Go Java Core Project

Group #9

“**Fire Phoenix**”

Calculator for two-dimensional arrays

Members:

- Aleksey Timonov
- Viktor Mazurenko

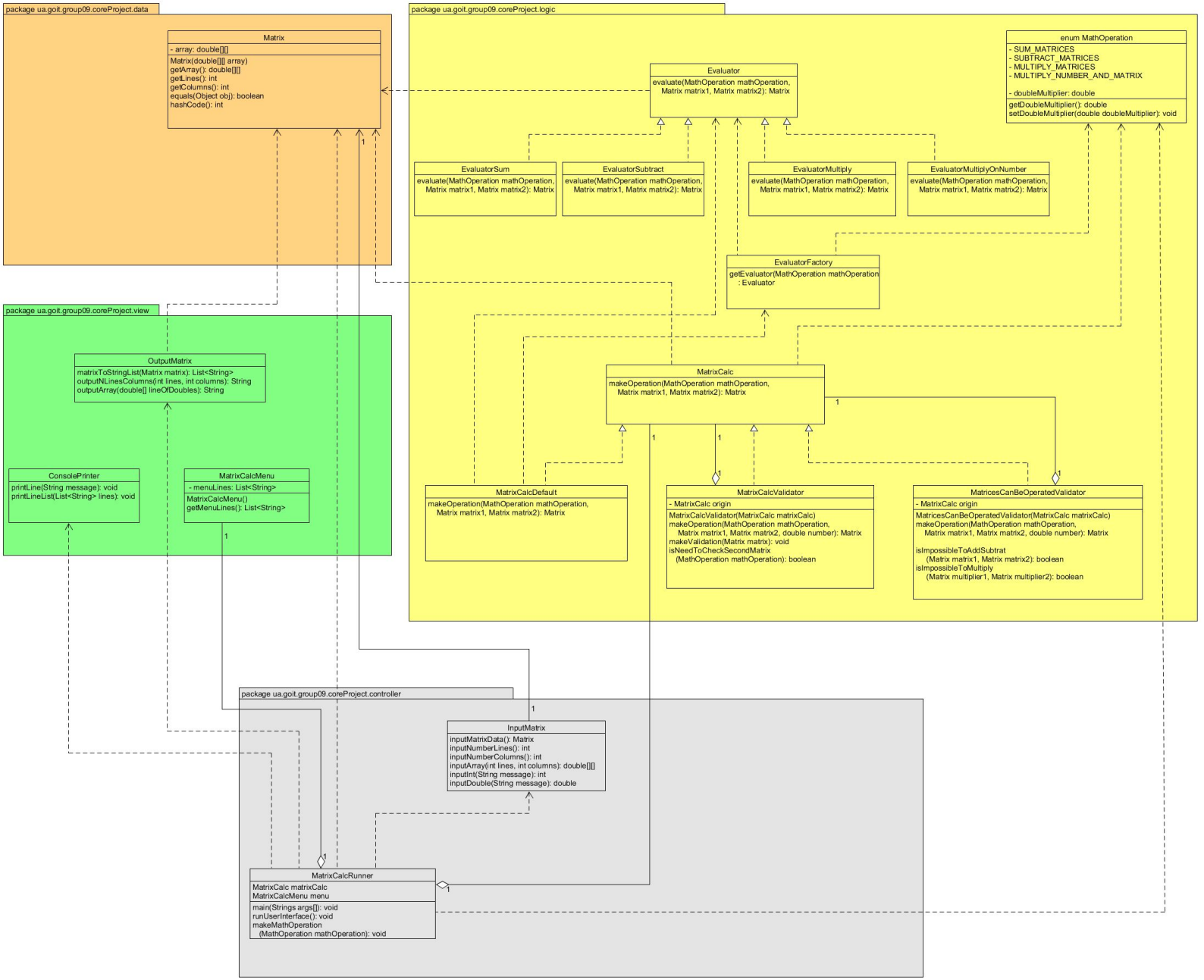
Mentor:

- Artur Dzidzoiev

Key decisions

- MVC Pattern
- Immutable class Matrix for data storage
- Validating Decorators
- Factory Method Pattern for math operations
- Algorithms for math operations with matrices
- Custom Exceptions
- Unit tests

UML Diagram


package ua.goit.group09.coreProject.data
Matrix
- array: double[][]
Matrix(double[][] array)
getArray(): double[][]
getLines(): int
getColumns(): int
equals(Object obj): boolean
hashCode(): int
package ua.goit.group09.coreProject.logic
enum MathOperation
- SUM_MATRICES
- SUBTRACT_MATRICES
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makeValidation(Matrix matrix): void
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outputArray(double[] lineOfDoubles): String
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printLineList(List<String> lines): void
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inputNumberLines(): int
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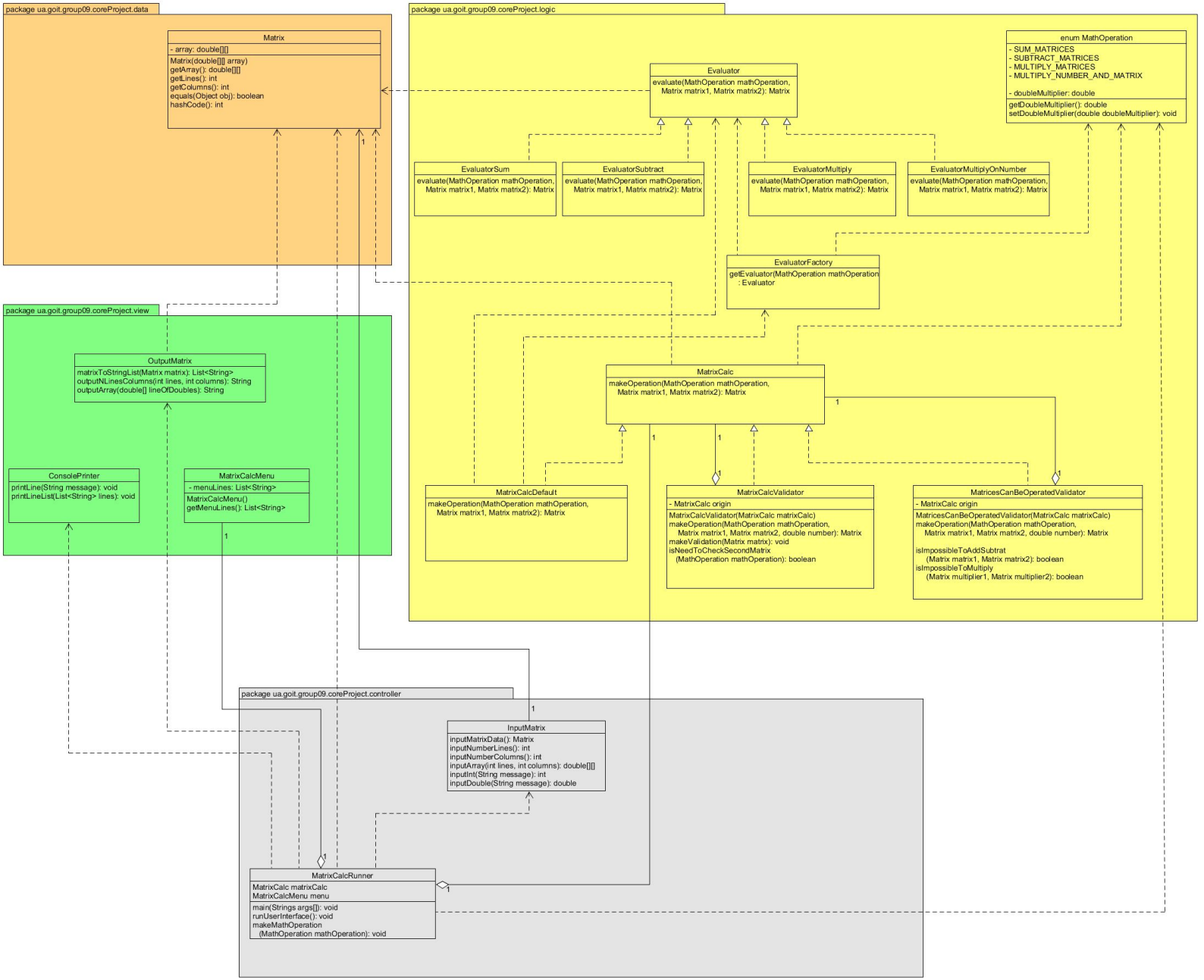
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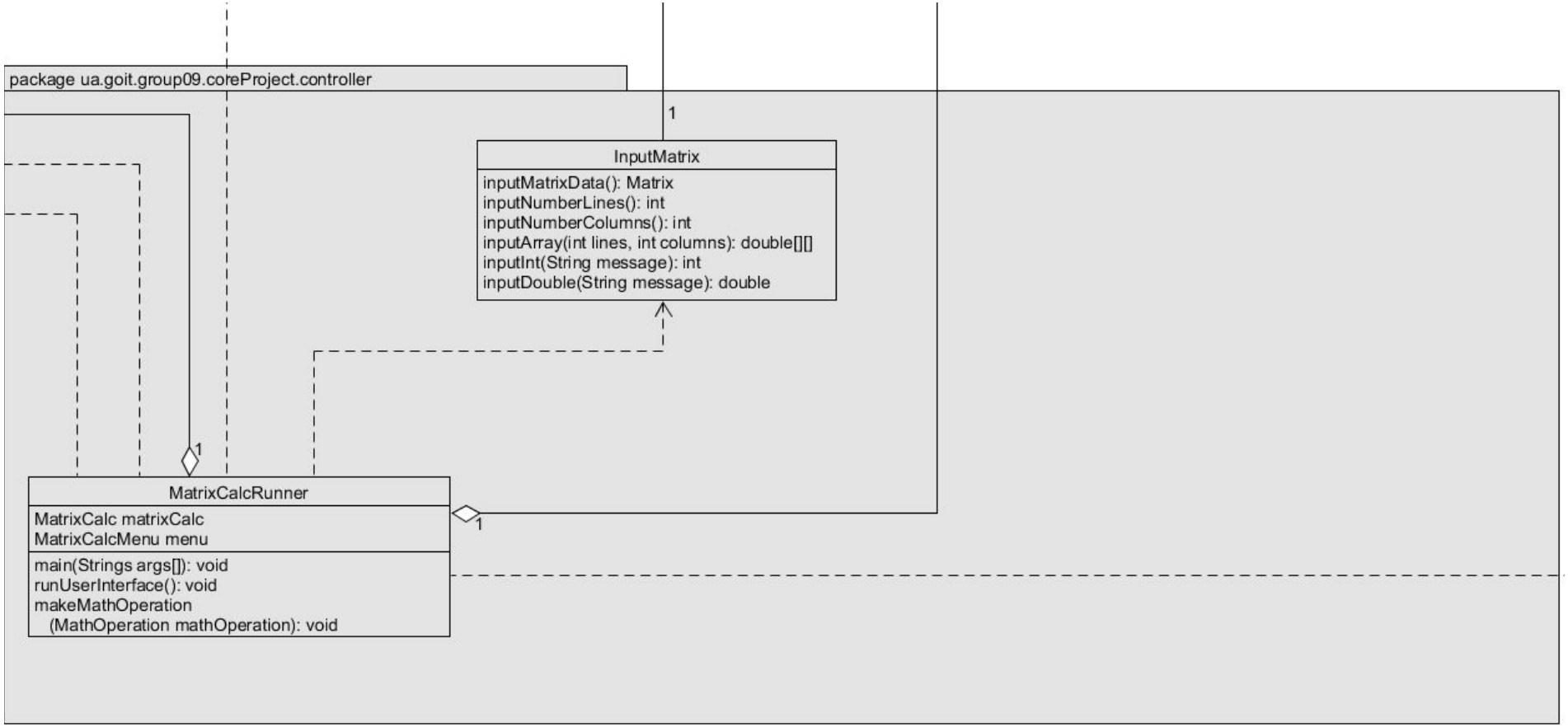
