Business Process Management Systems (2II55)
Party store "Drankorgel"

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1 Settings

1.1 Organizational context

The Party store is composed of four groups - the warehouse, store, administration and logistics department. The organizational model of the party store is presented below where the blue color represents groups and the green color represents roles.

Figure 1: Organizational context of the Party store

1.2 Workflow process PartyParty (A)

When someone places an order the good people of "Drankorgel" will prepare the order. Also, for each order there will be some logistics involved. These will be scheduled only when the customer has payed the bill. The customer can directly pay or choose to pay by bill.

When the customer has payed the bill, the order is completed. When the bill is not payed within a week, a reminder will be sent. If the customer does'nt pay after two reminders the order is canceled and the prepared goods are put back into the warehouse.

The preparing of an order will involve picking the order until the entire order is prepared. Then the goods are checked and send if the order is complete. If the order picker made a mistake he will have the opportunity to re-pick until the inspection is ok. If some goods are out of stock and need to be ordered, the order can only be finished upon arrival of the goods.

After preparing the order and receiving the money the goods are ship by the planned logistic means. If the order contained hired wares, that equipment will be retrieved by the company. If, after the inspection, everything seems in order, then the customer will not be bothered until the next order he or she places. If something is wrong, an extra fine has to be paid depending on the damage or missing equipment. If the customer does not pay after getting two reminders, he will be sued and the money will eventually go to the store.

1.3 Workflow process WarehouseWarehouse (B)

Every now and then an employee checks if the warehouse needs to be restocked or if some goods passed their freshness date. This is done by hand and for every item the store sells. If a certain item passed the date, it is thrown away. If not, the next item will be evaluated. If the quantity is low for that item, it will be put on the 'restock list'.

If the employee finished the route in the warehouse and inspected all the goods, the 'restock list' is used to order the items that were running out of stock.

Upon arrival of new goods, the entire order needs to be checked before the item are put in the warehouse. An employee checks for both missing (ordered but not received) and extra (received but not ordered) items. Missing items will be re-ordered and extra goods will be returned.

After checking the order some employee will place the items on the right shelf in the warehouse.

