Activity 6: Car Availability Check

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Research:Before creating the project, some basic research was done on how car availability systems work:

a) Real-Life System Study
In real life, companies like car rentals or parking systems maintain:
A list/database of cars
Their model/name
Unique car numbers
Status (available/not available)
A simple version of this system can be made using:
Structures (to store different information of each car)
Arrays (to store multiple car records)
Searching (to check if the entered number matches any stored number)

b) Why Structure Is Used?
A structure in C groups related information together.
Example:
For each car → name + car number
So struct car is perfect to store multiple details.

c) Why Is Searching Needed?

To check if the entered number exists or not.
Here we use Linear Search because only 2 cars are used (small dataset).

Ideat:

The idea behind this project is:

“To create a small car availability checking system using C programming”
It simulates a mini version of real-world applications like:
Car rental system
Parking management system
Transport department data system
This project demonstrates:
Use of structures for storing records
Use of arrays for multiple entries
Searching technique to find matching data
User input and output interaction

Analyse:This project uses a very simple logic:

Step-by-Step Internal Working
This is my project code that gives me research analysis idea1. The user enters details of 2 cars.
2. These details are stored inside an array of structures.
3. The user enters a number to check.
4. The program compares input with stored car numbers.
5. If a match → Car Available
6. If no match → Invalid Number

Advantages
Easy to understand
Uses basic C concepts
No complex libraries, suitable for beginners

Build :

```
#include <stdio.h>

struct car {
    char name[50];
    int number;
};
```

```
int main() {
    struct car c[2];
    int car_number;
    printf("Total Cars List:\n");
    printf("1.Baleno No:8074\n");
    printf("2.Swift No:2345\n");
    printf("3.scorpio No:5678\n");


    for (int i = 0; i < 2; i++) {
        printf("\nCar%d\n", i + 1);
        printf("Enter car name: ");
        scanf(" %s", c[i].name);
        printf("Enter car number: ");
        scanf("%d", &c[i].number);
    }

    printf("\nEnter car number to check availability: ");
    scanf("%d", &car_number);

    int i;
    for (i = 0; i < 2; i++) {
        if (c[i].number == car_number) {
            printf("\nCar is AVAILABLE.\n");
            printf("Car Name: %s\n", c[i].name);
            break;
        }
    }

    if (i == 2) {
        printf("\nCar is not availabel now\n");
    }

    return 0;
}
```

Testing:

1)
Total Cars List:
1.Baleno No:8074
2.Swift No:2345
3.scorpio No:5678

Car1
Enter car name: baleno
Enter car number: 8074

Car2
Enter car name: swift
Enter car number: 2345

Enter car number to check availability: 2345

Car is AVAILABLE.
Car Name: swift

2)
Total Cars List:
1.Baleno No:8074
2.Swift No:2345
3.scorpio No:5678

Car1
Enter car name: Baleno
Enter car number: 8074

Car2
Enter car name: swift
Enter car number: 2345

Enter car number to check availability: 5678

Car is not availabel now