***EXERCISE 14***🡪 <https://www.uml-diagrams.org/ticket-vending-machine-use-case-diagram-example.html?context=uc-examples>

**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:

***Ticket vending machines, i.e. vending machines that sell and produce tickets to commuters, is a subject of the example use case diagram. This kind of a machine is a combination of both hardware and software, and it is only a part of the whole system selling tickets to the customers. So we will use the «Subsystem» stereotype. Ticket vending machine allows commuters to buy tickets. So Commuter is our primary actor. The ultimate goal of the Commuter in relation to our ticket vending machine is to buy a ticket. So we have a Purchase Ticket use case. Purchasing tickets might involve a bank, if payment is to be made using a debit or credit card. So we are also adding another actor - Bank. Both actors participating in the use case are connected to the use case by association.***

ChatGPT

**ChatGPT**

Based on the provided information, here is the PlantUML code for the use case diagram:

@startuml

!define SUBSYSTEM class << (S, #FF7700) Subsystem >> #LightBlue

actor Commuter

actor Bank

rectangle "Ticket Vending Machine" <<SUBSYSTEM>> {

usecase "Purchase Ticket" as PurchaseTicket

}

Commuter --> PurchaseTicket

Bank --> PurchaseTicket

@enduml

**PROMPT:** The bank is clearly a secondary actor. Can you show it as such, by placing primary actor on the left and bank (secondary) on the right?

ChatGPT

**ChatGPT**

Certainly! Here's the modified PlantUML code:

@startuml

!define SUBSYSTEM class << (S, #FF7700) Subsystem >> #LightBlue

actor Commuter

actor Bank

rectangle "Ticket Vending Machine" <<SUBSYSTEM>> {

usecase "Purchase Ticket" as PurchaseTicket

}

Commuter --> PurchaseTicket : initiates

PurchaseTicket --> Bank : payment

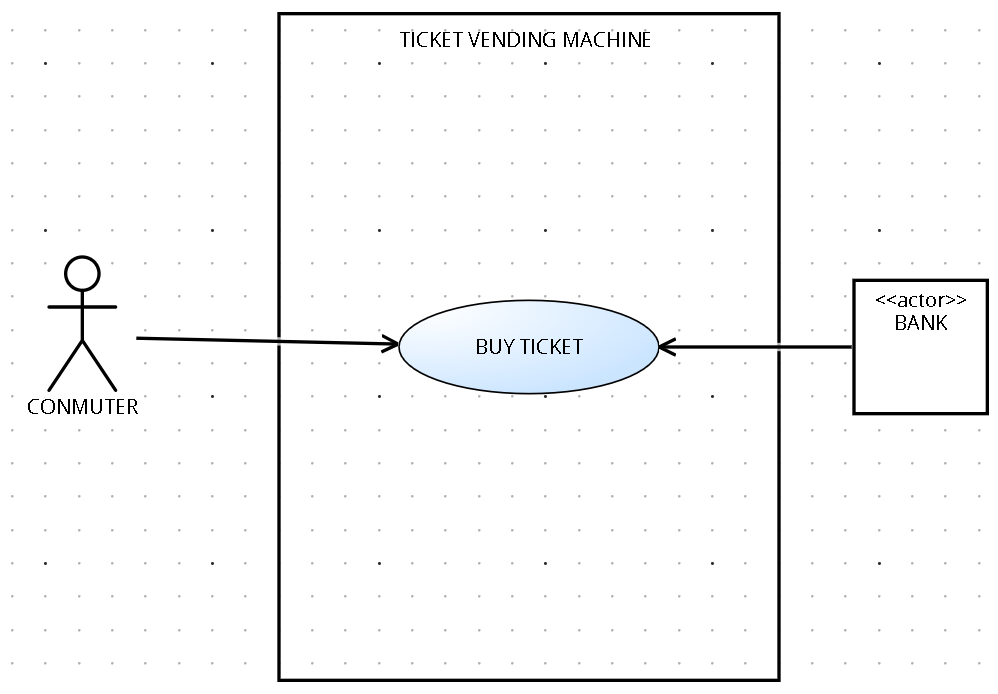
@enduml

**Analysis:**

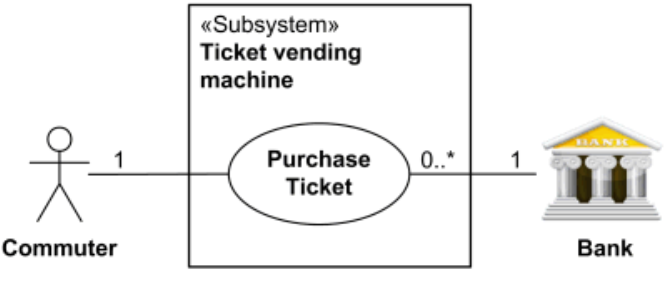
In this exercise, a straightforward Use Case Diagram (UCD) solution was required, despite the potential expectation for a more detailed UCD. The initial code generated by ChatGPT was accurate and simple, as anticipated, with the only detail being a lack of differentiation between the two actors as primary (commuter) and secondary (bank). After the second prompt, where I addressed this issue, it was promptly resolved, and the final UCD depicted the desired solution for the problem.

It is noteworthy that the use cases and actors required were clearly described in the text. It seems that when the user can distinctly identify actors, use cases, and relations/associations and explicitly communicates them, ChatGPT is highly likely to provide an accurate code for the corresponding UCD.

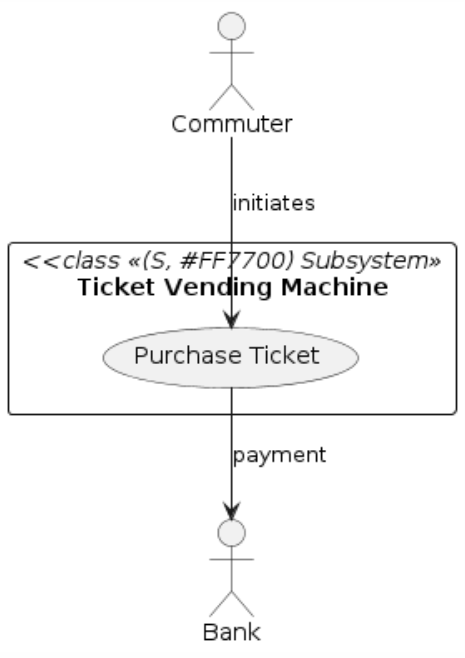
**MY SOLUTION:**

****

**REFERENCE SOLUTION:**

****

**LLM SOLUTION:**

****