

Data Structures And Algorithms

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This course teach us how to create efficient and fast algorithms.

Data Structure and Algorithms are two different type of things.

Data Structure:- Arrangement of data so that they can be used efficiently in memory.
(data items)

Algorithms:- Sequence of steps on data using efficient data structure to ~~solve~~ solve a given problem.

Other Terminology

Data: Collection of information in permanent storage for faster retrieval and updation.

Data warehousing:- Management of huge amount of legacy data for better analysis.

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Big data:- Analysis of too large or complex data which cannot be dealt with traditional data processing application.

Data structure and Alg. are nothing new. If you have done programming in any language like C you must have use arrays → A data structure and some sequence of program step to solve a problem - Algorithm.

Memory layout of C programs.

When the program starts, its code is copied to the main memory.

Stack hold the memory occupied by the functions.

Heap
Stack
Uninitialized Data
Initialized Data
code Segment

Heap contain the data which is requested by the program as dynamic memory.

memory (RAM)

Initialized and uninitialized data segments hold initialized and uninitialized global variables respectively.