

## Magic Square

### 1. Specification of Functional Requirements.

<b>Nombre</b>	<b>R.F# 1. Generate a magic square</b>
<b>Resumen</b>	The system will generate a magic square depending on what is selected by the user.
<b>Entradas</b>	
Size of the square, initial position and orientation.	
<b>Resultados</b>	
The system will generate the magic square.	

<b>Nombre</b>	<b>R.F# 2. Take the challenge</b>
<b>Resumen</b>	The system will paint a row and column depending on where the user clicks. Also, show the sum at the end of everything.
<b>Entradas</b>	
Any.	
<b>Resultados</b>	
The selected will be painted.	

<b>Nombre</b>	<b>R.F# 3. Perform necessary checks and build exceptions.</b>
<b>Resumen</b>	The system will do unit tests to the model and verify that the exceptions are working correctly, and also create own exceptions that will help the system to have an optimal performance.
<b>Entradas</b>	
Any.	
<b>Resultados</b>	
The proper checks have been made and the exceptions created for a better performance of the system.	

<b>Nombre</b>	<b>R.N.F# 1. Perform the program with JavaFX</b>
<b>Resumen</b>	The JavaFX framework with scene Builder is used to create the graphic user interface.
<b>Entradas</b>	
Any.	
<b>Resultados</b>	
The graphic interface will be used.	

**2. Design**

[Class diagram](#)

**3. Design of Unit Test Cases**

[Design Test](#)

**4. Traceability of Analysis to Design**

Functional Requirements	Method	Class
R.F#1.	generateBT() generate() getMagicSquare() MagicSqaure.fxml	ui/MagicSquareController model/MagicSquare model/MagicSquare resources
R.F#2	challenge(rowIndex: int, colIndex:int) getMagicSquare() magicConstant() MagicSqaure.fxml	ui/MagicSquareController model/MagicSquare model/MagicSquare resources
R.F#3	testMagicSquare() testMagicSquareGenerate() testMagicConstant() testMagicSquareNegative() testMagicSquareLargeNumber() testMagicSquareOddNumber() testMagicSquareUncompatible() testMagicSquareUncompatibleIllegal()  decideMessageUVE()  decideMessageISE()	test/model/ MagicSquareTest test/model/ MagicSquareTest test/model/ MagicSquareTest test/model/ MagicSquareTest test/model/ MagicSquareTest test/model/ MagicSquareTest test/model/ MagicSquareTest test/model/ MagicSquareTest  src/customExceptions/ UncompatibleValuesException  src/customExceptions/ IllegalSizeException