Use Case Specification for Monitoring System

This monitoring system monitors the status of the food and drink dispenser to ensure all components are working properly. For the food dispenser, it checks the stock levels of food and if it is low, sends a report to the service company about said item. For the water dispenser, it checks the water level, temperature and number of cups left and makes a report/adjustment if any of these factors are incorrect.

**Basic flow of events**

The use case begins when the system conducts a regularly scheduled check. This occurs either 15 minutes after the last check or after every order made by a customer.

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| --- | --- |
| System: | Attempts to communicate with the food dispenser (A1) |
| Food dispenser: | Returns the number of items and their stock levels (A2) |
| System: | Verifies the number of items and their stock levels are correct and do not need replace (A3)  Attempts to communicate with the water dispenser (A4) |
| Water Dispenser: | Returns the level of the water, the temperature of the water and the number of cups left in the dispenser. (A5) |
| System: | Verifies the level of the water, the temperature of the water and the number of cups left and that nothing needs to be changed/replaced. (A6) (A7) (A8)  Start a timer for 15 minutes to perform the next check in said time.  Check if any reports are saved and if they need to be sent (A11) |

**Alternative Flows**

**A1 – The Food Dispenser does not respond.**

The food dispenser fails to respond to the initial communication attempt made by the system.

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| --- | --- |
| System: | Attempts to communicate with the food dispenser (A1.1) |
| Food dispenser: | Returns the number of items and their stock levels (A2) |
| System | Verifies the number of items and their stock levels are correct and do not need replace (A3)  Returns to the stage in the basic flow of events after the food dispenser check. |

**A1.1 The food dispenser does not respond for a second time.**

The food dispenser failed to respond for the second time in a row.

|  |  |
| --- | --- |
| System: | Generate a report of the incident, detailing that communication with the food dispenser failed and the date/time.  Connect to the Service Company’s service notification system (A10) |
| Service Company’s service notification system | Send back confirmation that the report has been received (A11) |
| System: | Receive confirmation that the report has been received (A11)  Returns to the stage in the basic flow of events after the food dispenser check. |

**A2 Food dispenser data fail.**

The food dispenser has been connected to but does not send back the data requested.

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| --- | --- |
| System: | Attempt to communicate with the food dispenser (A1) |
| Food dispenser: | Returns the number of items and their stock levels (A2.1) |
| System: | Verifies the number of items and their stock levels are correct and do not need replace (A3)  Returns to the stage in the basic flow of events after the food dispenser check. |

**A2.2 Food dispenser data fail twice in a row.**

The food dispenser did not send the data back for the second time in a row.

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| --- | --- |
| System: | Generate a report of the incident, detailing that the food dispenser failed to return the data requested and the date/time it happened.  Connect to the Service Company’s service notification system (A10)  Send the report to the service company’s service notification system. |
| Service Company’s service notification system | Send back confirmation that the report has been received (A11) |
| System: | Receive confirmation that the report has been received (A11)  Returns to the stage in the basic flow of events after the food dispenser check. |

**A3 Stock level error**

The stock level for a food item(s) is low/below specified level.

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| --- | --- |
| System: | Generate a report containing the name and current stock level of all items in the machine, the date/time the report was made and the ID of the vending machine making the report.  Connect to the Service Company’s service notification system (A10)  Send the report to the Service Company’s service notification system. |
| Service Company’s service notification system | Send back confirmation that the report has been received(A11) |
| System: | Receive confirmation that the report has been received(A11)  Return to the stage in basic flow of events after the food dispenser check. |

**A4 Water dispenser response fail**

The water dispenser fails to respond.

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| --- | --- |
| System: | Attempts to communicate with the water dispenser (A4.1) |
| Water dispenser: | Returns the level of the water, the temperature of the water and the number of cups left in the dispenser. (A5) |
| System | Verifies the level of the water, the temperature of the water and the number of cups left and that nothing needs to be changed/replaced. (A6) (A7) (A8)  Returns to the stage in the basic flow of events after the water dispenser communication attempt. |

**A4.1 Water dispenser response fail for 2nd time in a row.**

The water dispenser failed to respond for the second time in a row.

