

Expenses Systems - Exercise



In order to split all the expenses made on company trips, we need a system to help us. Trips doesn't have defined Participants.

Here are the object, relationships and rules that you need to implement it.

Object	Description
Employee	Represents the basic information of a BI Employee
Trip	Trip Information
Expense	Expense Detail
Expense Distribution	Specific amount of the expense per employee

Employee	
First Name	First Name of the Employee
Last Name	Last Name of the Employee
ID Number	ID Number of ID Card or Passport or...
ID Type	ID Card, Passport...
Nationality	Nationality of the Employee
Gender	Gender of the Employee (Male or Female)
Birthdate	Date of birth of the Employee
*Other relevant info for the purpose of this exercise	

- ID Number and ID Type are required
- ID Number per ID Type is unique in the system (ex: cannot have ID Number "123456789" and ID Type "Passport" for 2 Employees)

Trip	
Designation	Designation of the Trip (Ex: "Trip to Geneva")
Description	Description of the Trip
Start Date	First day of the Trip
End Date	Last day of the Trip
Total Days	Total length of the Trip in days
Total Vacation Days Required	Total week days length of the Trip in days
Total Participants	Total number of Employees in the Trip
Total Cost	Total cost of the Trip
*Other relevant info for the purpose of this exercise	

- Prevent End Date to be before than Start Date
- Automate all the "Total" fields

Expense	
Number	Unique auto number
Trip	Trip related with the Expense
Responsible	Employee responsible for this Expense
Status	Status of the Expense ("New", "Processing", "Paid")
Description	Description of the Expense
Cost	Total cost of the Expense
Total Paid Amount	Total paid amount of the Expense
Total Unpaid Employees	Total number of employees that didn't paid all the expense yet
*Other relevant info for the purpose of this exercise	

- Prevent negative Cost

Expense Distribution	
Number	Unique auto number
Employee	Employee related with the Expense Distribution
Expense	Expense related with the Expense Distribution
Amount	Total amount of the Expense Distribution
Paid Amount	Total paid amount of the Expense Distribution
*Other relevant info for the purpose of this exercise	

- Expense Distribution is the simple arithmetic division of the Total Cost of the Expense divided by the number of participants
- When an Expense Distribution is paid the Employee should receive an email confirming the payments was received

In order to achieve a good user experience we need to build a page to be accessible from the Expense (via detail button) where the user can see all the information related to Trip and Expenses (read only) and mass create/delete/edit Expenses Distributions per Expense. The information in the page should be updated automatically in the Front End with the user inputs but only committed to the Back End when "Save". It's a bonus if the page is responsive or uses Lightning Design System.

Example of page UI:

<div>TRIP Information</div>
<div>Expense #1</div> <div>List of Expense Distributions</div>
<div>Expense #2</div>

Additionally whenever an Expense Distribution is updated the Expense Responsible should receive an email with the Expense table as it was done for the previous page but without inputs (read-only). Test coverage above 75% and code comments are required.