# CHAPTER 1

# INTRODUCTION

Linked lists were developed in 1955-1956, by Allen Newell, Cliff Shaw and Hebert A. Simon at RAND Corporation and Carnegie Mellon University as the primary data structure for their Information Processing Language (IPL).IPL was used by the authors to develop several early artificial intelligence programs, including the Logic Theory Machine, the general problem solver, and a computer chess program

Reports on their work appeared in IRE Transactions on Information Theory in 1956, and several conference proceedings from 1957 to 1959, including Proceedings of the western Joint computer conference in 1957 and 1958, and information processing (proceedings of the first UNESCO International Conference on Information Processing ) in 1959. The now- classic diagram consisting of blocks representing list nodes with arrows pointing to successive list nodes appears in "programming the logic theory machine" by Newell and Shaw in Proc. WJCC, February 1957. Newell and Simon were recognized with the ACM Turning Award in 1975 for having "made basic contributions to AI, the psychology of human cognition, and list processing". The problem of machine translation for natural language processing led victor Yngve at Massachuetts institute of technology (MIT) to use linked lists as data structures in his COMIT programming language for computer research in field of linguistics. A report on this language entitled "A programming language for mechanical translation" appeared in mechanical translation in 1958.

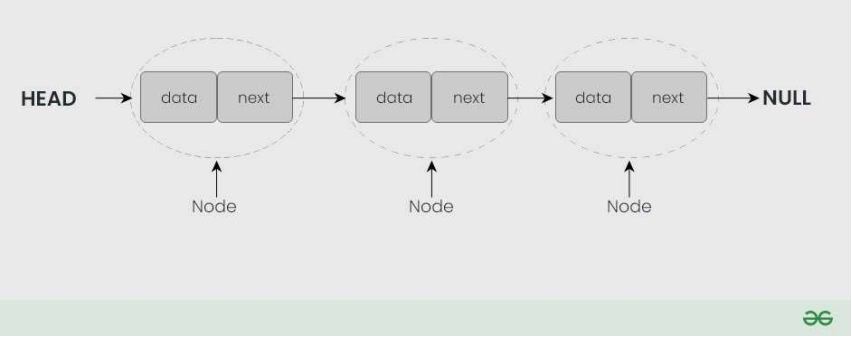


**Fig. 1.1 Singly linked list**