2 Protos models

2.1 Workflow process PartyParty

2.1.1 Process perspective

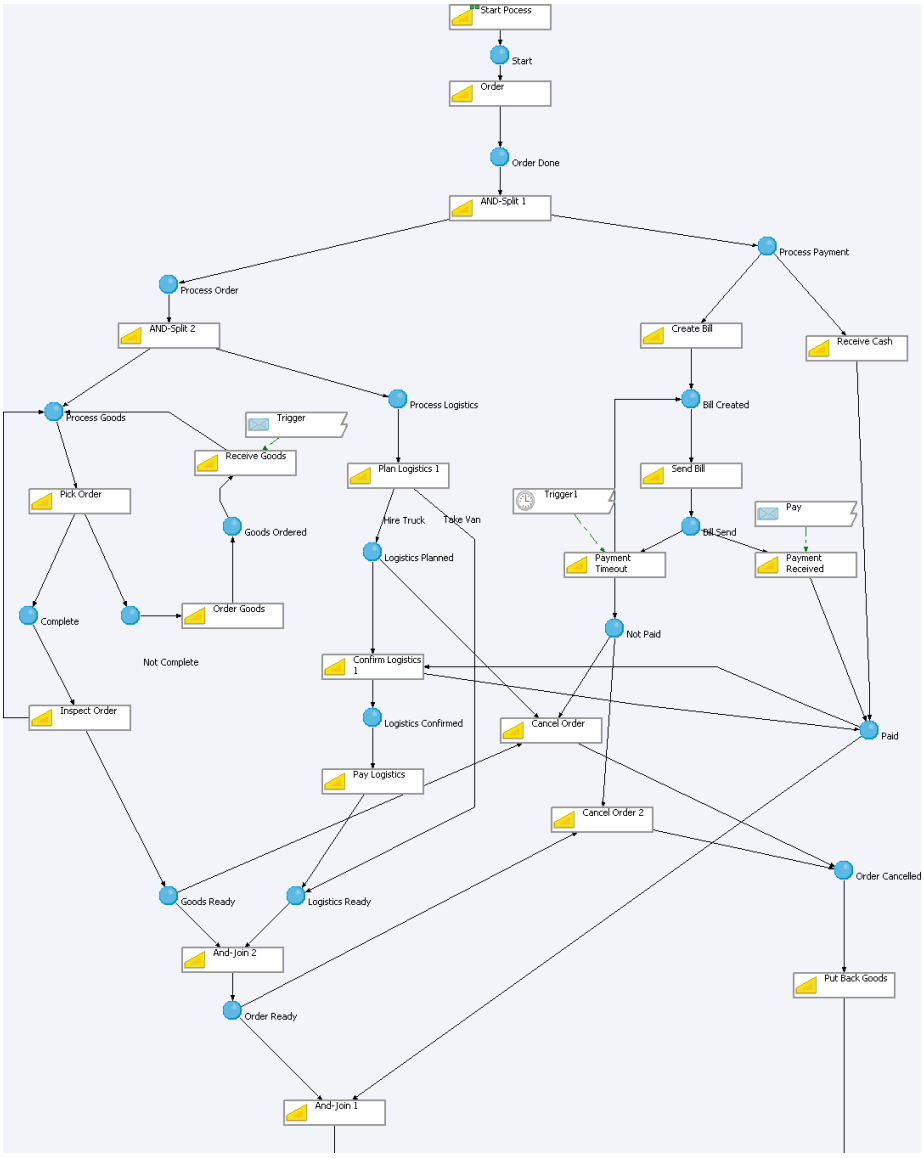


Figure 2: Workflow process PartyParty (Top Half)

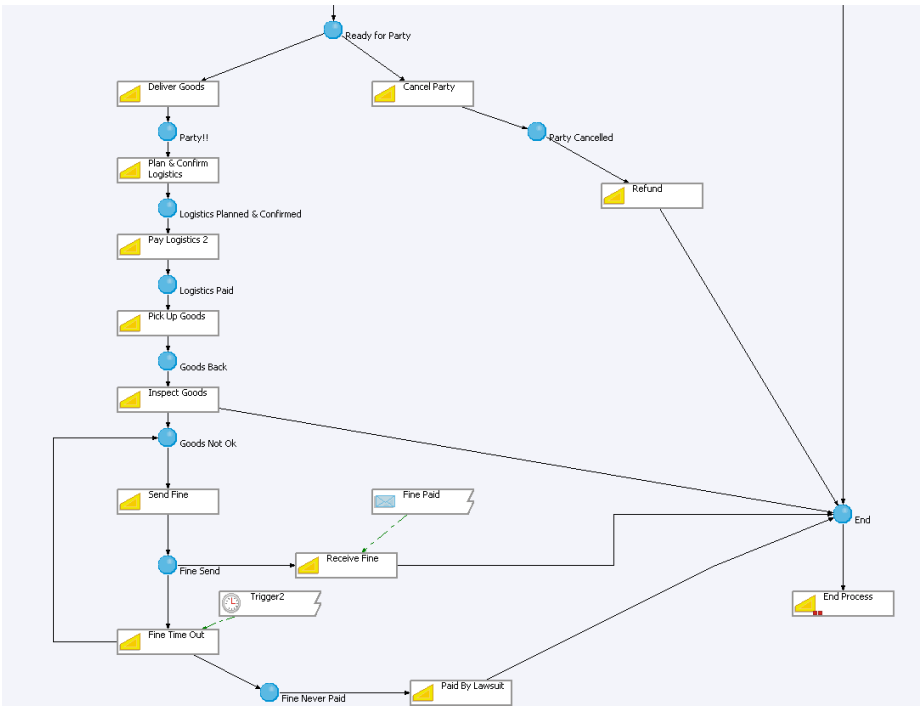


Figure 3: Workflow process PartyParty (Bottom Half)

