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APPLICATIONS OF DATA STRUCTURES IN REAL LIFE

ARRAYS:-

- 2D arrays (as matrix), are used in **image processing**.
- **Sudoku** or **Chess** Board are 2D arrays.
- In an **online exam** question paper numbering.
- Book titles in a **Library Management Systems.**
- Online **ticket** booking.
- **Contacts** on a cell phone.

LINKED LIST:-

- **Music Players** next, previous buttons use doubly/circular linked list based on our preference.

- **Escalators** — Circular linked List.

- Social media content “**feeds**”.

- **Train coaches** are connected to one another in a doubly-linked list fashion.

- Left/Right swipe on **Tinder** uses a doubly-linked list.

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STACKS:-

- **Undo/Redo** button/operation in word processors.
- Wearing/Removing **Bangles**.
- Pile of **Dinner Plates**.
- **Stacked chairs.**
- **Changing wearables** on a cold evening, first in, comes out at last.
- **Browser History :)** of visited websites.

QUEUES:-

- **Printer** spooler.
- Sending **emails**.
- **Car washes** queue.
- **Server** while responding to requests
- **Operating System** uses queues for job/task scheduling.

GRAPHS:-

- On all **social media networking sites**, every user is Node, uses the graph to suggest friends.

- **React's virtual DOM** uses graph data structures.

- **MS Excel** uses DAG (Directed Acyclic Graphs).

- **Flight Networks.**

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TREE:-

- **Databases** also use B-Tree data structures for indexing.
- **Domain Name Server** (DNS) also uses tree structures.
- The **file system** of computer or mobile.
- Code Compression(**zip**), **DOM** in Html.
- **Posting questions** on websites like Quora, the comments are a child of questions.

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SORTING ALGORITHM:-

- **Order things** by their value.
- **Backend Databases** (Merge Sort).
- **Playing Cards** with your friends (Insertion Sort).
- **sort**() — uses IntroSort (a hybrid of Quicksort, Heapsort, and Insertion Sort), Faster than qsort().

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