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List of use cases Spreadsheet:

1. **Create a spreadsheet.**
2. **Save a spreadsheet with its contents.**
3. **Load a spreadsheet.**
4. **Get cell value.**
5. **Set cell value.**
6. **Set cell value. Expression case.**
7. **Copy cell**
8. **Copy cell.Expression case.**

Use case Number/Name	**(1) Create a spreadsheet.**
Goal in context	The user will be able to create an empty spreadsheet.
Actors and their interests	User: Create new spreadsheet
Preconditions	No spreadsheet at all.
Postconditions	A new empty spreadsheet.
Main Success Scenario (Basic Flow)	(1) User: Ask for a new spreadsheet. (2) System: Creates a spreadsheet object.
Extensions (Alternative Flow)	-

Use case Number/Name	**(2) Save spreadsheet with its contents.**
Goal in context	Being able to store the contents of a spreadsheet so that we will be able to load its contents when needed.
Actors and their interests	User: Make the content on spreadsheet available for further use after closing it.
Preconditions	A spreadsheet instance in use.
Postconditions	A .txt file in Semicolon Separated Values (S2V) format containing the spreadsheet content stored at disk.
Main Success Scenario (Basic Flow)	(1) User: Save spreadsheet providing a name. (2) System: Spreadsheet .txt file (S2V) successfully stored in directory.
Extensions (Alternative Flow)	(1) User: Save spreadsheet with a name. (2) System: Failed to save spreadsheet. There is no initialized Spreadsheet Class.

Use case Number/Name	**(3) Load a spreadsheet**
Goal in context	Being able to load the contents of a spreadsheet stored at disk previously.
Actors and their interests	User: Make the content on spreadsheet available for further use after closing it.
Preconditions	Empty/not empty spreadsheet.
Postconditions	A spreadsheet with the contents of the specified file ready for further use.
Main Success Scenario (Basic Flow)	(1) User: Load spreadsheet with a name from a directory. (2) System: Spreadsheet successfully loaded.
Extensions (Alternative Flow)	(1) User: Load spreadsheet with a name from a directory. (2) System: Failed to load spreadsheet. File doesn't exist. (3) System: Ask for file again.

Use case Number/Name	**(4) Get cell value**
Goal in context	Being able to visually inspect the content of a cell.
Actors and their interests	User: View the content of one cell.
Preconditions	A spreadsheet instance. The cell/cells the user wants to inspect.
Postconditions	The content of asked cell prompted on screen.
Main Success Scenario (Basic Flow)	(1) User: Asks for the content of cell with alias X. (2) System: Prints the content of cell with alias X.
Extensions (Alternative Flow)	(1) User: Asks for the value of cell with alias X. (2) System: Failed to find cell with alias X, the column and row provided do not exist.

Use case Number/Name	**(5) Set cell value.**
Goal in context	Being able to set a value if a cell don't exist and update a value when a cell exists.
Actors and their interests	User: Modify or set a value in a cell.
Preconditions	A spreadsheet instance.
Postconditions	Created or modified cell with the value set by user.
Main Success Scenario (Basic Flow)	(1) System asks for a cell. (2) User inputs a cell alias (i.e A1) (3) System asks for the value to be set (4) User provides the cell content to be introduced (5) System Process the value and create a cell with concrete type (Expression, Numeric, Text).
Extensions (Alternative Flow)	**Extension 1:** (1) System asks for a cell. (2) User inputs a cell alias (3) Failed to find cell with alias X, the column and row provided do not exist. **Extension 2:** (1) System asks for a cell. (2) User inputs a cell alias. (3) System: cell has already some content. Asks if the actual content of this cell wants to be changed (4) User: Deny. **Extension 3:** (1) System asks for a cell. (2) User inputs a cell alias. (3) System: cell has already some content. Asks if the actual content of this cell wants to be changed (4) User: Agree and type the new content. (5) System: Fail in case the new content is not recognisable for the system (it is not a string, not a number, not an operation)

Use case Number/Name	**(6) Set cell value. Expression case.**
Goal in context	Being able to set an expression to a cell.
Actors and their interests	User: Set an expression to a cell
Preconditions	A cell chosen by the user.
Postconditions	A cell containing an expression
Main Success Scenario (Basic Flow)	(1) User: writes an expression (2) System: Infers cell type as an Expression Cell (3) System: Analyze cells involved (4) System: Parse the expression (5) System: Create cell containing the expression and its result (6) System: Update values of cells related
Extensions (Alternative Flow)	**Extension 1:** (1) User: writes an expression (2) System: Infers cell type as an Expression Cell (3) System: Analyze cells involved (4) System: Error when parsing the expression. The written function is none of the ones supported. **Extension 2:** (1) User: writes an expression (2) System: Infers cell type as an Expression Cell (3) System: Analyze cells involved (4) System: Error: A cell or cells involved have no value.

Use case Number/Name	**(7) Copy cell value**
Goal in context	Being able to copy one cell content to other cell/cells
Actors and their interests	User: Set the cells to be copied and where.
Preconditions	An initialized spreadsheet.
Postconditions	A cell or cells containing the copy of a selected cell
Main Success Scenario (Basic Flow)	(1) User: writes the cell to be copied, and the cell or range of cells where to be copied. (2) System: analyses the alias. (3) System: get the content of the cell that wants to be copied. (4) System: get the cell or range of cells where to copy. (5) System: Set value of copy cell. (6) System: Update values of all cells related.
Extensions (Alternative Flow)	**Extension 1:** (1) User: writes the cell to be copied, and the cell or range of cells where to be copied. (2) System: analyses the alias (3) System: Error: Alias cell not found, the cell with the desired alias do not exist. **Extension 2:** (1) User: writes the cell to be copied, and the cell or range of cells where to be copied. (2) System: Error: Cannot get the cell or range of cells to copy **Expression 3:** (1) User: writes the cell to be copied, and the cell or range of cells where to be copied. (2) System: analyses the alias. (3) System: get the content of the cell that wants to be copied. (4) System: get the cell or range of cells where to copy. (5) System: If cell to be copied is an expression, a new expression for every copy cell is calculated. (6) System: Error: Calculated expression contains references to cells with no value.

Use case Number/Name	**(8) Copy cell value. Expression case.**
Goal in context	Being able to copy one cell content to other cell/cells
Actors and their interests	User: Set the cells to be copied and where.
Preconditions	An initialized spreadsheet.
Postconditions	A cell or cells containing the copy of a selected cell
Main Success Scenario (Basic Flow)	(1) User: writes the cell to be copied, and the cell or range of cells where to be copied. (2) System: analyses the alias. (3) System: get the content of the cell that wants to be copied. (4) System: get the cell or range of cells where to copy. (5) System: If cell to be copied is an expression, a new expression for every copy cell is calculated. (6) System: Set value of copy cell. (7) System: Update values of all cells related.
Extensions (Alternative Flow)	**Extension 1:** (1) User: writes the cell to be copied, and the cell or range of cells where to be copied. (2) System: analyses the alias (3) System: Error: Alias cell not found, the cell with the desired alias do not exist. **Extension 2:** (1) User: writes the cell to be copied, and the cell or range of cells where to be copied. (2) System: Error: Cannot get the cell or range of cells to copy **Expression 3:** (1) User: writes the cell to be copied, and the cell or range of cells where to be copied. (2) System: analyses the alias. (3) System: get the content of the cell that wants to be copied. (4) System: get the cell or range of cells where to copy. (5) System: If cell to be copied is an expression, a new expression for every copy cell is calculated. (6) System: Error: Calculated expression contains references to cells with no value.