SSE 2.0

As a result of the positive feedback from our customers, we decided to invest some additional effort into further developing our SSE engine. The following new requirements have been defined for the second release:

The spreadsheet engine will support the following additional cell types:
- Text cells – cells that contain a string of characters (for labels, table headings, etc);
- Reference cell – this type of cell contains a reference to another cell, of any type. The display value of a reference cell is the display value of the referenced cell.

In addition, SSE should support the following new features:

- Formula cells can reference any other type of cell (including reference and other formula cells) as their operands;
- Cell merging – SSE should allow the merging of any number of horizontally adjacent cells. When displayed, the newly formed super-cell will span the entire horizontal space that had been previously occupied by the original cells. In other words the super-cell will occupy all corresponding cell coordinates in the table, so that by using (e.g. in a formula) the coordinates of any of the old cells, the user actually references the new super-cell. The super-cell inherits the type and display value of the leftmost cell that had been merged.

Implement the above requirements into the current version of the SSE, updating the existing design as appropriate.

Provide at least a UML class diagram along with your solution. (must not be in electronic form).