and so this system is totally secure by Theorem 5.

On casual inspection this may seem to contradict the remarks on
halting. However, the modified priv machine is not universal and
thus the halting theorem no longer applies. (The extra
security comes from the customer having a bound on the
computation time which was previously known only to the
author). In practice this does not matter since the values of
\( i_s \) and \( i_c \) can be set so that the program has sufficient time
to complete its task.

These registers correspond to clocks in real machines. Note
that the value of \( i_p \) must only be accessible while the processor
is marked priv or priv information can be extracted. Nor must
the computation time be accessible externally.

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References


Book reviews

Computer programs for computational assistance in the study of

The stated goal of the book is to provide a set of computer codes
which solve many of the computational problems of linear control
theory. The book achieves this objective, at least so far as is possible
in 198 pages. The volume provides a valuable basis set of routines
for control system design and would be very useful to anyone wishing
to try these methods in practice.

Programs are contained in the book for the following problems:
time response computation, sensitivity analysis, modal control,
observer design, series compensation, solution of Riccati equations,
decoupling, frequency response, root locus and partial fraction
expansions. The second edition of the book contains a number of
useful additional features which were not in the earlier version. Five
new design programs have been added and there is a new chapter
containing worked solutions to some typical design problems.

The routines all appear to work according to specification and there
are few remaining program errors. The input and output data format
has been carefully explained and there should be no difficulty getting
the programs to work even for someone with limited computer
knowledge. For anyone wishing to modify or improve the programs,
it is unfortunate that few comments have been included and that
there are no flowcharts. However, this extra information would have
undoubtedly increased the cost of the book without helping the
average reader.

The main limitation of the programs is that they are restricted to
low order systems. This is largely a consequence of the fact that,
in every case where a choice existed, the authors favoured a simple
algorithm rather than a complicated one with superior numerical
properties. However, the programs will undoubtedly provide
satisfactory solutions in simple cases and in more complex situations
the programs at least provide a useful first step before resorting to
the more specialised techniques.

The book is highly recommended to both teachers of control theory
and practising engineers. At £1-95 the book is extremely good value
for money.

G. C. GOODWIN (London)

Short notice

Computer Applications and Facilities for Science and Technology in
the Asian and Pacific Region

This is the fourth in a series of directories published by the Registry
of Scientific and Technical Services, Jamieson ACT, Australia,
whose aim is to encourage cooperation between scientific and tech-
tnical groups working in agriculture, forestry, fisheries, engineering,
mining, industry, computing and other fields associated with
development in the countries agreeing to be included in the
directories.

The directory is in three parts, the first containing information on
computer installations, the second on computer users, and the third
being two indexes: a subject index to part 2 and an organisational
index to all the groups listed.

The countries taking part are Australia, China (Taiwan), Japan,
Korea, Malaysia, New Zealand, The Philippines and Thailand.
Organisations are listed alphabetically within subdivisions of
Government, University and private sector, under the country.

Interesting facts emerge on perusing this directory, such as that the
biggest staffs are employed by the Victoria University of Wellington,
New Zealand, with 700 professionals providing a computing service
and training to students and graduates, the Taiwan Sugar Corpor-
ation, with 3,301 professionals in a total of 6,984 to provide a general
computing service and data acquisition, and the Taiwan Ministry of
Communications, with a staff of 10,230 of which 8,318 are profes-
sional, giving a computing service and administrative training.

At the other end of the scale, the Australian Government has
several departments run with two professional staff out of a total
of two, some university departments in Australia, New Zealand and
Japan have only two staff, and an engineers computer bureau in
Wellington has a staff of only two professionals to provide a complete
computing service for engineers.

The directory, priced at A$10.00, is compiled and published by the
Registry of Scientific and Technical Services and distributed by the
Queensland University Press, St Lucía, Queensland, and the
Australian Government Publishing Service, Canberra, Australia.