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| --- | --- |
| System: | Generate a report of the incident, detailing that communication with the water dispenser failed and the date/time.  Connect to the Service Company’s service notification system (A10)  Send the report to the Service Company’s service notification system. |
| Service Company’s service notification system | Send back confirmation that the report has been received (A11) |
| System: | Receive confirmation that the report has been received (A11)  Returns to the stage in the basic flow of events after the water dispenser communication attempt. |

**A5 Water dispenser data response fail**

The water dispenser failed to return one of or all the pieces of data requested.

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| --- | --- |
| System: | Request the level of the water, temperature of the water and number of cups left from the water dispenser. |
| Water Dispenser: | Return the level of the water, temperature of the water and number of cups left in the water dispenser (A5.1) |
| System: | Receive the data.  Return to basic flow of events |

**A5.1 Water dispenser data response fail 2nd time in a row.**

The water dispenser has failed to send the requested data twice in a row.

|  |  |
| --- | --- |
| System: | Generate a report of the incident, detailing that the water dispenser failed to send the required data to the system upon request and the date/time.  Connect to the Service Company’s service notification system (A10)  Send the report to the Service Company’s service notification system. |
| Service Company’s service notification system | Send back confirmation that the report has been received (A11) |
| System: | Receive confirmation that the report has been received (A11)  Returns to the stage in the basic flow of events after the water dispenser communication attempt. |

**A6 Water Level error**

There is not enough water in the water dispenser.

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| --- | --- |
| System: | Generate a report of the incident, detailing the date/time, the ID of the vending machine and the current level of the water in the dispenser.  Connect to the Service Company’s service notification system (A10)  Send the report to the Service Company’s service notification system. |
| Service Company’s service notification system | Send back confirmation that the report has been received (A11) |
| System: | Receive confirmation that the report has been received (A11)  Returns to the stage in the basic flow of events after the water level stage. |

**A7 Temperature Levels error**

The water/liquid inside the dispenser is too warm.

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| --- | --- |
| System: | Communicate to the water dispenser that the liquid is too warm. |
| Water dispenser: | Lowers the liquids temperature to specified level and sends confirmation to system (A7.1) |
| System: | Returns to basic flow of events. |

**A7.1 Temperature regulation failure**

The water/liquid could not be cooled to the specified temperature.

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| --- | --- |
| System: | Generate a report of the incident, detailing the date/time, the ID of the vending machine and the current temperature of the water/liquid in the dispenser.  Connect to the Service Company’s service notification system (A10)  Send the report to the Service Company’s service notification system. |
| Service Company’s service notification system | Send back confirmation that the report has been received (A11) |
| System: | Receive confirmation that the report has been received (A11)  Returns to the stage in the basic flow of events after the water temperature stage. |

**A8 Cup amount error**

The number of cups in the water dispenser is too low.

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| --- | --- |
| System: | Generate a report of the incident, detailing the date/time, the ID of the vending machine and the number of cups in the dispenser.  Connect to the Service Company’s service notification system (A10)  Send the report to the Service Company’s service notification system. |
| Service Company’s service notification system | Send back confirmation that the report has been received (A11) |
| System: | Receive confirmation that the report has been received (A11)  Returns to the stage in the basic flow of events after the number of cups stage. |

**A9 Service company’s service notification system connection failed.**

The system has failed to connect to the Service Company’s service notification system.

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| --- | --- |
| System: | Save the report and append that connection to the notification system failed.  Send the report once connection to the notification system is re-established.  Return to basic flow of events. |

**A10 Notification system confirmation fail.**

The Notification System does not send back confirmation it has received a report.

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| --- | --- |
| System: | Save the report and append that the notification system failed to send confirmation.  Send the new report to the notification system in the next check.  Return to basic flow of events. |

**A11 Send saved reports.**

The system detects that it has reports it needs to send to the notification system.

|  |  |
| --- | --- |
| System: | Connect to the Service Company’s service notification system (A10)  Send the saved report to the Service Company’s service notification system. |
| Service Company’s service notification system | Send back confirmation that the report has been received (A11) |
| System: | Receive confirmation that the report has been received (A11)  Returns to the stage in the basic flow of events after the send saved reports stage. |