



Automatic Recognition of Suitable Design Pattern

SRS Presentation
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SRS Presentation



Introduction

- **Design Patterns** are reusable solutions to commonly occurring software design problems.
- They are ready-made templates but not used directly in a machine code.
- Was first initiated in 1994 by four software engineers in their book "Elements of Reusable Object-Oriented Software"

Problem Definition

The proposed approach will help software engineers to find the suitable design pattern for a specific problem scenario and generate the class diagram to avoid:

- Anti-patterns problem
- Complicated Code
- Confusion of novice engineers during selection

Problem Definition

Anti-Patterns: Wrong solutions for software design problems

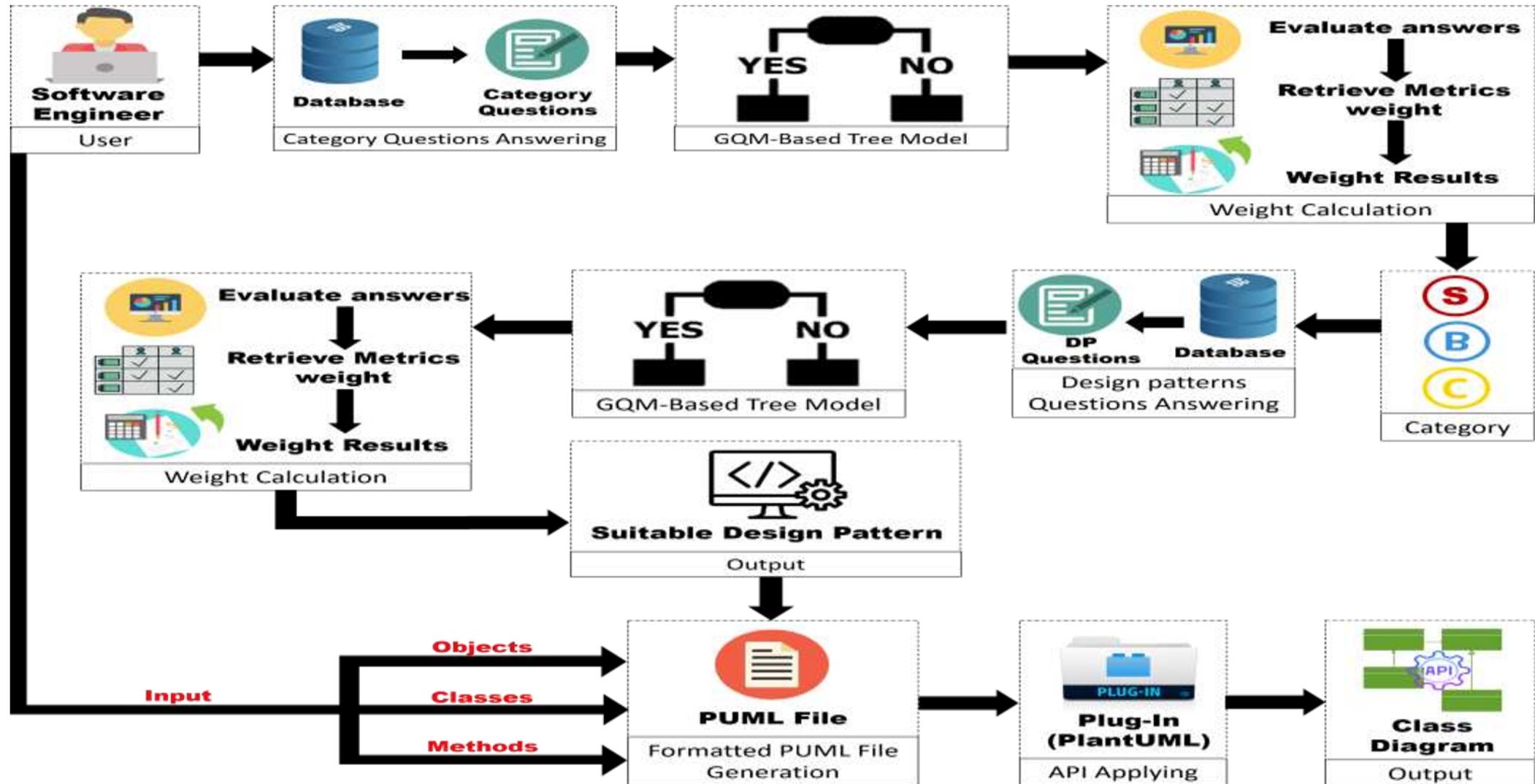


Re-design and re-implement their systems

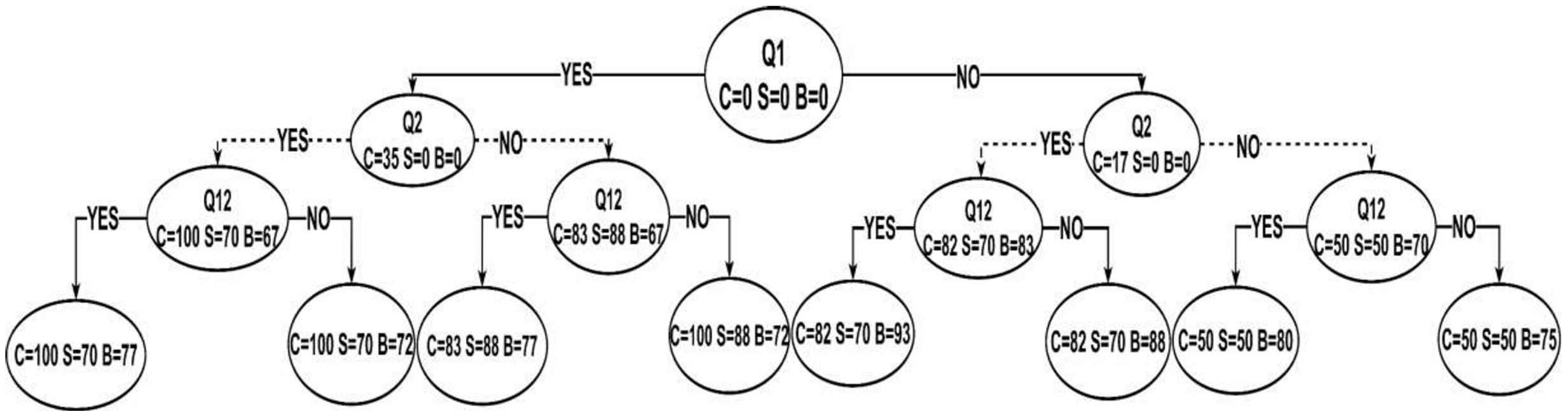


Wasting time, effort and cost

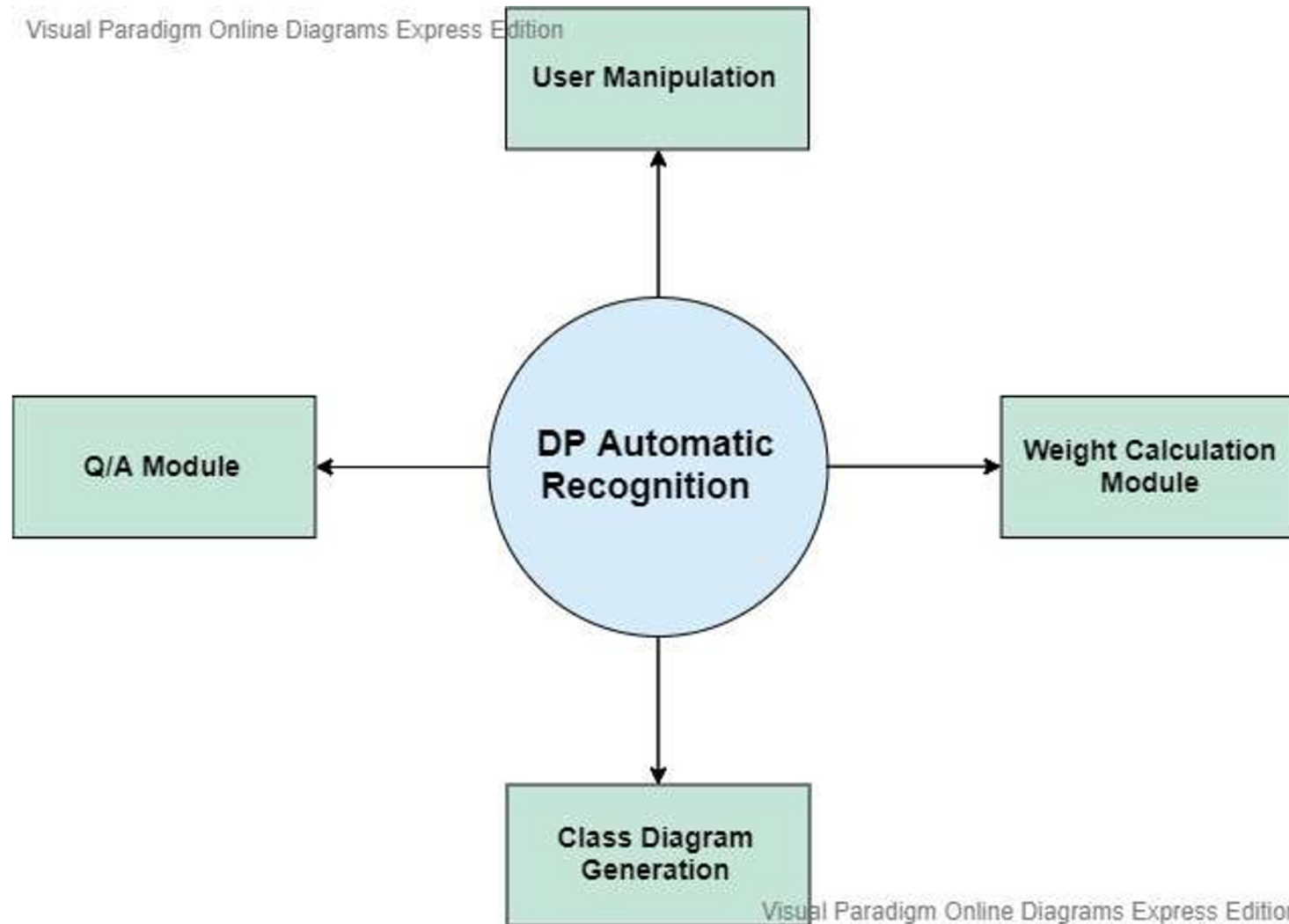
System Overview



GQM-Based Tree Model Sample



Context Diagram



Functional Requirements(1)

3.1.13 Generate Questions

Name	Generate Questions
Description	Questions are retrieved from database to user in order to let him start answering them
Input	Question ID, Number of Question
Output	The Questions Form
Requirements	User must be logged in as a software engineer
Action	If a Question is not answered, the next question won't be displayed. else, it will display next question and take the answer input to calculate the total weight.
Source	User Input
Destination	Database
Pre-Condition	Insert Category
Post-Condition	Calculate Weight
Side Effect	None

Functional Requirements(2)

3.1.14 Calculate Result

Name	Calculate Result
Description	It calculates the weight of the user's answers to help him find the Category with the highest score of weights. It retrieves the answers weights from the database then calculate their sum.
Input	Question ID, Answer ID, Answer Weight
Output	The Result
Requirements	All the Questions must be answered by the user and all the Answers must have weights in the database.
Action	If an Answer doesn't have weight the weight won't be calculated. else, it will display the Result and show the user the suitable Category according to his answers.
Source	Database
Destination	GUI
Pre-Condition	Answer Questions
Post-Condition	View Result
Side Effect	None

