```
[Running] cd "c:\Users\Papu\C_plusplus25\Lab4
c1 = 4 + 5i
c2 = 2 + -3i
Sum = 6 + 2i
Difference = 2 + 8i
Quotient = -0.538462 + 1.69231i
```

```
[Running] cd "c:\Users\Papu\C_plusplus25\Lab4\" && g++ Q2.cpp -o Q2 &&
"c:\Users\Papu\C_plusplus25\Lab4\"Q2
Constructor: "C++ Fundamentals" with 300 pages
Constructor: "Data Structures" with 450 pages
Constructor: "Algorithms" with 500 pages

---Library Contents---
Title: C++ Fundamentals, Pages: 300
Title: Data Structures, Pages: 450
Title: Algorithms, Pages: 500

---End of Program---
Destructor: "Algorithms" destroyed
Destructor: "Data Structures" destroyed
Destructor: "C++ Fundamentals" destroyed

[Done] exited with code=0 in 0.869 seconds
```

```
e-Out-322wjplh.lui' '--stderr=Microsoft-MIEngine-Error-vvq55iup.fg
p' '--dbgExe=C:/msys64/ucrt64/bin/gdb.exe' '--interpreter=mi'
Constructor: "C++ Fundamentals" with 300 pages.
Constructor: "Data Structures" with 450 pages.
Constructor: "Algorithms" with 500 pages.
BookShelf constructor: Shelf initialized with 3 books.

---Library Contents---
Title: C++ Fundamentals, Pages: 300
Title: Data Structures, Pages: 450
Title: Algorithms, Pages: 500

~~~~End of Program~~~~
Destructor: "Algorithms" destroyed.
Destructor: "Data Structures" destroyed.
Destructor: "C++ Fundamentals" destroyed.
BookShelf destructor: Shelf destroyed.
PS C:\Users\Papu\C_plusplus25>
```

Lab4 Q2

Advantages/Disadvantages

Method1 advantages
- Simpler syntax (in my opinion)
Destructor not necessary (data on stack)

Method1 disadvantages
Arrays are not flexible with data extraction or creation, fixed size.
And extraction of data with a for loop is kind of a pain.

Method2 advantages
The class gives us more control over the data (encapsulation)
Dynamic memory allocation makes the data usage more flexible.

Method2 disadvantages
Deletion of data on heap is required manually.
I find personally the syntax to be a bit less intuitive.

What does the destructor do in cases? Is it necessary?

Case1: Destructor is called automatically,
Basically it's just an added message in the first case.

Case2: Destructor is necessary and not just a flair.
Without the destructor the data will not be deleted.

```
bin/gdb.exe' '--interpreter=mi'
How many cars do you want to enter? 2

Enter details for car 1:
Enter model: Model 1
Enter year: 2020
Enter price: 18000

Enter details for car 2:
Enter model: Model 2
Enter year: 2030
Enter price: 21000

--- Car Collection ---
Model 1 (2020) - $18000
Model 2 (2030) - $21000
Car destructor: Model 2 destroyed
Car destructor: Model 1 destroyed
CarCollection destroyed
PS C:\Users\Papu\C_plusplus25>
```

```
#1
Enter you age: 25
Enter your full name: Age: 25, Name:
#2
Enter you age: 25
Enter your full name: Papu Saroma
Age: 25, Name: Papu Saroma
PS C:\Users\Papu\C_plusplus25>
```

```
-Pid-gbkkuvae.oeu' '--dbgExe=C:/msys64/ucrt64/bin/gdb.exe' '--interpreter=mi'
Enter the number of cars: 2
Car 1 type:
[1] Electric
[2] Gasoline
[3] Hybrid
Enter type: 1
Enter model: Tesla Something XY
Enter year: 2024
Enter price: 26999
Enter battery size (kWh): 97
Car 2 type:
[1] Electric
[2] Gasoline
[3] Hybrid
Enter type: 3
Enter model: Hybrid Car
Enter year:  2026
Enter price: 23000
Enter battery size (kWh): 75
Enter fuel capacity (liters): 7.5

--- Fleet information ---
Car 1: Model: Tesla Something XY, Year: 2024, Price: $26999, Battery Size: 97 kWh
Car 2: Model: Hybrid Car, Year: 2026, Price: $23000, Battery Size: 75 kWh, Fuel Capacity: 7.5 liters

--- Destroying fleet ---
Destroying electric car: Tesla Something XY
Destroying hybrid car: Hybrid Car
PS C:\Users\Papu\C_plusplus25>
```