

[DSA Tutorial](#) [Data Structures](#) [Algorithms](#) [Array](#) [Strings](#) [Linked List](#) [Stack](#) [Queue](#) [Tree](#) [Graph](#) [Se](#)[Related Articles →](#)

What is Data Structure?

[Read](#)[Courses](#)[Practice](#)

A data structure is a way of organizing and storing data in a computer so that it can be accessed and used efficiently. It refers to the logical or mathematical representation of data, as well as the implementation in a computer program.

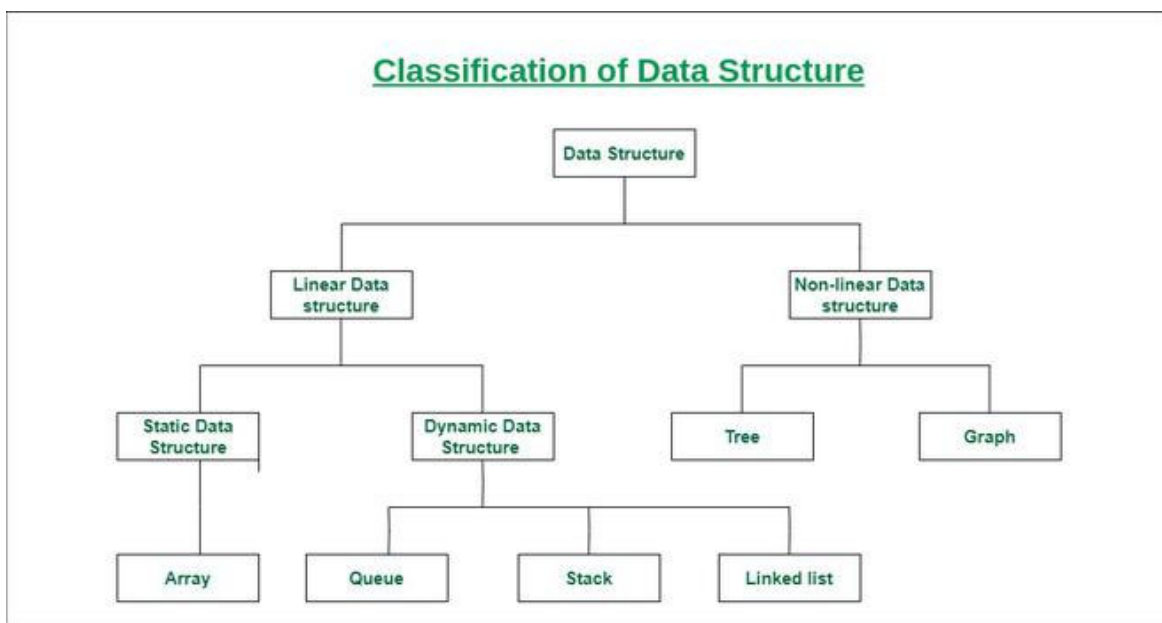
Classification:

Data structures can be classified into two broad categories:

- **Linear Data Structure:** A data structure in which data elements are arranged sequentially or linearly, where each element is attached to its previous and next adjacent elements, is called a linear data structure. Examples are array, stack, queue, etc.
- **Non-linear Data Structure:** Data structures where data elements are not placed sequentially or linearly are called non-linear data structures. Examples are trees and graphs.

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Got It !



Classification of Data Structure

To learn more about different data structures, refer to [this article](#).

Applications of Data Structures:

Data structures are used in a wide range of computer programs and applications, including:

- **Databases:** Data structures are used to organize and store data in a database, allowing for efficient retrieval and manipulation.
- **Operating systems:** Data structures are used in the design and implementation of operating systems to manage system resources, such as memory and files.
- **Computer graphics:** Data structures are used to represent geometric shapes and other graphical elements in computer graphics applications.
- **Artificial intelligence:** Data structures are used to represent knowledge and information in artificial intelligence systems.

Advantages of Data Structures:

The use of data structures provides several advantages, including:

- **Efficiency:** Data structures allow for efficient storage and retrieval of data

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

- **Flexibility:** Data structures provide a flexible way to organize and store data, allowing for easy modification and manipulation.
- **Reusability:** Data structures can be used in multiple programs and applications, reducing the need for redundant code.
- **Maintainability:** Well-designed data structures can make programs easier to understand, modify, and maintain over time.

What else can you read?

- [Introduction to Data Structures](#)
- [What is Data Structure: Types, Classifications and Applications](#)
- [Difference between data type and data structure](#)
- [Difference between Linear and Non-linear Data Structures](#)

Feeling lost in the world of random DSA topics, wasting time without progress? It's time for a change! Join our DSA course, where we'll guide you on an exciting journey to master DSA efficiently and on schedule.

Ready to dive in? Explore our Free Demo Content and join our DSA course, trusted by over 100,000 geeks!

