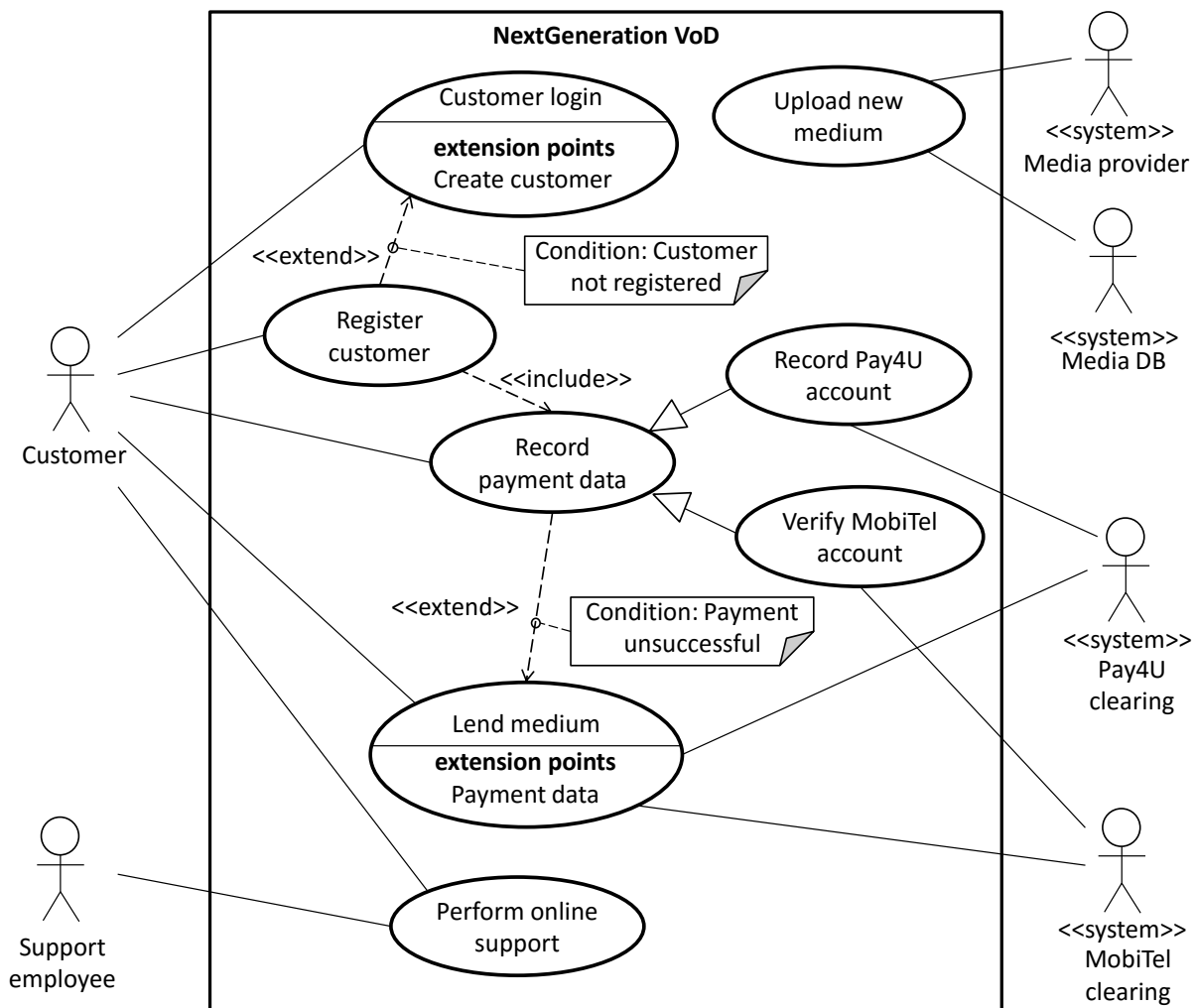


0. Mini-Cases

This section contains mini-cases which form the basis for the questions in the respective question blocks. When answering the questions, make sure you are answering them based on the correct respective mini-case!

