Spreadsheet:

Strategies to identify conceptual classes:
1) Use a conceptual class category list
2) Identify noun phrases

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1) Identify conceptual classes using categories list:

- Physical or tangible objects: Spreadsheet, Cell
- Actor: User
- Container: Value
- Role(Type of cell): number, string, formula
- Relevant Events: Edit, Get, Open, Save, Close, Clear, Add, Delete

2) Finding Conceptual Classes with Noun Phrase Identification

Use case number: 1 **Use case name:** Edit cell of spreadsheet

Main Success Scenario (or Basic Flow):
1. System asks <u>cell</u> to <u>edit</u>
2. <u>User</u> enters <u>cell</u>
3. System asks for input (<u>number, string, formula</u>)
4. <u>User</u> enters input (<u>number, string, formula</u>)
5. System stores the <u>value</u> on its model.
6. System gives a success message.

Extensions (alternative flows):
1.
2.
    a. The <u>cell</u> is invalid *(for example the user made a typo 1C instead of C1)*
       i. System tells the <u>user</u> the format is invalid
       ii. System returns to step 1.
    b. User enters cancel
       i. System returns to step 1.
3.
4.
    a. Input is not valid (not recognized as value, string or formula; value out of range; invalid character; invalid formula)
       i. System notifies the user the error.
       ii. System returns to step 3
    b. User enters cancel
       i. System returns to step 1
       ii.

Use case number: 2 **Use case name:** Get value from a cel
Main Success Scenario (or Basic Flow):

1. System asks <u>cell</u> to provide <u>value</u>
2. <u>User</u> introduce the <u>cell</u>
3. System check type (<u>number, string, formula</u>) of <u>cell</u> (makes an operation if 'formula' cell)
4. System return the stored <u>value</u>

Extensions (alternative flows):

1. a
    a. The cell is invalid *(for example the user made a typo 1C instead of C1)*
        i. System tells the user the format is invalid
        ii. System returns to step 1.
    b. User enters cancel
        i. System returns to step 1.

Use case number: 3 **Use case name:** Open spreadsheet
Main Success Scenario (or Basic Flow):

1. <u>User</u> choose <u>open</u> (or <u>create</u>) a <u>spreadsheet</u>
2. System asks for new or <u>saved</u> <u>spreadsheet</u>
3. <u>User </u>select create new or introduce a name to <u>load</u> a saved <u>spreadsheet</u>
4. System load the spreadsheet

Extensions (alternative flows):

1.
2.
3.
    a. The selected spreadsheet doesn't exist
        i. System tells the <u>user</u> the <u>spreadsheet </u>name is invalid
        ii. System returns to step 2

Use case number: 4 **Use case name:** Save spreadsheet

Main Success Scenario (or Basic Flow):

1. User select save the current spreadsheet
2. System asks for directory and filename
3. User introduce directory and filename
4. System save the spreadsheet file.

Extensions (alternative flows):

1.
2.
   a. The introduced filename is used in the directory
      i. System tells the user the name is currently used.
      ii. System ask for replace file or cancel action.

Relationships in the Domain Model:

- Cells are in a spreadsheet
- Type(number, string, formula) is in a cell

Domain model: