Development of U.C.s

Use case number: 1

Use case name: Edit Spreadsheet

Actors: users

Preconditions: Spreadsheet created

Postconditions: Spreadsheet values correctly updated

Basic flow

1. The system displays spreadsheet menu in the console
2. User selects edit option in the spreadsheet menu through the console
3. System asks the user through the console which cell the user wants to edit
4. User introduces the cell to edit through the console
5. System asks the user to input the new string for the cell through the console
6. User introduces a string of characters through the console
7. The system identifies a written equation
8. The system identifies operators in the string
9. The system parses the string using the found operators
10. The system identifies linked cells and gets its values
11. The system identifies formulas and computes its values
12. The system computes the equation
13. The system writes the result on correspondent cell of the spreadsheet
14. System recomputes all cell values which depend on the value of the edited cell

Extensions

2.a. User inputs a valid option which is not the “edit spreadsheet” one

1. The system ends the Use Case

4.1. The User introduces a non-valid cell through console

1. System displays in the console an error message telling the user the cell introduced is not correct
2. Return to step 3 of the basic flow

4.2. The user introduces a correct cell but out of bounds of the current cells

1. Create the missing cells including the selected one
2. System adds the cells to the current cells of the spreadsheet
3. Go to step 5 of the basic flow

6.a. User indicates to change the cell to edit

1. Return to step 3 of the basic flow

6.b. User indicates to return to Spreadsheet menu

1. Clear console
2. Return to step 1 of the basic flow.

7.a. The system does not identify an equation

1. The system updates the correspondent cell with the written string by the user
2. The system clears the console
3. The system returns to step 1 of the basic flow

8.a. No operators are detected

1. Skip to step 10 of the basic flow

10.a. The system does not detect any linked cells or array of cells

1. Skip to the next step of the basic flow

10.b. The values gotten from the cell or any of the cells in an array of cells are not valid

1. The system displays in the console an error message telling the user the linked cells have non-valid values.

2. Return to step 5 of the basic flow

10.c. The introduced syntax for the cells is not correct

1. The system displays in the console an error message telling the user the syntax in which hi has written a cell or a cell array is not correct

2. Return to step 5 of the basic flow

11.a. The system does not identify any formula

1. Skip to the next step of the basic flow

11.b. A non-valid value is assigned to an argument of the formula

1. The system displays in the console an error message notifying the user a non-valid value is passed as argument to the formula

2. The system displays an informative message with the usage of the correspondent formula

3. Return to step 5 of basic flow

11.c. Few or too many arguments are passed to the formula

1. The system displays in the console an error message notifying the user too few or too many arguments are passed to the formula

2. The system displays an informative message with the usage of the correspondent formula

3. Return to step 5 of basic flow

11.d. System identifies a formula but it is not in its libraries

1. The system displays an error message in the console notifying the user the used formula is not in the libraries

2. Return to step 5 of basic flow

12.a. The system detects non-valid values for an operation

1. The system displays an error message in the console notifying the user an illegal use of the operator.

2. Return to step 5 of the basic flow

12.b. The system detects non-valid operation or syntax

1. The system displays an error message in the console notifying the user invalid syntax has been used

2. Return to step 5 of the basic flow

*a. Console is closed

1. The system opens a new console
2. System displays an informative message to the user telling to select close option in both the spreadsheet and main menu to close the program
3. Return to step in which the system was of the basic flow

Use case number: 2

Use case name: Create Spreadsheet

Actors: users

Preconditions: main menu correctly initialized; Spreadsheet menu correctly initialized

Postconditions: Enter the Spreadsheet Menu

Basic flow

1. The system displays main menu in the console
2. User selects the option in the main menu to create a new spreadsheet through the console
3. The system asks the user to write the name of the new spreadsheet through the console
4. The user enters the name for the new spreadsheet
5. The system creates a new txt document
6. The system creates an initial cell array of 3x3
7. The system creates a spreadsheet
8. The system updates the txt with the spreadsheet cell array
9. The system redirects the user to the Spreadsheet Menu so it can choose what to do next.

Extensions

2.a. User inputs a valid option which is not the “create spreadsheet” one

1. The system ends the Use Case

2.b. The user inputs a non-valid menu option

1. The system displays an error message in the console notifying the user the selected option is not a valid one

2. Return to step 1 of the basic flow

4.a. The introduced name has invalid characters

1. The system displays an error message in the console notifying the user the introduced name is not valid

2. Return to step 3 of the basic flow.

4.b. The user notifies to return to the main menu

1. Return to step 1 of the basic flow

5.a. The system is not able to create a new txt document

1. The system displays an error message in the console notifying the user it is not able to c create a new spreadsheet

2. Return to step 1 of the basic flow

8.a. The system has no permission to write into the document

1. The system modifies the permissions of the document

2. The system updates the txt with the spreadsheet cell array

    2.a. Updating process returns error

        1. The system displays an error message in the console notifying the user it is not possible to create a new spreadsheet

        2. Return to step 1 of the basic flow

*a. Console is closed

1. The system opens a new console
2. System displays an informative message to the user telling to select close option in both the main menu to close the program
3. Return to step in which the system was of the basic flow