

File Structures

Department of Information Science and Engineering



SAHYADRI
COLLEGE OF ENGINEERING AND
MANAGEMENT -575007

INTRODUCTION

FILE OPERATIONS IN MICROSOFT INCLUDE CREATING, OPENING, SAVING, AND CLOSING FILES IN APPLICATIONS LIKE POWERPOINT, WINDOWS EXPLORER, AND ONEDRIVE. USERS CAN COPY, MOVE, RENAME, AND DELETE FILES, AS WELL AS ORGANIZE THEM INTO FOLDERS AND APPLY ATTRIBUTES. MICROSOFT OFFERS FEATURES LIKE FILE SHARING, COLLABORATION, VERSION CONTROL, AND SEARCH CAPABILITIES. FILE OPERATIONS ENSURE EFFICIENT FILE MANAGEMENT AND ENABLE SEAMLESS INTERACTION WITH FILES ACROSS PLATFORMS AND DEVICES.

FILE SEARCH

MICROSOFT PROVIDES ALGORITHMS TO EFFICIENTLY SEARCH FOR FILES BASED ON SPECIFIC CRITERIA, SUCH AS FILE NAME, FILE TYPE, OR CONTENT. THE SEARCH ALGORITHM USES INDEXING AND METADATA TO QUICKLY LOCATE FILES WITHIN THE FILE SYSTEM, IMPROVING SEARCH PERFORMANCE. ALGORITHMS LIKE THE BINARY SEARCH OR HASH-BASED INDEXING MAY BE EMPLOYED TO ENHANCE THE SPEED AND ACCURACY OF FILE SEARCH OPERATIONS.

FILE COMPRESSION

- MICROSOFT INCORPORATES ALGORITHMS FOR FILE COMPRESSION TO REDUCE THE FILE SIZE AND OPTIMIZE STORAGE SPACE. COMMONLY USED COMPRESSION ALGORITHMS INCLUDE ZIP, GZIP, OR LZ77/LZ78. THESE ALGORITHMS EMPLOY TECHNIQUES LIKE DATA COMPRESSION, DICTIONARY-BASED ENCODING, AND ENTROPY ENCODING TO COMPRESS FILES, REDUCING THEIR SIZE WHILE MAINTAINING DATA INTEGRITY. THIS ENABLES EFFICIENT FILE TRANSFER, STORAGE, AND ARCHIVING.

FILE ENCRYPTION

MICROSOFT IMPLEMENTS ENCRYPTION ALGORITHMS TO SECURE FILES AND PROTECT SENSITIVE INFORMATION. ENCRYPTION ALGORITHMS LIKE AES (ADVANCED ENCRYPTION STANDARD) OR RSA (RIVEST-SHAMIR-ADLEMAN) ARE USED TO ENCRYPT FILES, MAKING THEM UNREADABLE WITHOUT THE CORRECT DECRYPTION KEY. THIS ENSURES THE CONFIDENTIALITY AND INTEGRITY OF FILES, PREVENTING UNAUTHORIZED ACCESS OR TAMPERING.



THANK YOU
