some meaningful comparison of devices, stressing the heavy dependence on the type of application involved. Manufacturers' claims are put into perspective and a few practical definitions made for the purposes of the report. Two benchmark results from Western Digital (11 micros) and TI (6 micros) are included, but no conclusions are made of their value. The tests cover such areas as block movement, character search and interrupt servicing. The chapter ends with a brief discussion of 'industry standards, albeit de facto'.

Chapter 5 covers the technical and non-technical decisions that have to be made in using a microprocessor for some application. Consideration of many factors is suggested, such as availability, supplier reputation, software support, instruction set speed, architecture and second sources. Decisions about word length and bus structures are covered, and the effects of more detailed architectural points are systematically examined (such as addressing modes, pipelining, index registers). A good section covering the instruction sets of micros is included, and an explanation of the meaning of address ranges and cycle times illustrates their misleading use in architecture descriptions.

Different approach options are then pursued, and the pros and cons of a working microcomputer v. a box of parts discussed. The availability of suitable software is, of course, important, and assemblers and high level language assemblers/compilers are mentioned at some length. More detailed points of system integration considerations are then considered. The chapter ends with an incomplete extract (from one of the popular magazines) on microprocessor applications.

The appendices provide answers to many of the questions that one might ask, whether new to the subject or not. A reasonably comprehensive list of distributors is very useful for acquiring information on the state of the art. On the whole this is a most useful compendium of information covering introductory and reference material at a useful level of detail. Highly recommended.

N. E. WISEMAN (Cambridge)