Mini-Case 1

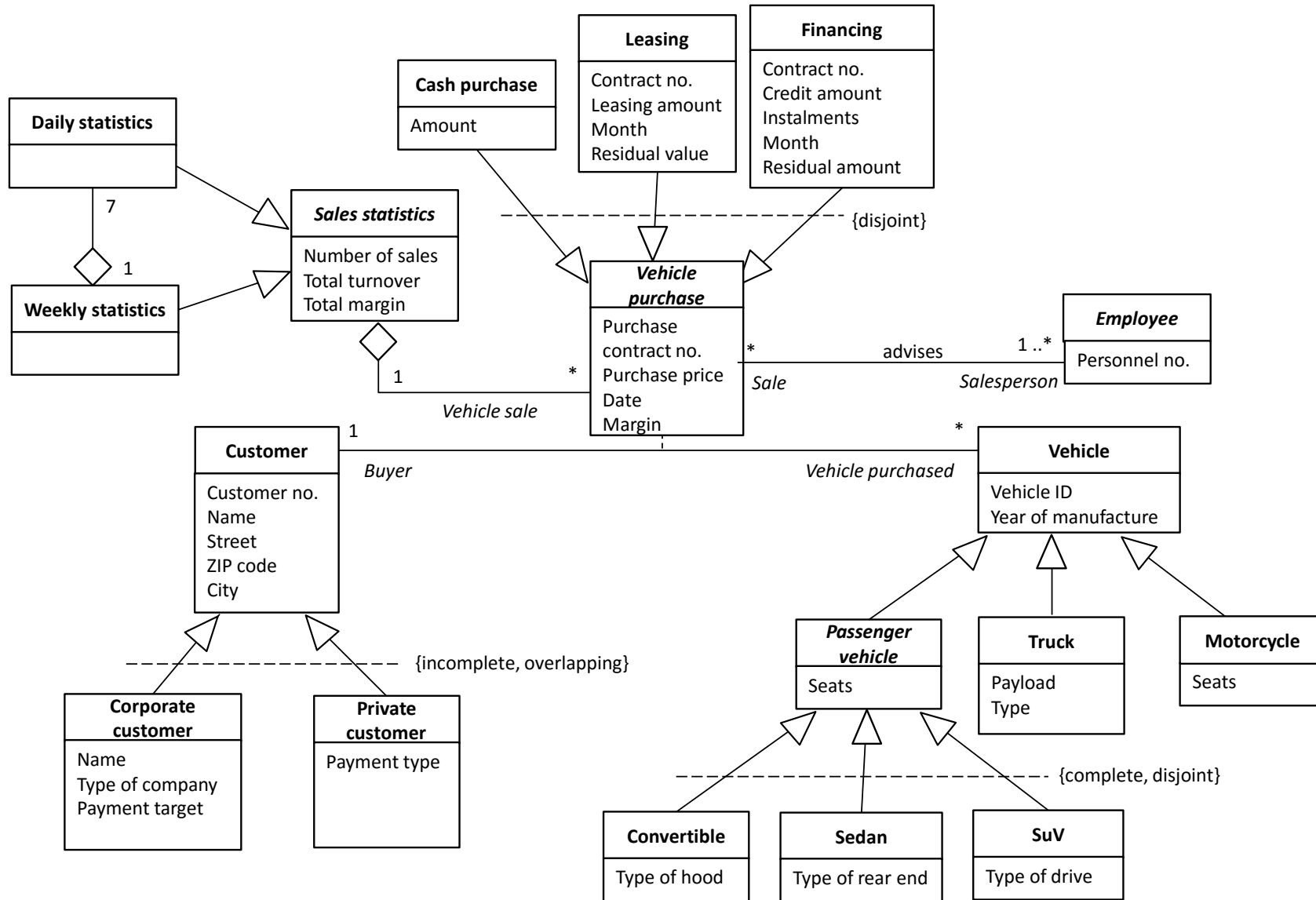
In your role as requirements engineer in the development project for the video on-demand portal "NextGeneration VoD", your task is to determine the requirements for the software based on the system vision for "NextGeneration VoD" and to document the requirements effectively. As a first step, in order to have a better understanding of how the system is embedded in its operational context and the approximate functionalities required from a usage perspective, you have performed a use case analysis which led to the following result:



Mini-Case 2  (Continued on the next page)

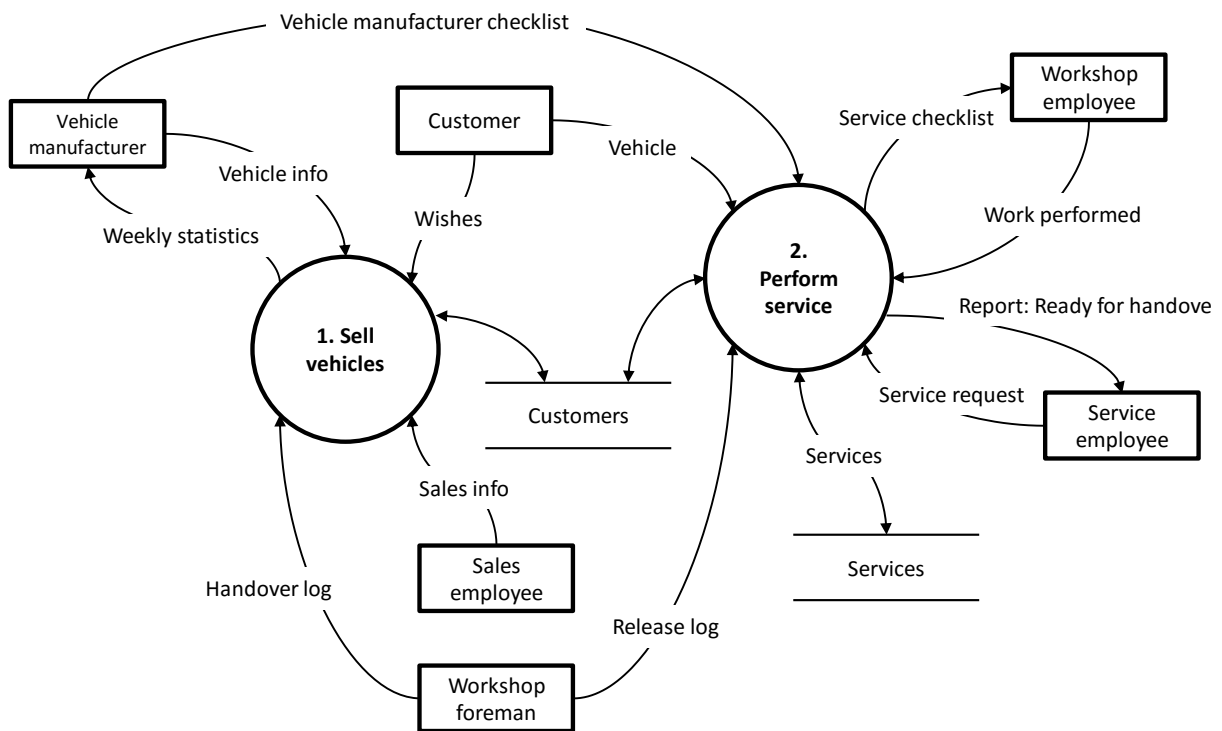
You are a requirements engineer in a development project. The goal of this project is to replace a software for sales support in a vehicle dealership that has been in use since 1995 with a new software system. The new software should include the main functionalities provided by the software currently in use, but should also offer some advanced functionalities for evaluating and analyzing the sales figures. As part of the analysis of the system currently in use, one of your team members, Mr. Sanders, has created the class diagram shown on the next page and presented this to you:

Mini-Case 2 (continuation)



Mini-Case 3

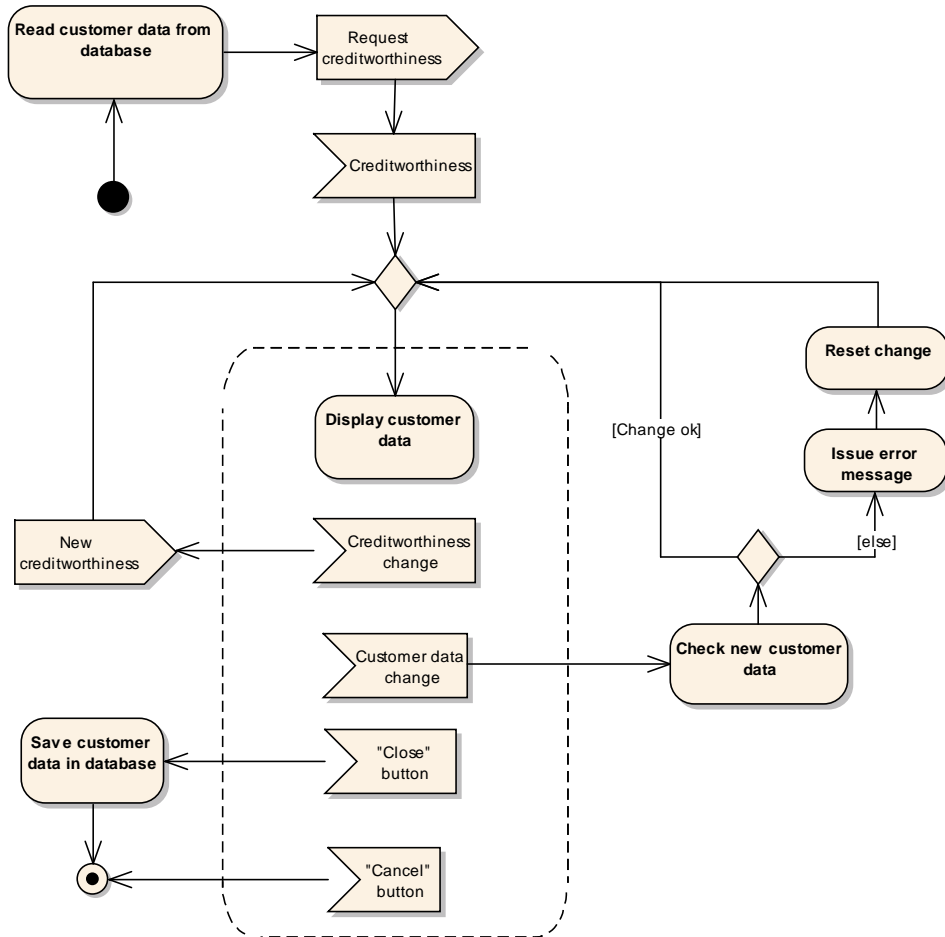
In a development project you are responsible for requirements engineering. The goal of this project is to replace a software for customer service in a vehicle dealership that has been in use since 1993 with a new software system. The new software should have the main functionalities provided by the software currently in use, but should also have innovative features for further improving the quality of customer service. In order to specify the requirements for the new system, you have performed an initial data flow-based analysis of the software currently in use. This analysis also allows you to assess the scope of the software currently in use. The results of this analysis are documented in the following data flow diagram:



2. Question Block — Modeling Activities

Activity diagram 1

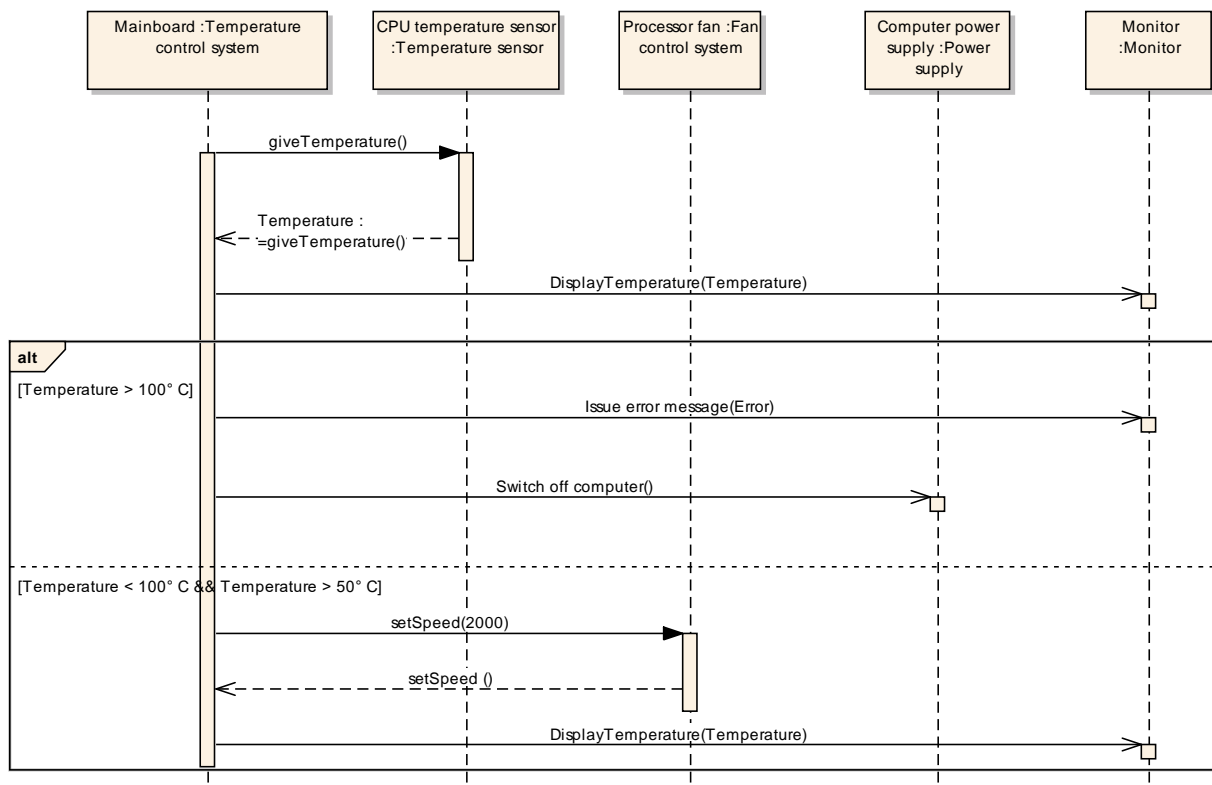
5. Please check whether the statements below are correctly represented in the diagram.



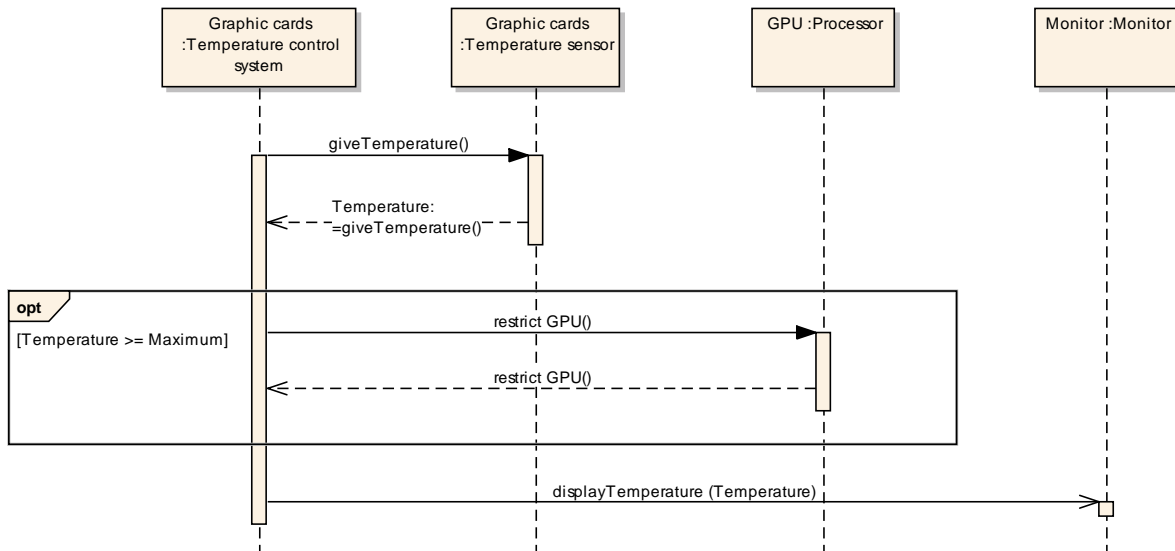
3. Modeling Scenarios

7. Two interaction diagrams (sequence diagrams) have been modeled for a scenario-based description of the CPU temperature monitoring and the graphics card of a computer. These diagrams are the basis for discussion between you, the requirements engineer, and your stakeholders. However, before you go to the next coordination meeting, you want to check the quality of the scenarios and compare the statements below with the individual scenarios.