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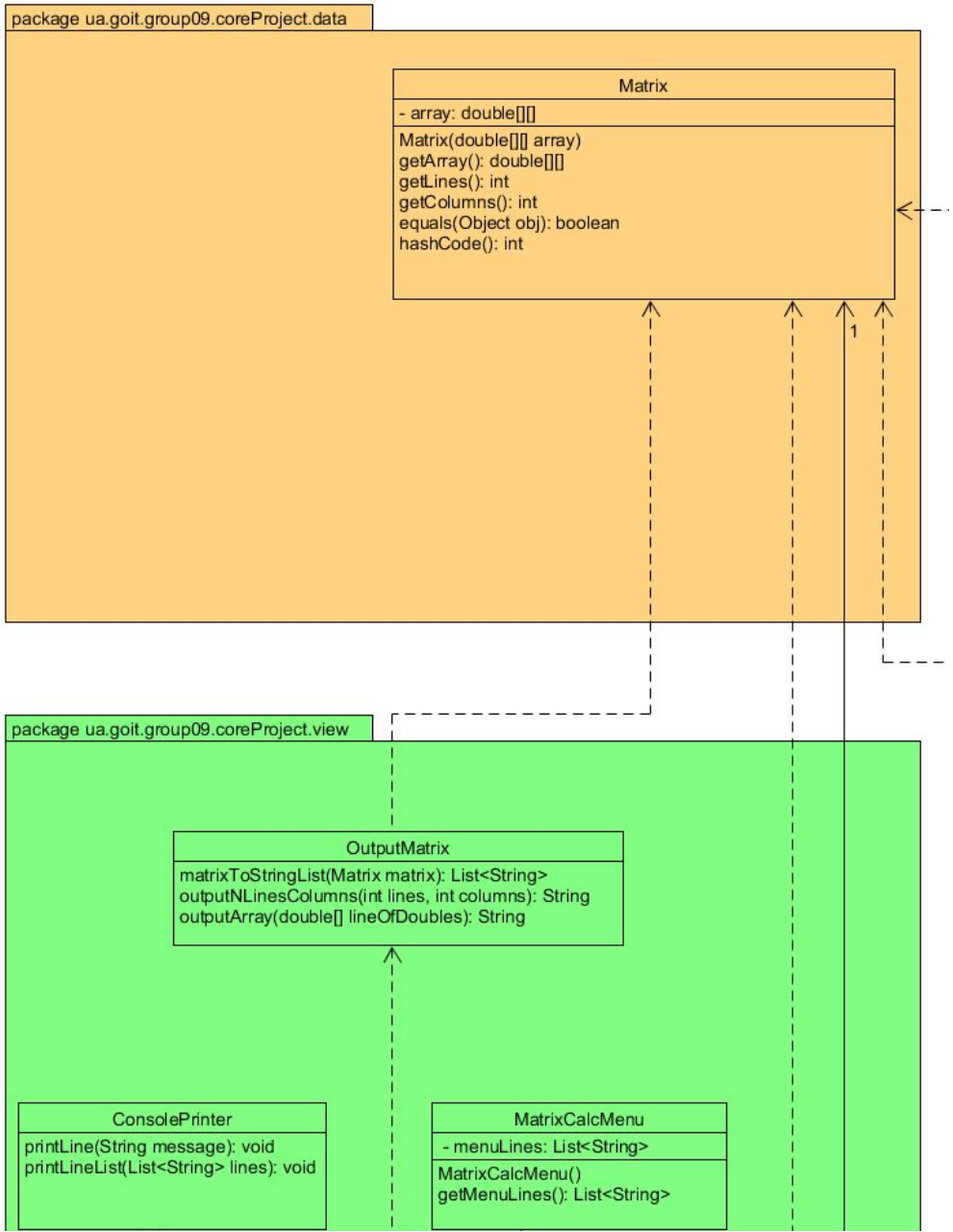
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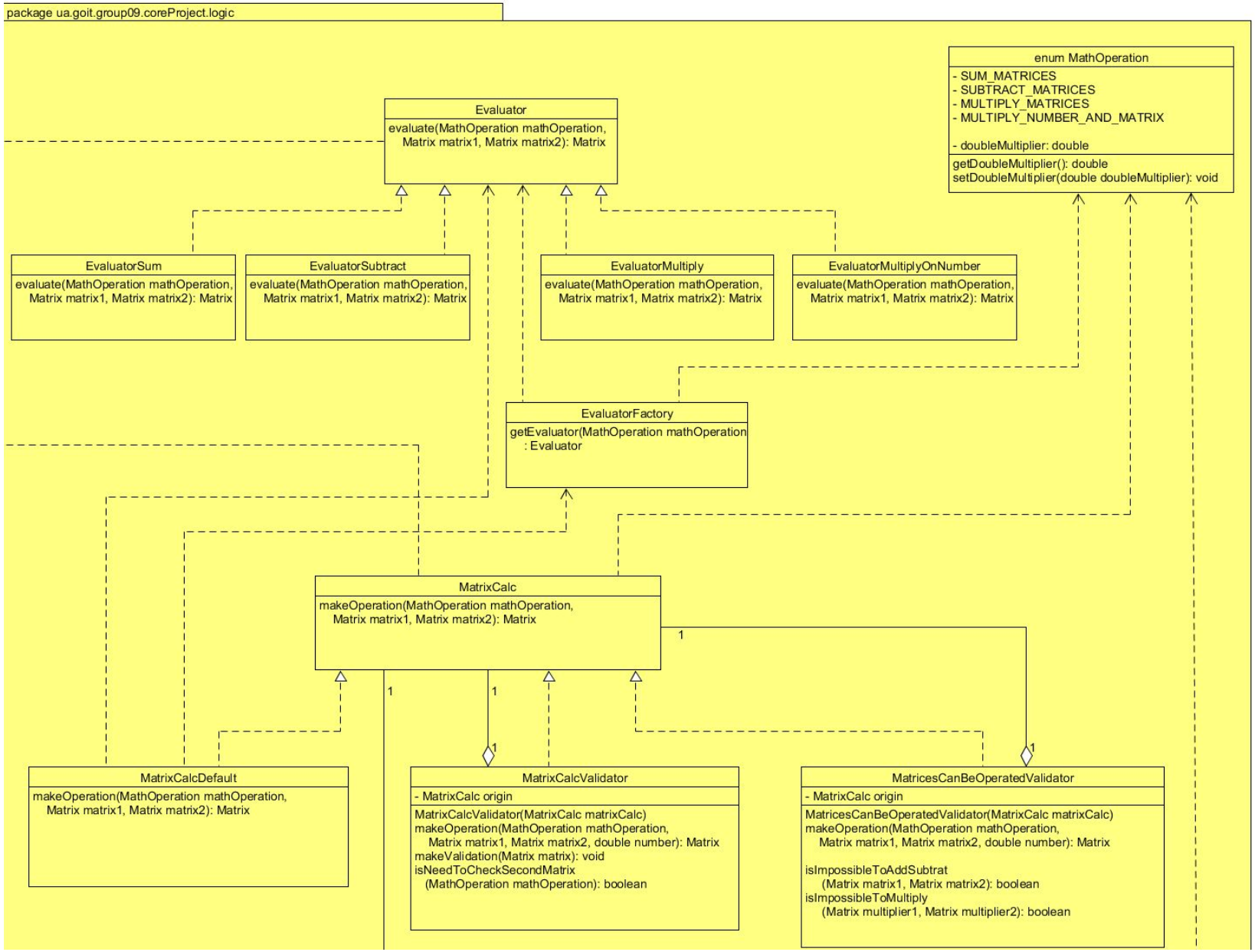
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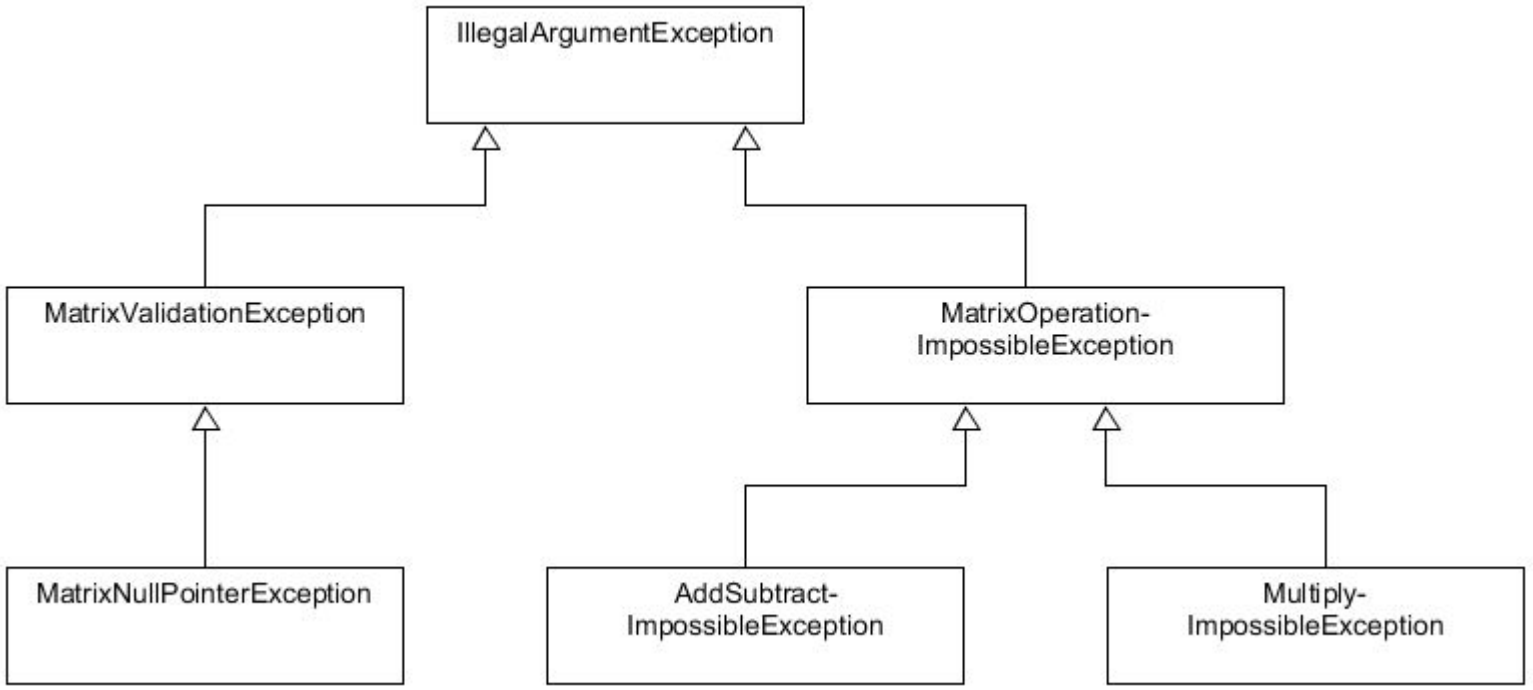
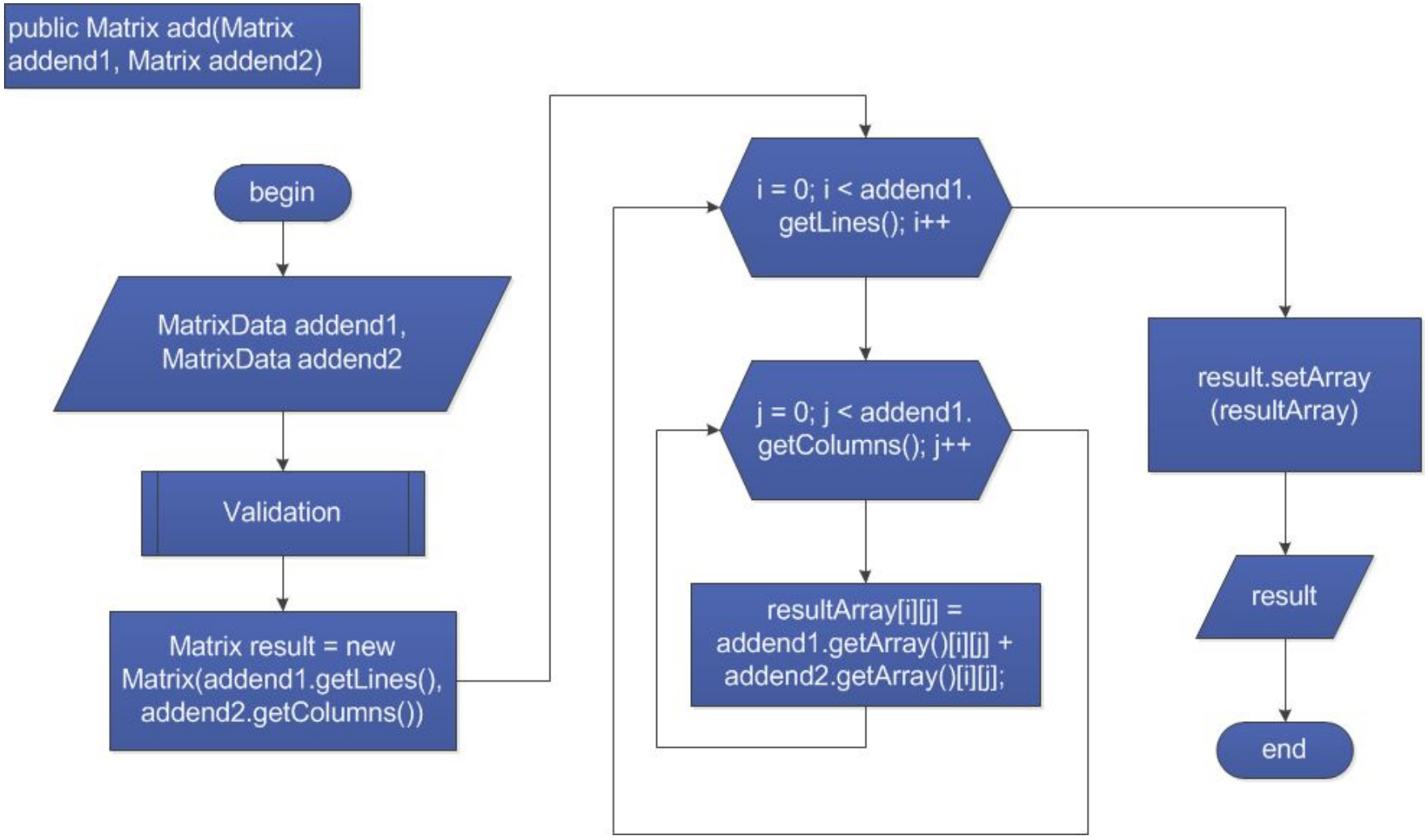
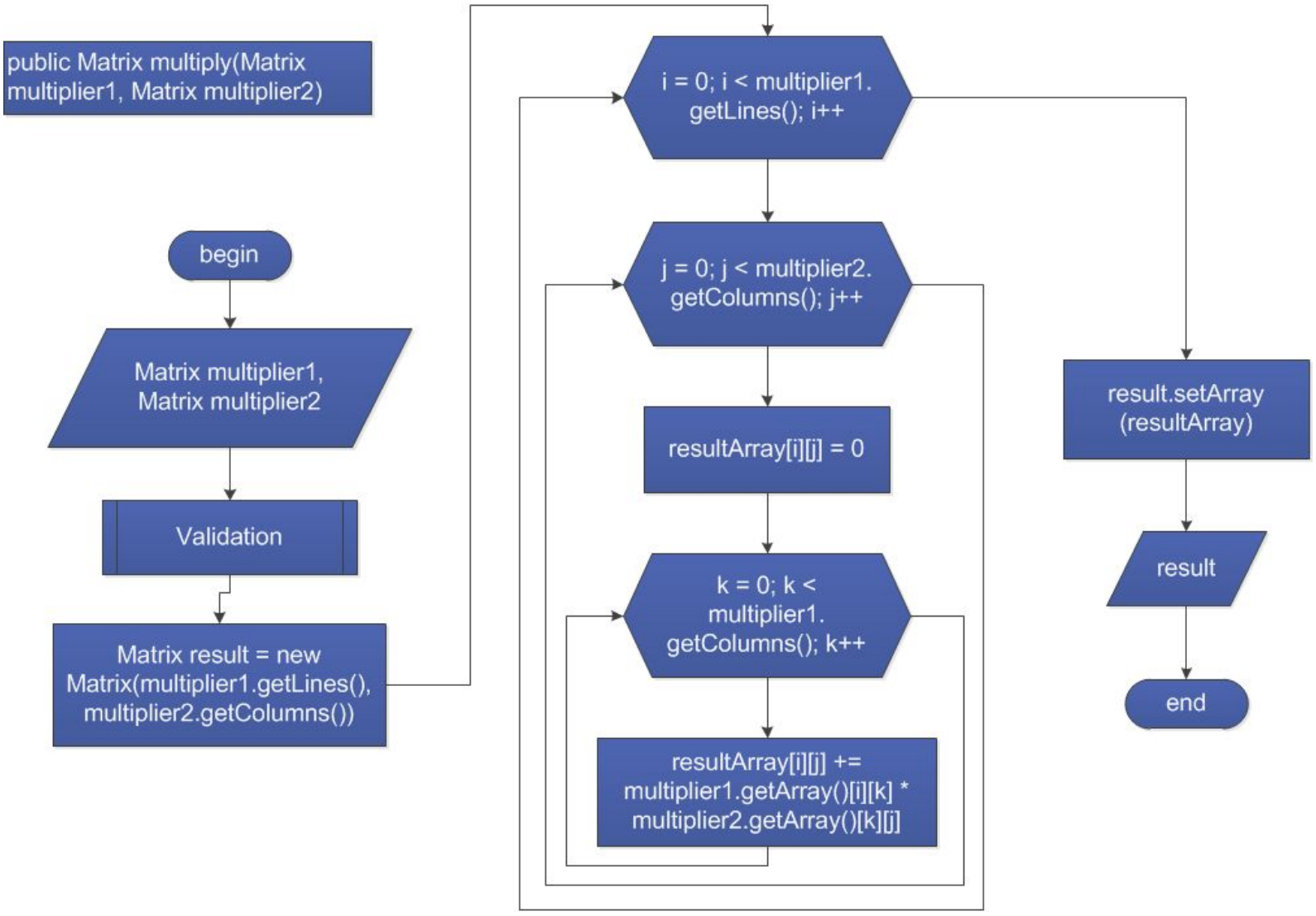
Exceptions UML Diagram



