

Almost Excel

Team 2

3 January 2013

Table 1: Team

[illegible]

1 System

FunSheets is an electronic spreadsheet program used for storing, organizing and evaluating raw data. FunSheets is designed, written and distributed by Team 2 of COMP354 W/PP

1.1 Purpose

FunSheets is used to automate data organization and the calculations of complex expressions involving large amounts of data.

1.2 Context

FunSheets will allow the user to create, open or modify a spread sheet and evaluate the source to produce a new spreadsheet featuring calculated value, evaluated expressions, and sorted information.

2 Domain Concepts

2.1 Domain Model

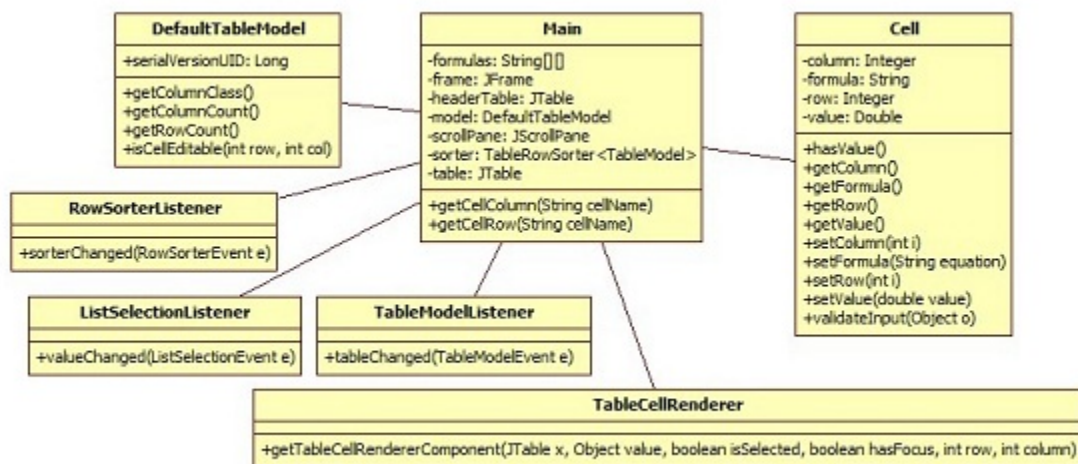


Figure 1: Domain Model

3 Actors

A list of actors (primary/secondary), and use cases are mentioned in this section.

3.1 List of Actors

1. Person as a primary actor.
2. System as a secondary actor.

3.2 Description of Actors

1. Person: A Person, is the main user of the application. Their roll is to input raw data or expressions manually or by opening existing files
2. System: A software application that provides utilities for spreadsheet analysis and evaluation.

4 Use Cases

4.1 Overview

Use Case model provides an understanding of the interaction between the user and the software system. It consists of one or more actors and one or more use cases where actors represent particular role and use cases represent actions performed by the system.

4.2 Use Case Diagram

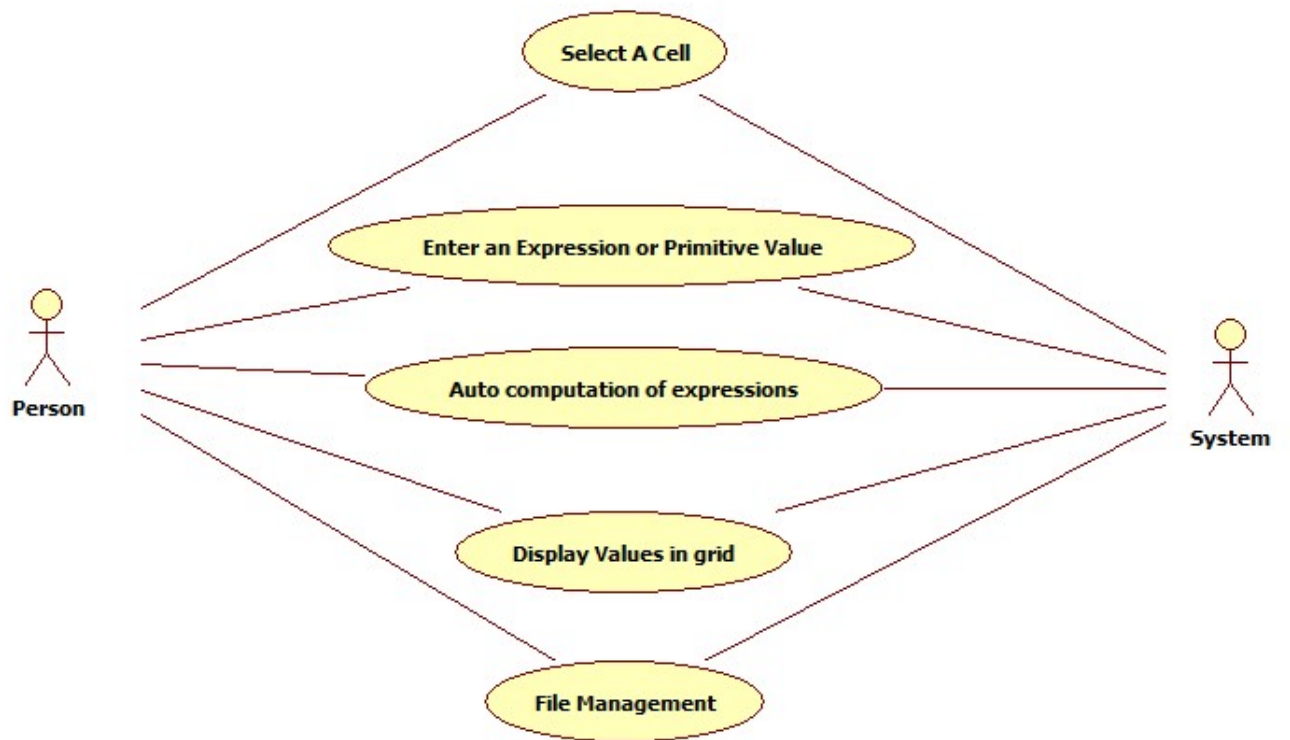


Figure 2: Use Case Diagram

Use Case 1

Name

Select a Cell

Summary

A user will select a cell that can be used for various operations

Actors

1. Person
2. System

Precondition

The user has opened the program, and opened or created a spread sheet

Main Scenario

1. User will click on the desired cell or enter the cell address.

Exceptions

The cell is outside an acceptable range

Postcondition

Selecting a cell will trigger an event in the system to evaluate the input

Use Case 2

Name

Enter Formula / Primitive value

Summary

The user can enter a primitive value of type real which must have at least one digit before the decimal point, and if the real number has a decimal part then there is at least one digit after the decimal point. The numbers may be negative. In addition, the user can enter a formula which start by equal sign (=) and these formulas are the usual arithmetic expressions.

Actors

1. Person
2. System

Precondition

The user has selected a cell

Main Scenario

1. Select a Cell
2. Enter primitive data through standard input devices (eg. keyboard, scanner etc.)

Exceptions

None

Postcondition

Data stored in the selected cell of the spread sheet

Use Case 3

Name

Automatic Computation

Summary

When a cell contains an expression the system will parse the string and evaluate the elements to produce a value.

Actors

1. System

Precondition

A cell contains an expression

Main Scenario

1. User opens the program
2. User enters an expression, or loads a sheet with expressions
3. The user selects Automatic computation

Exceptions

None

Postcondition

The cell that contains the expression will display the results of the evaluation

Use Case 4

Name

Display On Screen

Summary

Output the spreadsheet as a grid of cells with values and evaluated expressions.

Actors

1. System

Precondition

Program is open

A spreadsheet has been created or loaded

Main Scenario

1. User opens the program
2. User enters an expression, or loads a sheet with expressions
3. System will display the results in a grid of cells.

Exceptions

None

Postcondition

A GUI representation of the grid is displayed with evaluated cells in a row / column grid.

Use Case 5

Name

File management

Summary

Allow the user to load or save an existing spreadsheet to disk

Actors

1. System
2. User

Precondition

Program is open

Main Scenario

1. User opens the program
2. User loads an existing file
3. User can make modifications to the spreadsheet
4. System will evaluate the results
5. User save the changes to disk

Exceptions

None

Postcondition

A GUI representation of the grid is displayed with evalutated cells in a row / column grid.

5 Non-Functional Constraints

6 Data Dictionary

7 References

A Description of File Format: Tasks

Describe input file format.

B Description of File Format: Persons

Describe output file format.