Interaction diagram (sequence diagram) 1



Interaction diagram (sequence diagram) 2



Assess whether the following statements are correct or incorrect based on the scenarios given.

Correct	Incorrect	
<input type="checkbox"/>	<input type="checkbox"/>	A) As long as the computer is switched on, the current temperature of the CPU is displayed.
<input type="checkbox"/>	<input type="checkbox"/>	B) If the temperature of the CPU > 100°C, the temperature control system issues an error message on the monitor and switches the computer off.
<input type="checkbox"/>	<input type="checkbox"/>	C) The current temperature of the CPU is displayed regardless of whether the temperature has been exceeded.
<input type="checkbox"/>	<input type="checkbox"/>	D) If the temperature is too high, the graphics card slows down its cycle and issues an error message on the monitor.

4. Question Block — Information Structure Diagrams

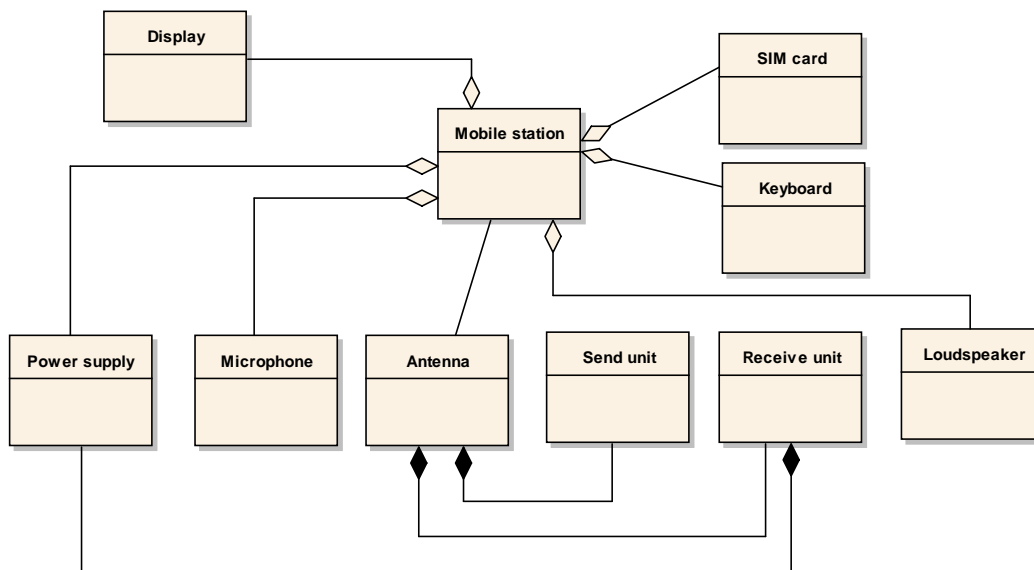
8. The mobile station consists of an antenna, a power supply, a loudspeaker, and a microphone. A send-receive-unit is connected to the antenna.. It is also possible to select another subscriber (typically via keyboard or voice entry). The mobile station usually also contains a display for showing the telephone number of the caller as well as short text messages (SMS). A further important component of the mobile station is the SIM card.

