Design prac5

MapGeneric: there are empty constructor MapGeneric, and pure virtual function f and map function (argument is a vector ,and return is a vector).

MapSquare: I define a f function to return the squared integer F(n)=n*n, then this class inherent from MapGeneric in order to pass the pure virtual function f.

MapAbusoluteValue: I redefine a f function to return the integer f(n)=|n|, then this class inherent from MapGeneric in order to pass the pure virtual function f;

MapTriple:I redefine a fucniton to return the integer f(n)=3*n, then this class inherent from MapGeneric in order to pass the pure virtual function f;

FilterGeneric: there are empty constructor FilterGeneric , and pure virtual function (argument is a vector, return a bool value). Then I used a counter to get location of this

FilterNonPositive: I define a g function to filter the Non positive interge, if g(n) == true, then save that value .

FilterForTwoDigitPositive: I define a g function to filter two digit positive number , if the value from 10 to 99 then return true.

FilterOdd: I define a g function to filter even number , if number %2==1 return true;

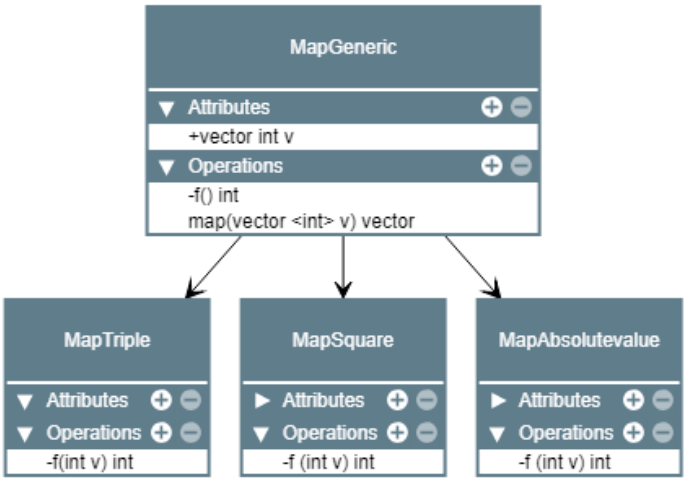
FilterAboluteValue:I define a g function to filter negative number , if number is less than 0 ,then I return true;l

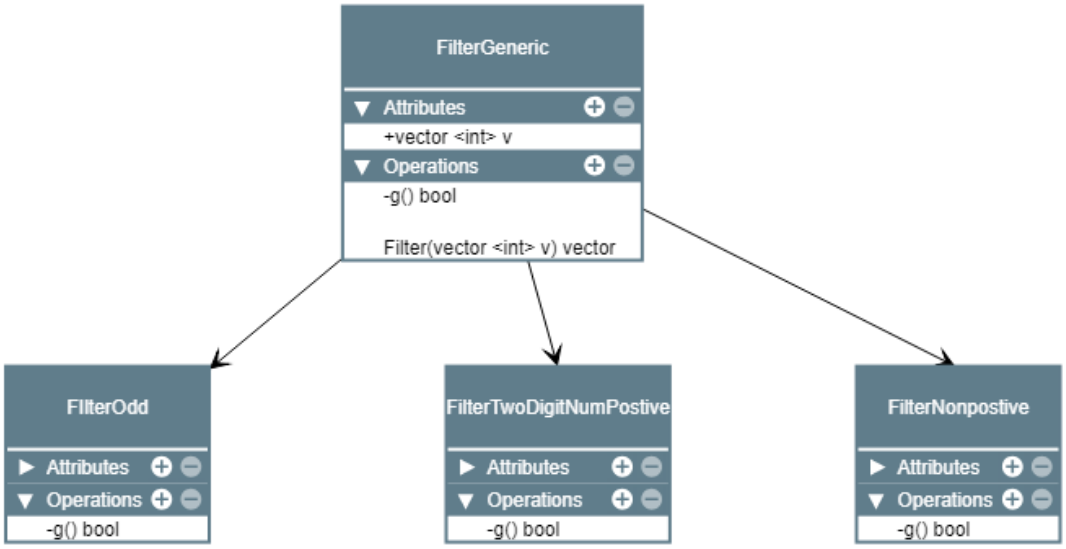
ReduceGeneric: I define a reduce function to get value from reduce two input, then using recrusive function ,finally I return one value

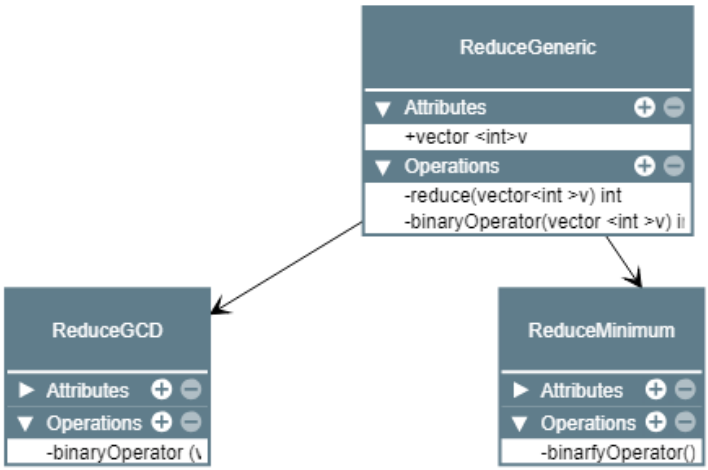
ReduceMinimum： I define a reduce function to calculate the minimum value

ReduceGcd: I define a reduce function to calculate the GCD value;

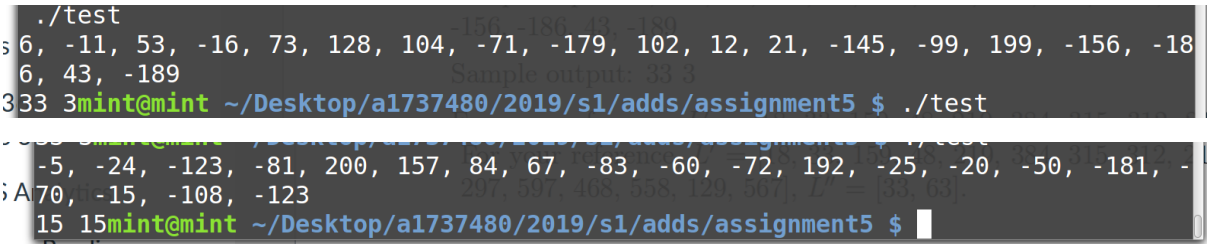
UML Diagram


MapGeneric
Attributes
+vector int v
Operations
-f() int
map(vector <int> v) vector
MapTriple
Attributes
Operations
-f(int v) int
MapSquare
Attributes
Operations
-f (int v) int
MapAbsolutevalue
Attributes
Operations
-f (int v) int


FilterGeneric
Attributes
+vector <int> v
Operations
-g() bool
Filter(vector <int> v) vector
FIlterOdd
Attributes
Operations
-g() bool
FilterTwoDigitNumPostive
Attributes
Operations
-g() bool
FilterNonpostive
Attributes
Operations
-g() bool


ReduceGeneric
Attributes
+vector <int>v
Operations
-reduce(vector<int >v) int
-binaryOperator(vector <int >v) i
ReduceGCD
Attributes
Operations
-binaryOperator (\
ReduceMinimum
Attributes
Operations
-binarfyOperator()

Test



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