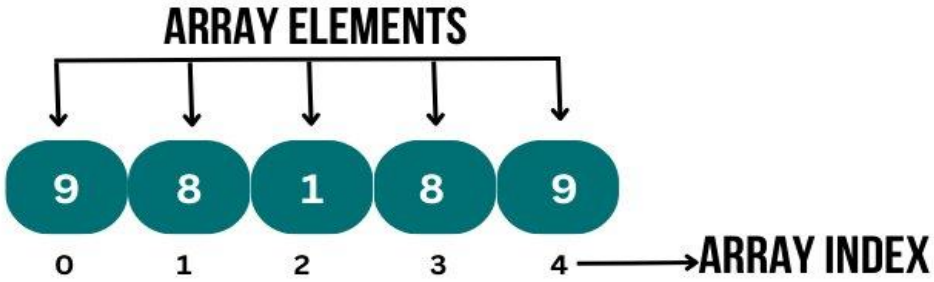
DATA

ASSIGNMENT OF SEMESTER - 2

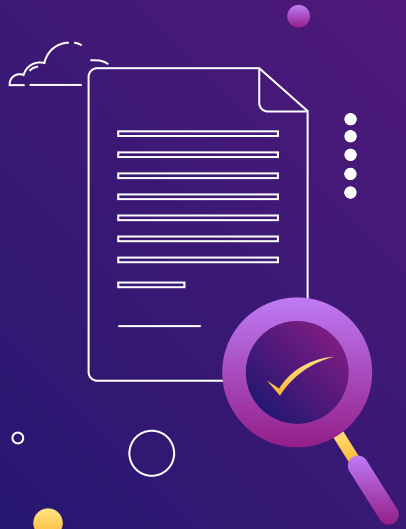
DATA STRUCTURES REPORT

Report On Comparison of LinkedList and Dynamic Array



shiksha online

ARRAY LIST VS LINKED LIST



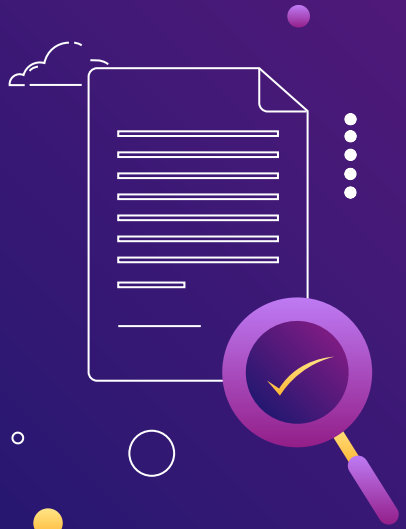
TIME COMPLEXITY

LINKED LIST AND DYNAMIC ARRAY

OPERATION	LINKED LIST	DYNAMIC ARRAY
ACCESS	O(N)	O(1)
SEARCH	O(N)	O(N)
INSERT(AT BEGINNING)	O(N)	O(N)
INSERT (AT END)	O(N)	O(1)
INSERT (AT INDEX)	O(N)	O(N)
DELETION (AT BEGINNING)	O(1)	O(N)
DELETION (AT END)	O(N)	O(1)
DELETION (AT INDEX)	O(N)	O(N)

LINKED LIST AND DYNAMIC ARRAY

OPERATION	LINKED LIST	DYNAMIC ARRAY
REVERSE	O(N)	O(N)
ROTATION	O(N)	O(N)
MERGE	O(N)	O(N)
INTERLEAVE	O(N)	O(N)
MIDDLE	O(N)	O(1)
SIZE	O(N)	O(1)
IS EMPTY	O(1)	O(1)
SPLIT	O(1)	O(1)



SPACE COMPLEXITY

LINKED LIST AND DYNAMIC ARRAY

OPERATION	LINKED LIST	DYNAMIC ARRAY
ACCESS	O(1)	O(1)
SEARCH	O(1)	O(1)
INSERT(AT BEGINNING)	O(1)	O(1)
INSERT (AT END)	O(1)	O(1)
INSERT (AT INDEX)	O(1)	O(1)
DELETION (AT BEGINNING)	O(1)	O(1)
DELETION (AT END)	O(1)	O(1)
DELETION (AT INDEX)	O(1)	O(1)

LINKED LIST AND DYNAMIC ARRAY

OPERATION	LINKED LIST	DYNAMIC ARRAY
REVERSE	O(1)	O(1)
ROTATION	O(1)	O(1)
MERGE	O(1)	O(1)
INTERLEAVE	O(1)	O(1)
MIDDLE	O(1)	O(1)
SIZE	O(1)	O(1)
IS EMPTY	O(1)	O(1)
SPLIT	O(1)	O(1)

ADVANTAGES OF LINKED LIST AND DYNAMIC ARRAY

LINKED LIST	DYNAMIC ARRAY
DYNAMIC SIZE	EFFICIENT ACCESS
EFFICIENT INSERTION AND DELETIONS	EFFICIENT APPENDS
NO WASTED SPACE	MEMORY LOCALITY

DISADVANTAGES OF LINKED LIST AND DYNAMIC ARRAY

LINKED LIST	DYNAMIC ARRAY
INEFFICIENT ACCESS	FIXED SIZE
EXTRA MEMORY	INEFFICIENT INSERTIONS AND DELETIONS
INEFFICIENT SEARCH	WASTED MEMORY

REPORT BY ~ DINKAR THAKUR