Non-Functional Requirements

Security:

- Restricted permissions for each user-type
- Sensitive data Encryption
- Lock DB records
- System Lock for 10 mins in case of 5 successive wrong entries
- Differentiate between the different user-types logging in attempts.
- Email Verification
- Logging out if user exits the system

Non-Functional Requirements

Maintainability:

Using MVC design pattern + Straight-forward friendly GUI

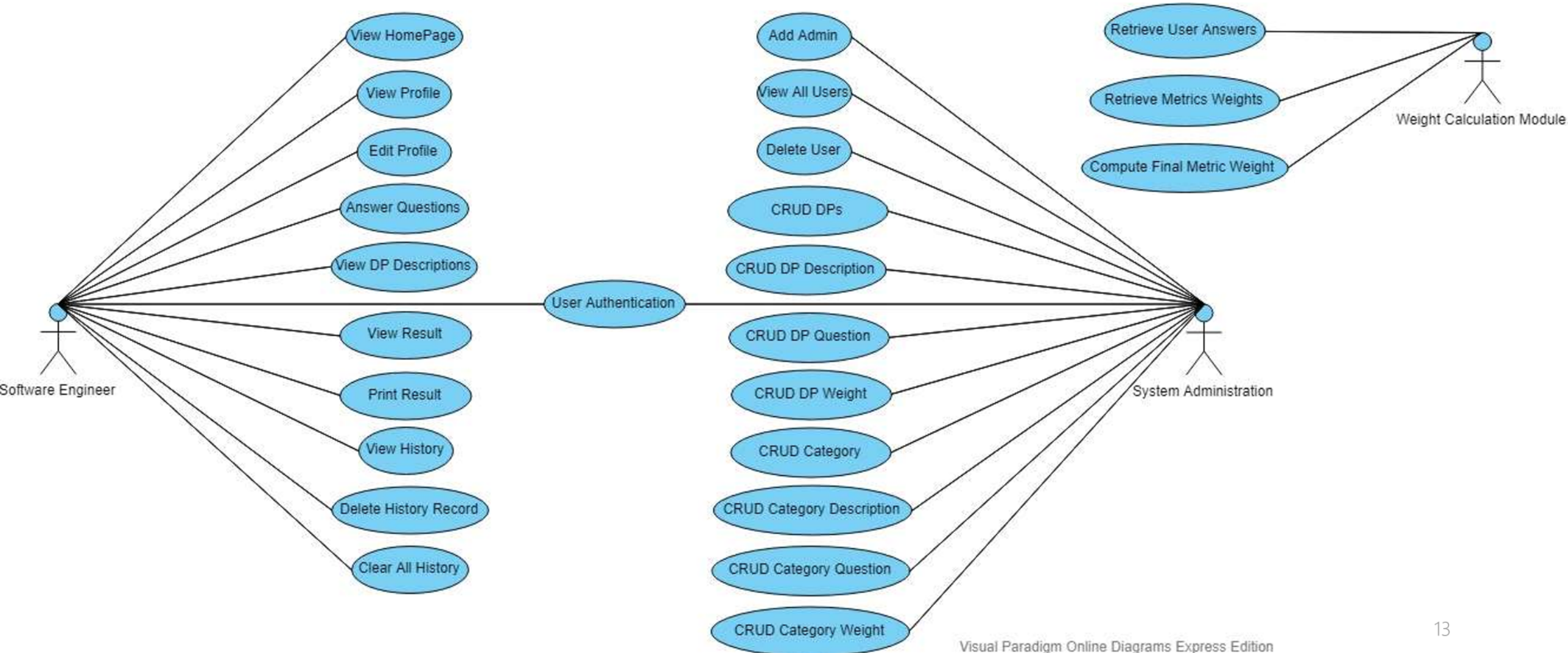
Portability:

Implemented using Java (platform independent)

