***EXERCISE 12***🡪 <https://www.cpe.ku.ac.th/~plw/oop/e_book/ood_with_java_c++_and_uml/ch7.pdf>

**PROMPT:** The following should be textually analyzed and a use case diagram created containing several use cases. Identify the actors, use cases and associations. Please, use the user goal level approach. Also, please consider any possible generalization relationship between use cases or between actors, and any possible "include" or "extend" relationship between use cases. Please give me the PlantUML code for the use case diagram corresponding to the following text:

***(Generate circulation report) The system shall permit head librarians to generate a circulation report that provides information about the number of active patrons, the volume of checked-out assets, and the most frequently checked- out assets. (Generate accounts report) The system shall permit head librarians to generate an accounts report that provides information about the number of patrons with an overdue fine balance, the total of overdue fine accounts receivable, the total number of overdue assets, and a list of assets overdue by more than 90 days.***

Here is the PlantUML code for the use case diagram based on the provided text:

@startuml

actor "Head Librarian" as Librarian

rectangle "Library Reports" {

usecase "Generate Circulation Report" as CirculationReport

usecase "Generate Accounts Report" as AccountsReport

}

Librarian --> CirculationReport

Librarian --> AccountsReport

@enduml

**PROMPT:** There should be a general use case called "generate report", and the two use cases you putted could be specializations of this general use case.

ChatGPT

**ChatGPT**

Thank you for the clarification. Here's the updated PlantUML code considering the generalization relationship:

@startuml

actor "Head Librarian" as Librarian

rectangle "Library Reports" {

usecase "Generate Report" as GenerateReport {

usecase "Generate Circulation Report" as CirculationReport

usecase "Generate Accounts Report" as AccountsReport

}

}

Librarian --> GenerateReport

GenerateReport --> CirculationReport : <<extend>>

GenerateReport --> AccountsReport : <<extend>>

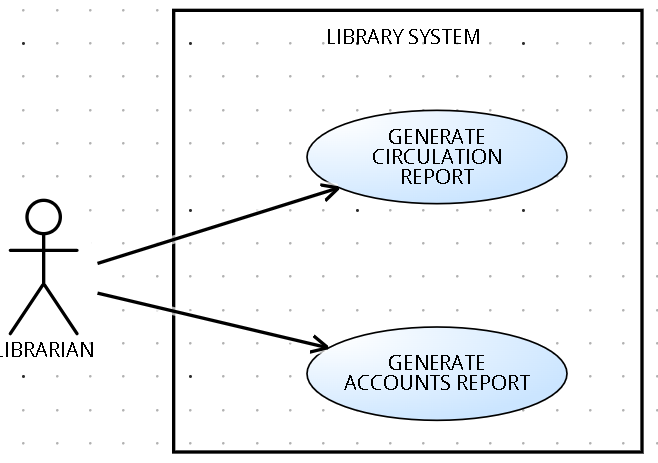
@enduml

**Analysis:**

In this exercise, it's important to note that for generating a report, the librarian should perform some preliminary actions such as accessing the account database and asset database. While these actions are included in the original solved exercise, ChatGPT did not consider them. This was an expected outcome as ChatGPT cannot infer information not explicitly provided in the prompt. However, what it could have considered but did not, is the existence of a generalized use case for generating a report. This could account for the two different specialized cases of reports, each included as a specialization with the corresponding arrow.

Surprisingly, when I prompted ChatGPT to address this issue, it generated a code with a syntax error for the first time, failing to produce an updated Use Case Diagram (UCD). The initial UCD generated by ChatGPT is fair and correct, but it lacks some details, notably the inclusion of a generalized use case for generating a report.

**MY SOLUTION:**

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**REFERENCE SOLUTION:**

NOT FOUND ANYMORE IN THE WEBSITE BECAUSE OF A SERVER ERROR (LIMITATION)

**LLM SOLUTION:**