A2A0304

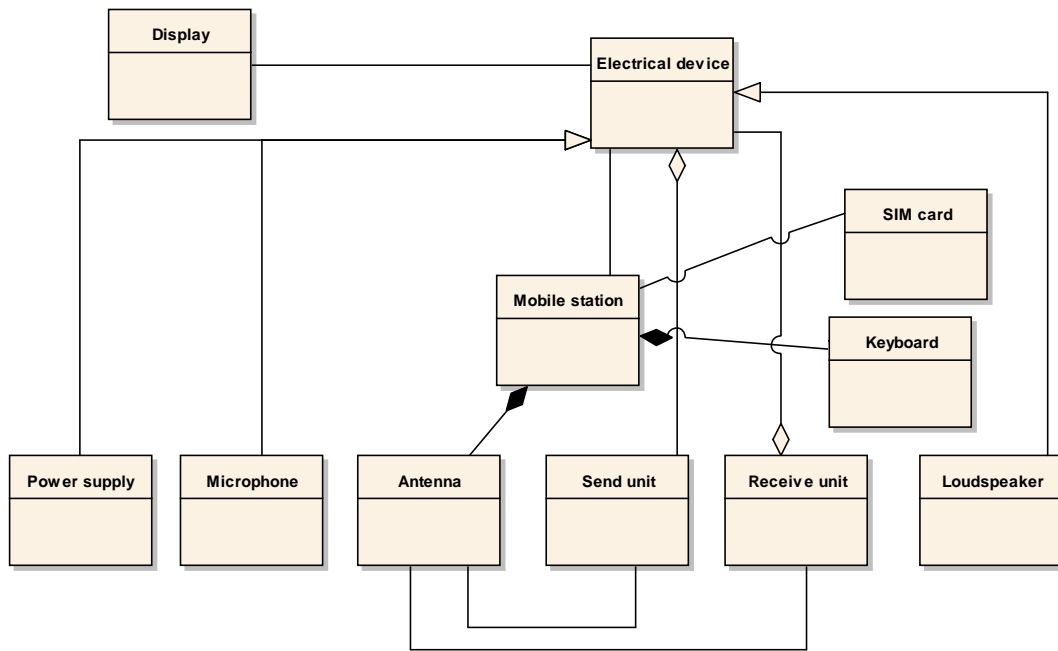
2 points

The following alternatives exist for describing the facts:

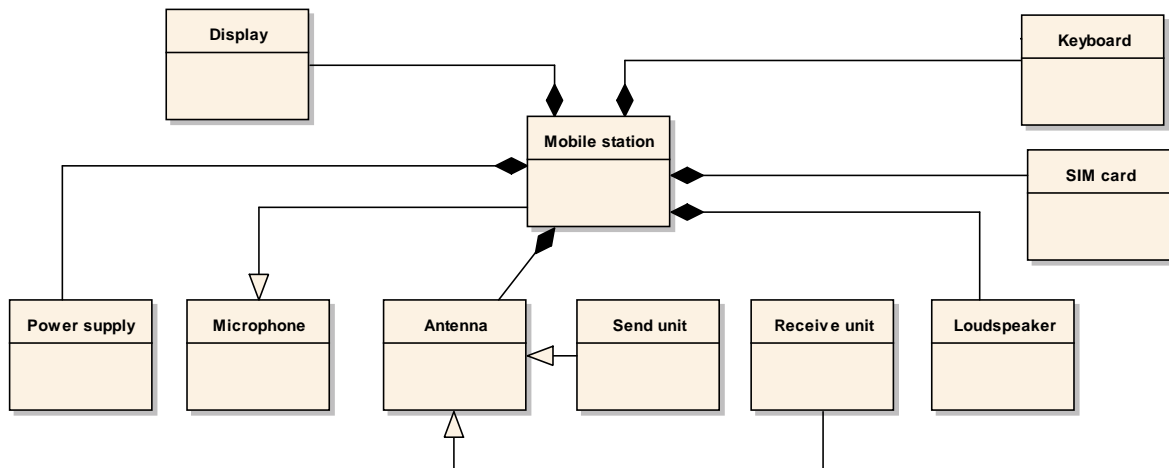
Alternative A



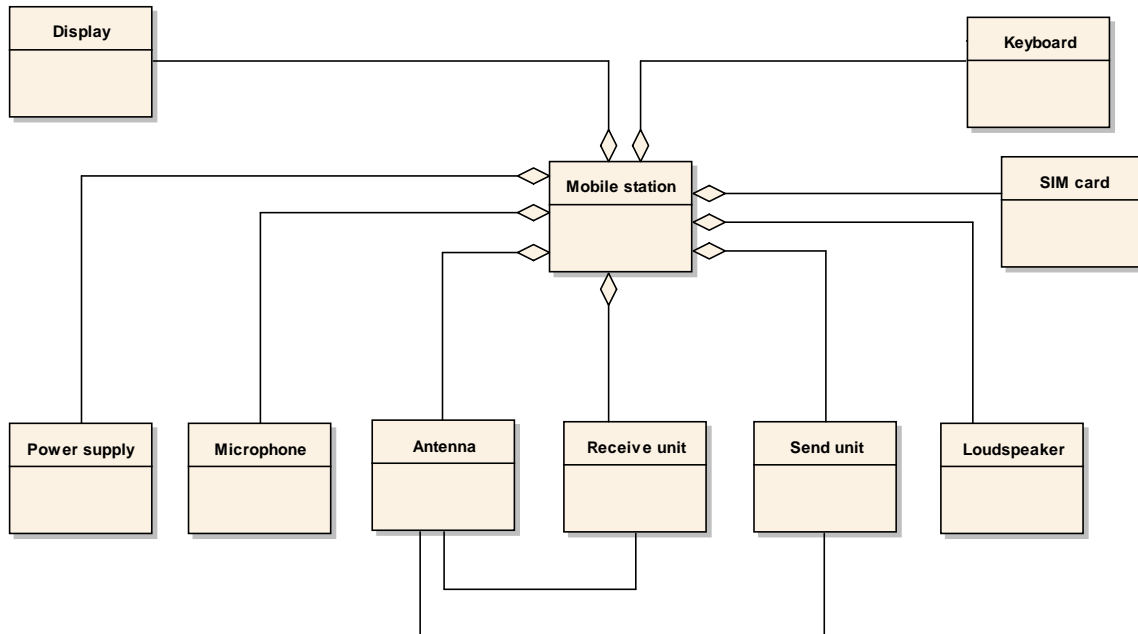
Alternative B



Alternative C



Alternative D



Which of the alternatives correctly describes the facts from the description (even if not completely)? (Choose 1 answer)