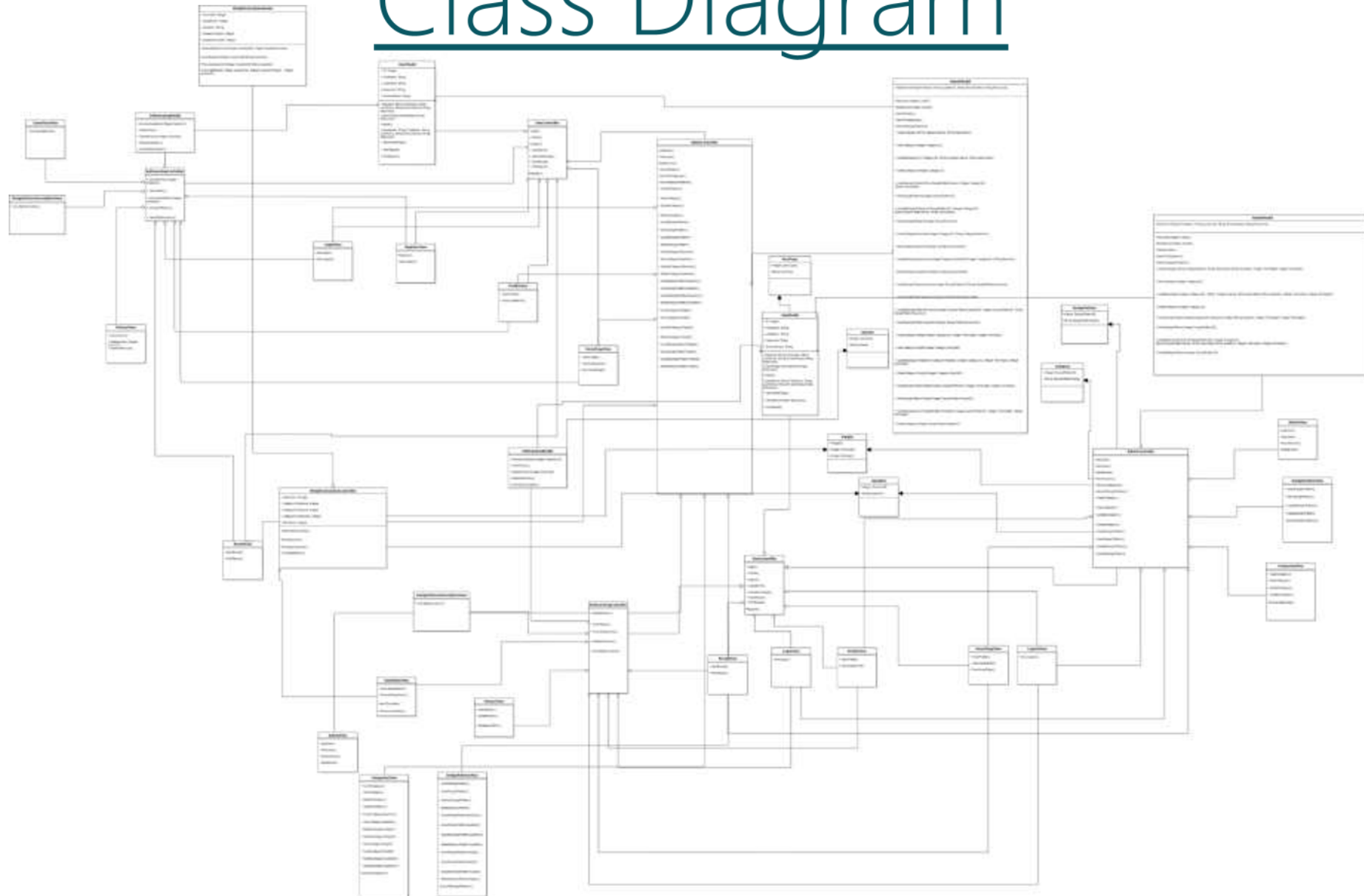
Extensibility:

Applying EAV data model

Use Case Diagram



Class Diagram



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Demo



Thank You