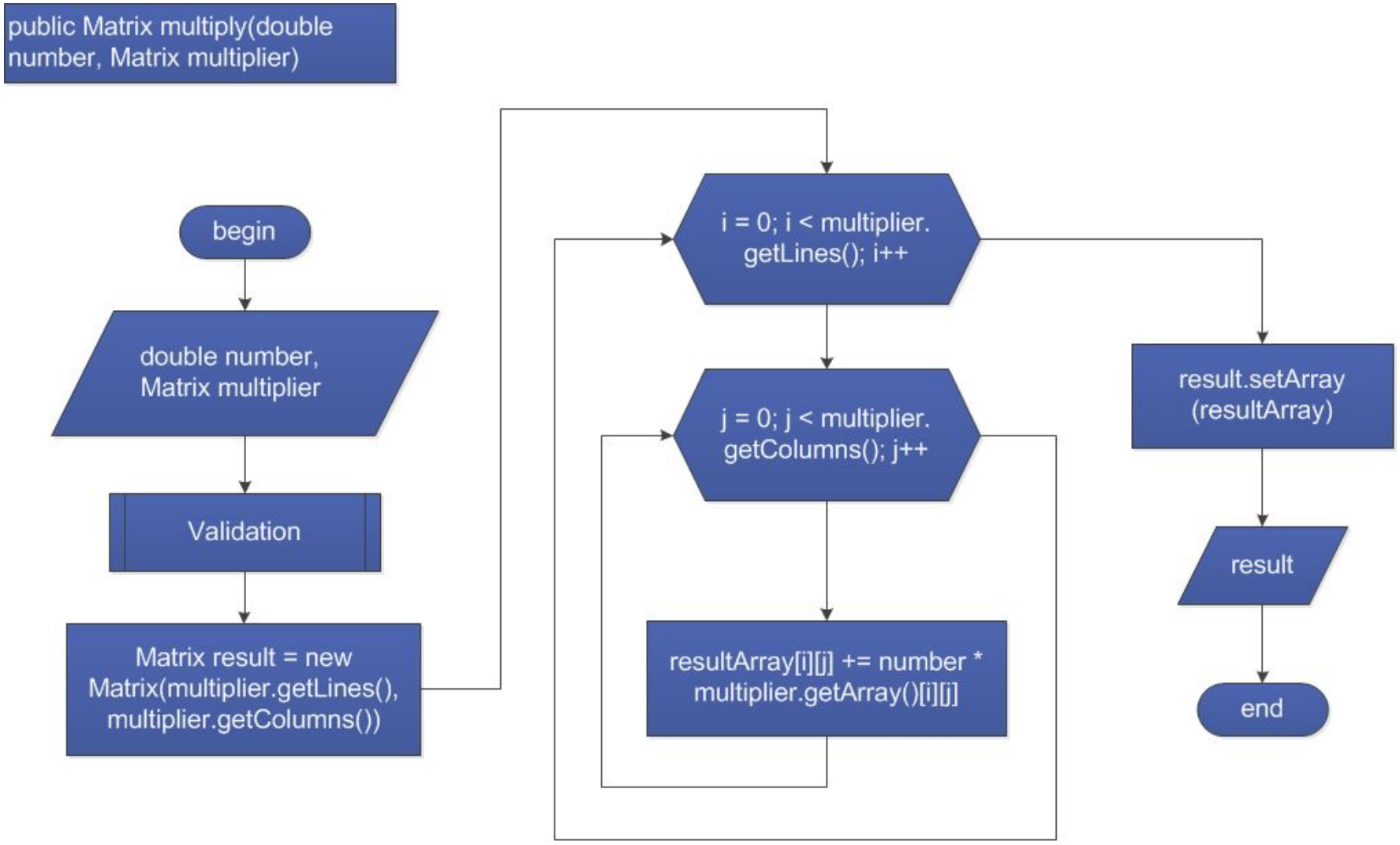
Algorithm of addition matrices



Algorithm of multiplication matrices



Algorithm of multiplying the number and the matrix



Information resources

1. Java 8. The Complete Reference, Ninth Edition. Herbert Schildt.
2. Java. Industrial programming. A Practical Guide. IN Blinov, VS Affair. Minsk 2007
3. Java. Industrial programming. A Practical Guide. IN Blinov, VS Affair. Minsk 2007
4. Java Code Conventions
5. Operations on matrices http://vmatematika.ru/algebra/ linejnaya-algebra/dejstviya-nad-matricami.html
6. Validating Decorators http://www.yegor256.com/2016/01/26/ defensive-programming.html
7. How to Make any Java Class Immutable http://howtodoinjava.com/ core-java/related-concepts/how-to-make-a-java-class-immutable/

Thank you for attention!

Until we meet again!