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Course Title : Data structure
"Mid Assessment"

Ans: to the Q: NO: 01

(a) Ans: A data structure is a specialized for arranging, Organizing, processing, retrieving & storing data.

Array operations: Array operations means the platform which enables as to define array attributes blob a buffers that represents memeric Array of 64-bit integer or double values.

(b) Operations of data structure:

Data structure is the way of storing data in Computer's memory. so that it can be used easily & efficiently. There are different data structures used for the storage of data.

ADvantage of data structure:

1. The data structure is a good solution for storing data on framework.
2. Data structure make it easier for us to handle data.
3. Data structure also aid us in efficiently storing data.
4. Data structures are critical for planning computations.
5. As we have seen, data structure are a mechanism for arranging data into a specified structure.
6. Data structure allow us to reuse data.
7. Data structure are also used in the database administration framework industries for creating a list, storing data using B and B1 trees & so on.

(c) Any: Array types:

In Computer science, array is a data type that represents a collection of elements, each selected by one or more indices that can be computed at run time during program execution. Such a collection is usually called an array variable or array value.

Array Operations: Array operators are formed on vectors and matrices. The platform.array operators enables us to define array attributes blob attributes that represented memonics array of 64 bit integer or double values. see array-Attribute expression Variables, we can use one of the following like system variations of the array operator ([]) to reference specific elements of an array attribute in expressions.

Ans: to the Q: No: 02

(a) Basic Operations of stack:

There are basically three operations that can be performed on stacks. They are:-

1. Inserting an item into a stack. (push)
2. Deleting an item from the stack (pop)
3. Displaying the contents of the stack (peek on top)

Stack's Application: A stack is widely used linear data structure in modern Computers in which insertions & deletions of an elements can occur only at one end, and top of the stacks. It is used in all those applications in which data must be stored & retrieved in the last.

Various applications of stack in data structure:-

a. Evaluation of Arithmetic Expressions.
b. Backtracking
c. Delimiter checking.
d. Reverse a data
e. Processing function Calls.

(b) Ans: By Graph representation, we simply mean the technique to be used to store some graph into the Computer's memory. There are two ways to store or represent graph into the computer's memory.

1. Sequential representation: In sequential represented there is a use of an adjacency matrix to represented the mapping between vertices & edges of the graph directed graph, weighted directed graph & weighted undirected graph.

2. Linked list representation: An adjacency list is used in the linked represented to store the graph in the computer's memory. It is efficient in terms of storge as we only have to store the values for edges.

(c) Ans:. The formula for calculating arithmetic mean is (Sum of all observations)/(Number of observations).

for example, the arithmetic mean of a set of numbers {10, 20, 30, 40} can be found now

$$\text{Arithmetic mean} = \frac{10+20+30+40}{4}$$

$$= \frac{100}{4}$$

$$= 25 \text{ mg.}$$