- [DSA in C++](#)
- [DSA in Java](#)
- [DSA in Python](#)
- [DSA in JavaScript](#)

Recommended Problems

Frequently asked DSA Problems

Solve Problems

Last Updated : 07 Jul, 2023

40

Previous

Next

10 Most Important Data Structures For Various load balancing techniques used

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Share your thoughts in the comments

Add Your Comment

Similar Reads

Static Data Structure vs Dynamic Data Structure

Is array a Data Type or Data Structure?

Data Structure Alignment : How data is arranged and accessed in Computer Memory?

Difference between data type and data structure

Applications of Queue Data Structure

Data Structure for a single resource reservations

A data structure for n elements and $O(1)$ operations

Advantages of Trie Data Structure

Tango Tree Data Structure

Dynamic Disjoint Set Data Structure for large range values

A **avantikn82i**

Article Tags : [Definitions and Meanings](#) , [Picked](#) , [DSA](#)

Additional Information

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

201305



Company

About Us
Legal
Careers
In Media
Contact Us
Advertise with us
GFG Corporate Solution
Placement Training Program

Explore

Job-A-Thon Hiring Challenge
Hack-A-Thon
GfG Weekly Contest
Offline Classes (Delhi/NCR)
DSA in JAVA/C++
Master System Design
Master CP
GeeksforGeeks Videos
Geeks Community

Languages

Python
Java
C++
PHP
GoLang
SQL
R Language
Android Tutorial
Tutorials Archive

DSA

Data Structures
Algorithms
DSA for Beginners
Basic DSA Problems
DSA Roadmap
Top 100 DSA Interview Problems
DSA Roadmap by Sandeep Jain
All Cheat Sheets

Data Science & ML

Data Science With Python
Data Science For Beginner
Machine Learning Tutorial

HTML & CSS

HTML
CSS
Web Templates

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#)

[Pandas Tutorial](#)[Tailwind CSS](#)[NumPy Tutorial](#)[SASS](#)[NLP Tutorial](#)[LESS](#)[Deep Learning Tutorial](#)[Web Design](#)

Python

Computer Science

[Python Programming Examples](#)[GATE CS Notes](#)[Django Tutorial](#)[Operating Systems](#)[Python Projects](#)[Computer Network](#)[Python Tkinter](#)[Database Management System](#)[Web Scraping](#)[Software Engineering](#)[OpenCV Python Tutorial](#)[Digital Logic Design](#)[Python Interview Question](#)[Engineering Maths](#)

DevOps

Competitive Programming

[Git](#)[Top DS or Algo for CP](#)[AWS](#)[Top 50 Tree](#)[Docker](#)[Top 50 Graph](#)[Kubernetes](#)[Top 50 Array](#)[Azure](#)[Top 50 String](#)[GCP](#)[Top 50 DP](#)[DevOps Roadmap](#)[Top 15 Websites for CP](#)

System Design

JavaScript

[High Level Design](#)[JavaScript Examples](#)[Low Level Design](#)[TypeScript](#)[UML Diagrams](#)[ReactJS](#)[Interview Guide](#)[NextJS](#)[Design Patterns](#)[AngularJS](#)[OOAD](#)[NodeJS](#)[System Design Bootcamp](#)[Lodash](#)[Interview Questions](#)[Web Browser](#)

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Class 11
Class 10
Class 9
Class 8
Complete Study Material

Physics
Chemistry
Biology
Social Science
English Grammar

Commerce

Accountancy
Business Studies
Economics
Management
HR Management
Finance
Income Tax

UPSC Study Material

Polity Notes
Geography Notes
History Notes
Science and Technology Notes
Economy Notes
Ethics Notes
Previous Year Papers

SSC/ BANKING

SSC CGL Syllabus
SBI PO Syllabus
SBI Clerk Syllabus
IBPS PO Syllabus
IBPS Clerk Syllabus
SSC CGL Practice Papers

Colleges

Indian Colleges Admission & Campus Experiences
List of Central Universities - In India
Colleges in Delhi University
IIT Colleges
NIT Colleges
IIIT Colleges

Companies

META Owned Companies
Alphabet Owned Companies
TATA Group Owned Companies
Reliance Owned Companies
Fintech Companies
EdTech Companies

Preparation Corner

Company-Wise Recruitment Process
Resume Templates
Aptitude Preparation
Puzzles
Company-Wise Preparation

Exams

JEE Mains

More Tutorials

Software Development

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

NEET

SAP

UGC NET

SEO - Search Engine Optimization

Linux

Excel

Free Online Tools

Typing Test

Image Editor

Code Formatters

Code Converters

Currency Converter

Random Number Generator

Random Password Generator

Write & Earn

Write an Article

Improve an Article

Pick Topics to Write

Share your Experiences

Internships

@GeeksforGeeks, Sanchhaya Education Private Limited, All rights reserved

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#)