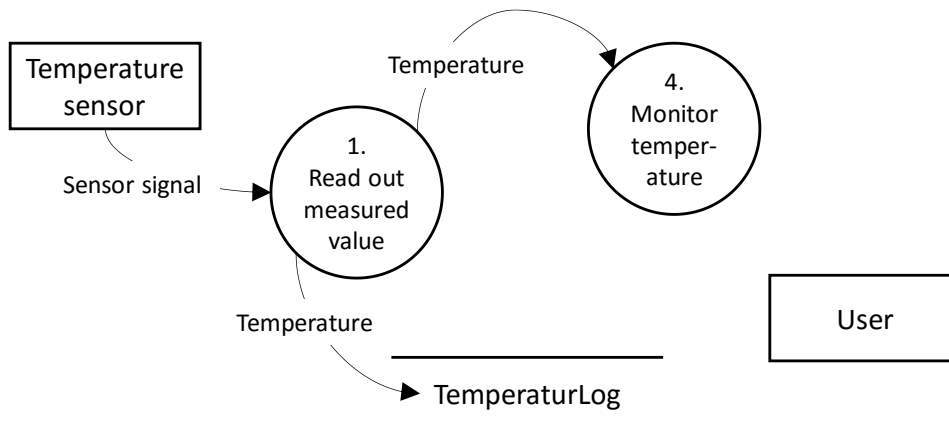
<input type="checkbox"/>	A) Alternative A
<input type="checkbox"/>	B) Alternative B
<input type="checkbox"/>	C) Alternative C
<input type="checkbox"/>	D) Alternative D

5. Question Block — Data Flow Diagrams

12. Your task is to add the processes "Shut down computer" and "Display temperature progression" to the given diagram based on the following information: A2A0402
1 point

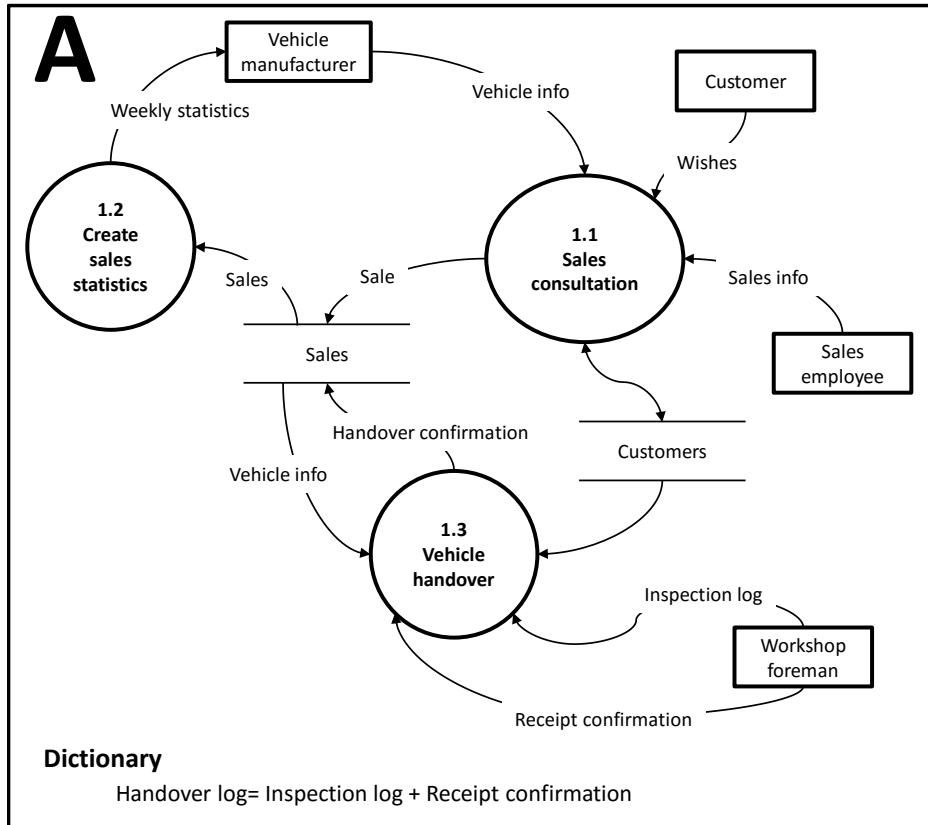
The process "Display temperature progression" reads the current temperature from the temperature log and displays it to the user as a "Temperature curve". The process "Monitor temperature" delivers a "Shutdown signal" to the process "Shut down computer". The process "Shut down computer" then issues a message to the user.

