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DIV-CE2
ROLL NO-101
BATCH-B

TITLE - CAR SHOWROOM DATABASE

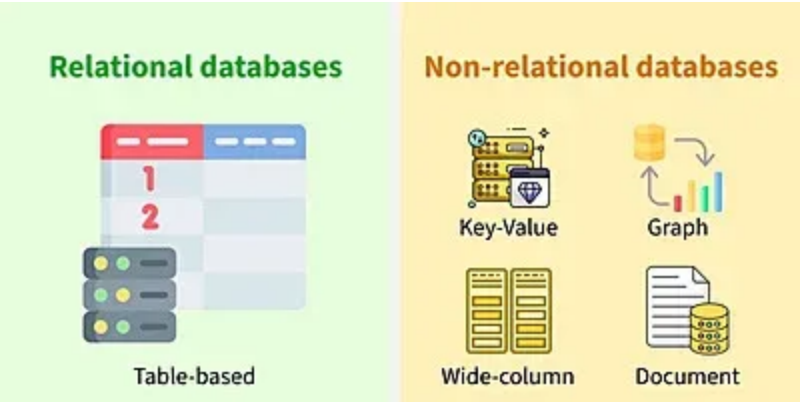
RESEARCH-

Car Showroom Management System is a desktop application which helps in managing cars, customers and employees of a car showroom. It has a graphical user interface which is easy for managers and employees to manage the daily operations and transactions. The aim of this application is to reduce the manual effort needed to manage transactions in a company.

WHAT IS DATABASE?

Data refers to raw, unorganized facts and figures, such as numbers, text, images, or symbols, that can be processed and analyzed to extract meaningful information.

- Data can exist in a raw form (unorganized) or processed form (organized and meaningful).
- A database is a structured collection of data designed for efficient storage, retrieval and manipulation.
- It serves as a centralized repository, allowing data to be accessed, managed, and updated by multiple users or applications.



Types of Databases

Databases can be classified into two primary types;-

1)Relational databases

2)NoSQL databases

No SQL databases are further divided into four types;-

1)Document-oriented

2) Key-Value

3) Wide-Column

4) Graph databases

Reference link:-https://www.geeksforgeeks.org/dbms/what-is-database/

ANALYZE:-

Data Representation: Car information is encapsulated within a struct in C, containing fields for the car's number and price. An array of these struct instances acts as the database for storing multiple car records.

● Data Input/Reading: The program reads car data into the array of structures. This could be from a predefined set within the code, a user input loop, or potentially from a file.

● Sorting Algorithm: A sorting algorithm is implemented to arrange the car records by price in descending order. Common choices for this in C include.

● Bubble Sort: Simple to implement but less efficient for larger datasets.

Selection Sort: Also relatively straightforward, finding the maximum element and placing it in the correct position.

● Quick Sort or Merge Sort: More efficient for larger datasets, offering better average-case time complexity.

Output Display: After sorting, the program iterates through the sorted array of structures and prints the details (car number and price) for each car.

IDEATE:-

1-Start

2-Input enter car number,price,model

3-Process sorting according to highest price to lowest price.

4-Print output detail of cars .

5-End

Problem Statement-

BUILD:-

```
#include <stdio.h>
#include <string.h>

struct Car {
    int number;
    float price;
    char model[30];
};

void bubbleSort(struct Car cars[], int n) {
    struct Car temp;
    for (int i = 0; i < n-1; i++) {
        for (int j = 0; j < n-i-1; j++) {
            if (cars[j].price < cars[j+1].price) {
                temp = cars[j];
                cars[j] = cars[j+1];
                cars[j+1] = temp;
            }
        }
```

```
    }
}

void displayCars(struct Car cars[], int n) {
        printf("\nCar Information (Sorted by Price, Highest to Lowest):\n");
    printf("-------------------------------------------------\n");
    printf("Car Number\tModel\t\tPrice\n");
    printf("---------------------------------------\n");
    for (int i = 0; i < n; i++) {
            printf("%d\t\t%s\t\t%.2f\n", cars[i].number, cars[i].model, cars[i].price);
    }
}

int main() {
    struct Car cars[3];

    for (int i = 0; i < 3; i++) {
        printf("Enter details for car %d:\n", i + 1);
```

```
        printf("\nEnter car number: ");
        scanf("%d", &cars[i].number);
        printf("\nEnter car model: ");
        scanf("%s", &cars[i].model);
        printf("\nEnter car price: ");
        scanf("%f", &cars[i].price);
        printf("\n");
    }

    bubbleSort(cars, 3);

    displayCars(cars, 3);

    return 0;
}
```

TEST-

```
Enter details for car 1:
Enter car number: 4151
Enter car model: endevour
Enter car price: 5000000

Enter details for car 2:
Enter car number: 7383
Enter car model: fortuner
Enter car price: 7000000

Enter details for car 3:
Enter car number: 2131
Enter car model: eco
Enter car price: 100000


Car Information (Sorted by Price, Highest to Lowest):
-----------------------------------------------------
Car Number  Model       Price
-----------------------------------------
7383        fortuner        7000000.00
4151        endevour        5000000.00
2131        eco     100000.00


=== Code Execution Successful ===
```