A practical handbook for software development

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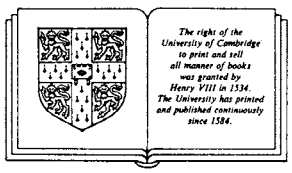

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Foreword

The cost of software development is now the dominating cost in computer systems. As hardware costs decline, improved efficiency of software production becomes the key target if further reductions in computing costs are to be achieved. Accordingly the Alvey Committee identified software engineering as one of the four underlying technologies for the UK national programme of cooperative research in information technology.

Coming as it does at the start of the Alvey programme, I welcome this book by Martyn Ould and Nick Birrell, for it presents a picture of software engineering techniques that are already in existence and can therefore be exploited now. If the techniques set out in the book are widely applied we can look forward to a very significant improvement in the efficiency of software production.

Brian Oakley, Director, Alvey Programme
London, Autumn 1983

Preface

With the accelerating pace of work being done in the field of software engineering, it is becoming increasingly difficult to see the range of available techniques against a common background. Individual techniques are accessible throughout the literature but generally each is described in isolation. Comparison is difficult unless one has a strong idea of what one is looking for.

Our purpose in writing this book has therefore been to bring together, within a single framework, a variety of methods from all stages of software development and, in this way, to assist software engineers in particular in finding and evaluating the techniques appropriate to their own working environments. This should be regarded principally therefore as a book of signposts, leading the reader out into the field with a map, a compass and some reference points. By combining pointers to a selection of modern development practices with practical hints and checklists, all within one framework, we hope to fill the need for a vade-mecum to the software developer.

Managers with responsibility for software production will also, we hope, find much to stimulate their ideas about what modern practices have to offer and how their departments' efficiency and effectiveness could benefit. Students of computing science will be able to complement their more theoretical work by seeing the software development process as a day-to-day activity, a process that has managerial and sociological as much as purely technical aspects. As software developers we need to be aware of the work that has been done already in the software engineering field and that is ready for us to exploit.

Much of the flavour and content of this book naturally derives from our work for Logica and Logica's own philosophy and practice, and we would like to acknowledge both this contribution and the encouragement and facilities that Logica has given.

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Finally, we welcome the opportunity of acknowledging all those whose work this book reports on; many of their names appear in the text and the bibliographies.

N. D. Birrell and M. A. Ould
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