Assume the following data flow diagram:

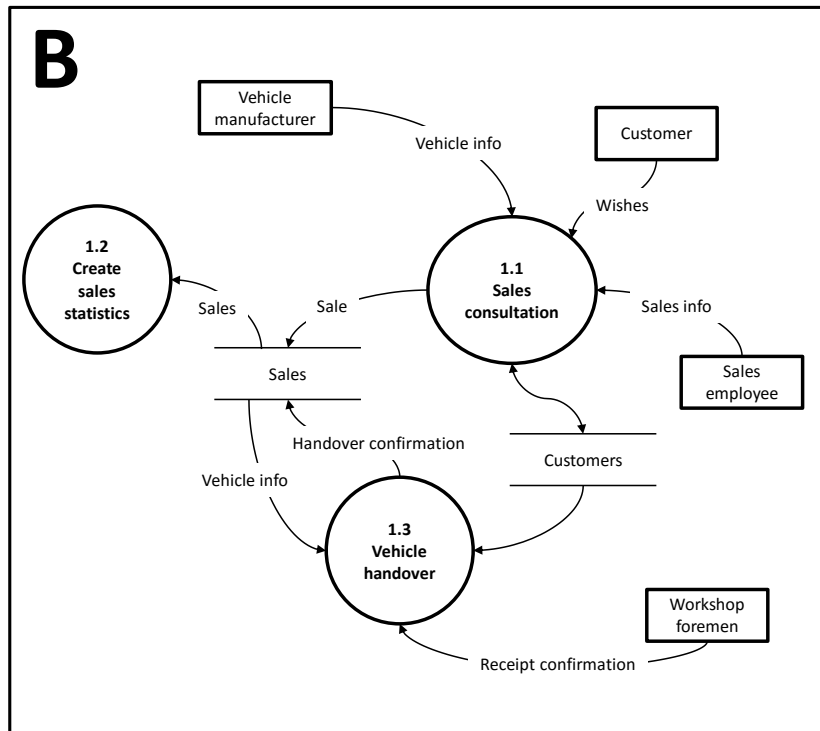


14. You have asked a relatively inexperienced employee to further refine the process "1. Sell vehicle" in the data flow diagram from Mini-Case 3 that you created at the beginning. A2A0404
2 points

Refinement A:



Refinement B:



Please select the statement that is correct with reference to the consistent refinement of the process "1. Sell vehicle" in the diagram from **Mini-Case 3**.

(Choose 1 answer)

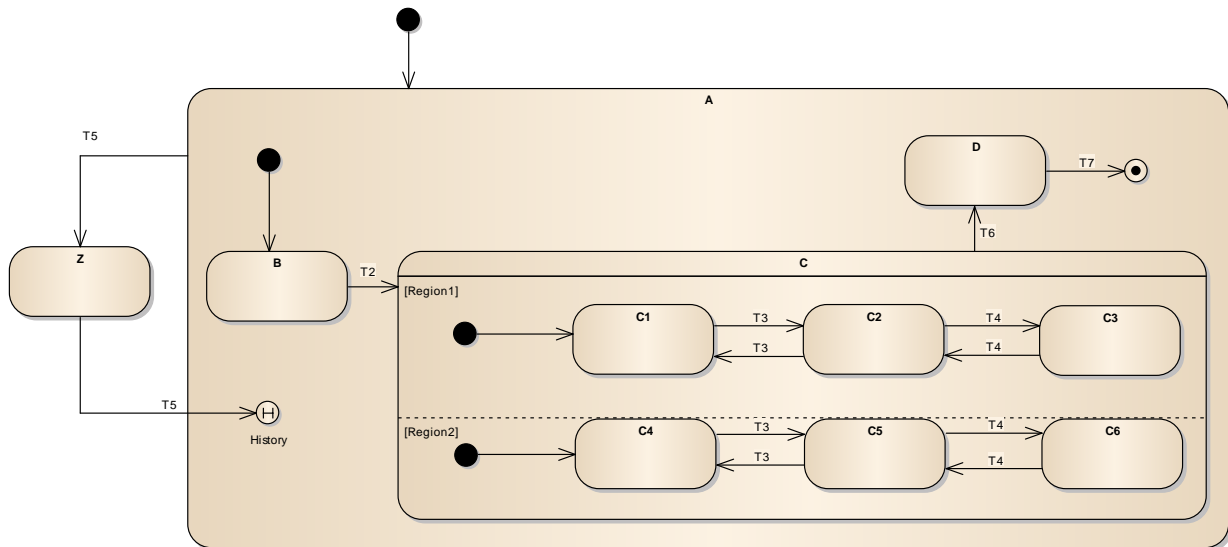
<input type="checkbox"/>	A) Neither diagram A nor diagram B is a consistent refinement.
<input type="checkbox"/>	B) Only diagram A is a consistent refinement.
<input type="checkbox"/>	C) Only diagram B is a consistent refinement.
<input type="checkbox"/>	D) Diagram A and diagram B are both consistent refinements.

6. Question Block — State-Transition Diagrams

15. Assume the following state machine with hierarchical states:

A2A0503

1 point



In which state is the machine once the following sequence of events has been received?
T2, T3, T4, T5, T5? (Choose 1 answer)

<input type="checkbox"/>	A) In state C with substates C3 and C6
<input type="checkbox"/>	B) In state C with substates C2 and C5
<input type="checkbox"/>	C) In state C with substates C1 and C4
<input type="checkbox"/>	D) In state B