This book is based on my doctoral research, undertaken at Department of Mathematics, University of Delhi, India. The nature of burst errors differ from channel to channel depending upon the type of channels or the kind of errors which occur during the process of data transmission. A new kind of burst error viz., repeated burst error has been introduced and the codes that can detect and correct repeated bursts have been discussed. The investigations in this book are on bounds on the number of parity-check digits required for linear codes capable of detecting and correcting repeated bursts and repeated low-density bursts. An algorithm for the construction of a parity-check matrix of a code capable of correcting repeated burst errors has been proposed. The study of these codes is important not only from mathematical point of view but also from application point of view. The development of codes detecting and correcting such errors may prove to be useful for channels already dealing with multiple burst errors improving upon their efficiency.

Error Detecting and Correcting Codes

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