Date: 9-13-18
To: Jason^2
From: Mr. Manager
Subject: specification for a super-hot spreadsheet

We will use Java 8 to represent a spreadsheet. A basic spreadsheet consists of cells, and a cell contains a formula and can be referenced by its unique position. A cell's formula can be a constant (i.e., a number), a reference to another cell, or an arithmetic function that outputs a constant. Implementing an *ISpreadsheet* interface, a *Spreadsheet* class has a field with a 2D array as its data type, which is populated with *ICell* objects. While there is a default number of rows and columns and thus limited number of cells, the spreadsheet can be expanded. Implementing an *ICell* interface, a *Cell* class is defined by its position on the spreadsheet and its formula, the later of which is null when instantiating a "blank" *Spreadsheet* object. Users can modify existing cells to have *Formula* objects. A *Position* class has two integer fields that represent array row and column indices. Three classes, *Constant*, *Reference*, and *ArithmeticFunction*, implement the interface *Formula*. A *Constant* object is instantiated with a number, likely a double data type, while a *Reference* object is instantiated with a *Cell* object. *ArithmeticFunction* accepts two *Formula* objects. *Addition* and *Multiplication* classes extend *Arithmetic Function*. As their class names imply, *Addition* and *Multiplication* objects can perform arithmetic on two *Formula* objects. Evaluating any *Formula* object should return a *Formula* object.

Please let me know if you have any suggestions for our simple spreadsheet.