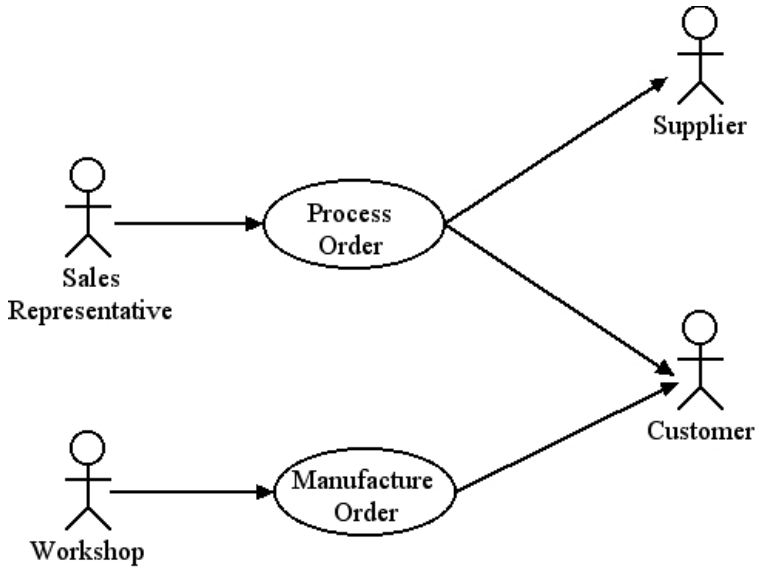
Tutorial 2: Use Cases - Sample Solution

(a) The information about characteristics of the system is ignored as irrelevant at this stage, although it might be useful for design purposes. A possible use case diagram:



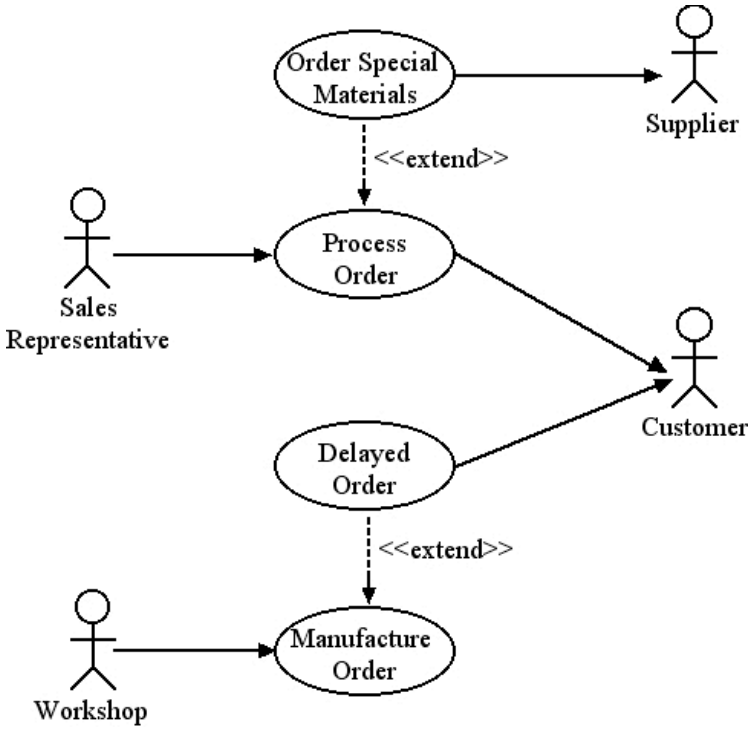
Informal descriptions of the use cases:

Process Order. Sales Representative enters an incoming order. If the order requires special materials then place an order with the relevant supplier, possibly Business To Business (B2B). There could be more than one lot of special materials required for a given customer order, so we may need to make several orders for special materials to different suppliers? Add the order to the production list and notify the customer of the projected delivery date by e-mail or generate a standard letter.

{*Pre-condition of Process Order*: If there are errors or omissions in the order then the Sales Representative contacts the customer to rectify the problems and make amendments to the order, before adding it to the system.}

Manufacture Order. Workshop checks if there is an order in the holding list ready for production, if so then proceed to manufacture this order. Otherwise take the next order from the production list. If this order cannot be manufactured then add it to the holding list and inform the customer by e-mail or letter. Repeat this process with the next order in the production list and continue until there is an order that can be manufactured.

An alternative solution could separate the special cases from the standard cases and link them using <<extend>>. For example:



Process Order. Sales Representative enters an incoming order. Add the order to the production list and notify the customer of the projected delivery date by e-mail or generate a standard letter.

{*Pre-condition of Process Order*: If there are errors or omissions in the order then the Sales Representative contacts the customer to rectify the problems and make amendments to the order, before adding it to the system.}

Order Special Materials. If the order requires special materials then place an order with the relevant supplier (B2B = Business to Business). There could be more than one lot of special materials required for a given customer order, so we may need to make several orders for special materials to different suppliers?

Manufacture Order. Workshop checks if there is an order in the holding list ready for production, if so then proceed to manufacture this. Otherwise take the first scheduled order from the production list and proceed to manufacture it.

Delayed Order. If the next order scheduled for manufacture cannot proceed then add it to the holding list and inform the customer.

We could use the information about the frequencies of special orders and how often orders are delayed to decide whether to use <<extend>>. We could also decide on whether it is worth using <<extend>> by considering the overall complexity of two original use cases we defined above.