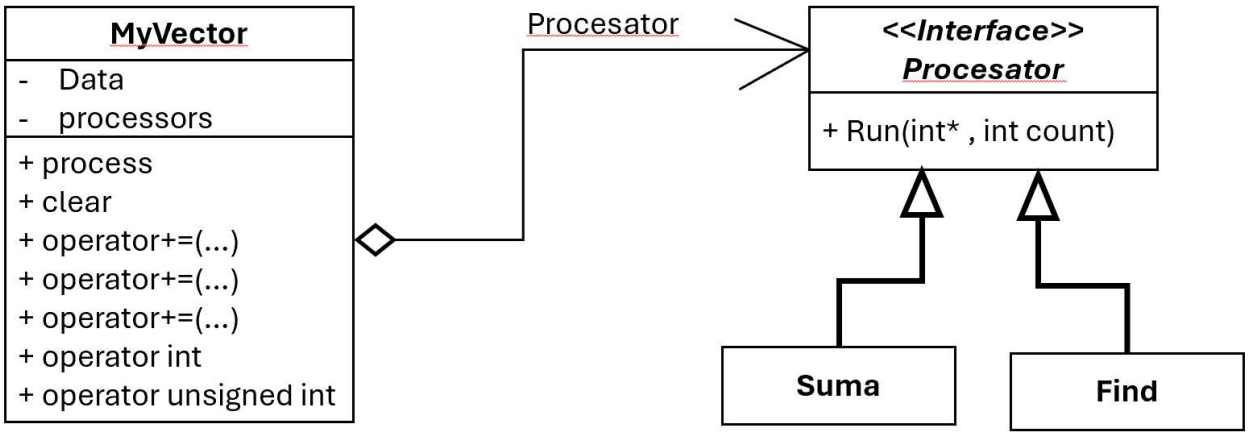
Lab exam (part 2) - P1

Consider the following UML diagram / Fie urmatoarea diagrama UML:



Build all the files with the classes described in the above diagram so that the following code / Construiți fișierele header si cpp corespunzătoare diagramei de mai sus astfel incat:

```
#include <iostream>
#include "MyVector.h"
#include "Suma.h"
#include "Find.h"

int main()
{
    MyVector m;
    ((((((m += 1) += 2) += 3) += new Suma()) += 4) += 2);
    m += new Find([](int i) { return i == 2; });
    std::cout << "Elemente    : " << (int)m << std::endl;
    std::cout << "Procesatori : " << (unsigned int)m << std::endl;
    m.process();
    m.clear();
    (((m += {10, 10, 10, 10, 50}) += 2) += new Find([](int i) { return i == 10; })) += 50;
    std::cout << "----------------------" << std::endl;
    std::cout << "Elemente    : " << (int)m << std::endl;
    std::cout << "Procesatori : " << (unsigned int)m << std::endl;
    m.process();
    return 0;
}
```

will output upon execution / va scrie pe ecran în urma execuției:

```
Elemente    : 5
Procesatori : 2
Suma = 12
Find = 2 elemnts
----------------------
Elemente    : 7
Procesatori : 3
Suma = 142
Find = 1 elemnts
Find = 4 elemnts
```

Observations/Observatii:

- You **can** use std containers
- You will need to deduce the constructors (if any) for each class from by looking into the main.cpp provided

Grading:

G1	Organize your project in 8 files: **main.cpp**, **Procesator.h**, **MyVector.h**, **MyVector.cpp**, **Suma.h**, **Suma.cpp**, **Find.h**, **Find.cpp**	2p
G2	The files **MyVector.h, Suma.h, Find.h, Procesator.h** includes a correct C++ implementation of the UML diagram	3p
G3	Implementation of the method **MyVector::process** method	3p
G4	Implementation of the method **MyVector::clear** method	1p
G6	Implementation of the method **operator+=** for MyVector (to add elements)	3p
G6	Implementation of the method **operator+=** for MyVector (to add processors)	3p
G7	Implementation of the method **operator+=** for MyVector (to add an initialization list)	4p
G8	Correct implementation of Sum procesator	3p
G9	Correct implementation of Find procesator	4p
G10	Correct implementation for Procesator.h	1p
G11	The program compiles and upon execution produces the expected results	3p