2.1.2 Resource perspective

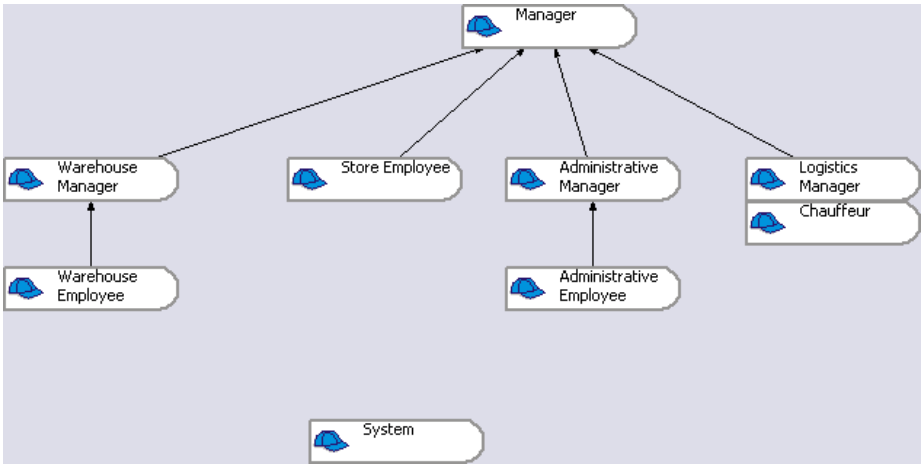


Figure 4: Resource Perspective PartyParty

Role	**Manager**
Number of Persons	1
Cost	0

Role	**Warehouse Manager**
Number of Persons	2
Cost	0

Role	**Administration Manager**
Number of Persons	3
Cost	0

Role	**Warehouse Employee**
Number of Persons	10
Cost	0

Role	**Store Employee**
Number of Persons	10
Cost	0

Role	**Logistics Employee**
Number of Persons	3
Cost	0

Role	**Chauffeur**
Number of Persons	2
Cost	0

Role	**Administration Employee**
Number of Persons	5
Cost	0

Team	**Warehouse**

Team	**Store**

Team	**Administration**

Team	**Logistics**

2.1.3 Explanation

I. After a Store Employee receives an order from a customer, there's 2 things that will need to be accomplished. The order has to be prepared to be shipped and payment for the order has to be received. These tasks can be performend in parallel of eachother, but can only finish when both tasks are completed.

II. Unless an order is cancled by the customer by not paying the bill, the prepared order is then cancled and goods returned. There is a milestone in place to assure that the order is not shipped out before payment is received.

2.1.4 Task description

Name	Executor	Description
Order	Store employee	The store employee takes an order of a customer.
Receive cash	Store employee	The store employee receives the cash money from the customer.
Create bill	Administrative employee	The order is processed and the bill for the customer is being created.
Send bill	Administrative employee	The bill is being send to the customer.
Payment received	Administrative manager	The manager marks the order as being payed.
Payment timeout	System	
Plan logistics 1	Logistics employee	The manager plans the logistics used for the shipment of the ordered goods.
Confirm logistics 1	Logistics employee	The manager confirms the logistics after the payment has been received.
Pay logistics 1	Administrative manager	The manager pays the logistics after the logistics have been confirmed.
Pick order	Warehouse employee	The employee picks the needed goods for the order.
Order goods	Warehouse manager	The manager orders the goods needed to complete the order.
Receive goods	Warehouse employee	Employee e_1 receives the goods ordered by the manager to complete the order.
Inspect order	Warehouse employee	Employee e_2, where $e_1 \neq e_2$, inspects the order for completeness.
Cancel order	Manager	The manager can decide to cancel an order
Put back goods	Store employee	After a order is canceled the goods are placed back into the warehouse.
Cancel party	Manager	After the payment has been done and before the goods are being delivered, the party can be canceled by the manager.
Deliver goods	Chauffeur	The chauffeur delivers the goods to the party.
Refund	Administrative manager	After the cancelation of a party the manager can refund the money paid by the customer.
Plan logistics 2	Logistics employee	The manager plans the logistics for the retrieval of the goods.
Confirm logistics 2	Logistics employee	The manager confirms the logistics for the retrieval of the goods.
Pay logistics 2	Administrative manager	The manger pays the money for the logistics of the retrieval of the goods.
Pick up goods	Chauffeur	The chauffeur retrieves the goods after the party has been held.
Inspect goods	Warehouse manager	The manager inspects the retrieved goods for damages or missing parts.
Send fine	Administrative employee	The employee sends a fine for the damaged or missing goods.
Fine timeout	System	
Receive fine	Administrative manager	The manager has received the money for the fine.
Paid by lawsuit	Administrative manager	The manager has sued the customer and eventually received the money.

2.1.5 Data perspective

Order specifications:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Order	✓	✓		
Main process	Receive cash	✓			
Main process	Create bill	✓			
Main process	Send bill	✓			
Main process	Payment timeout	✓			✓
Main process	Pick order	✓			
Main process	Inspect order	✓			
Main process	Plan logistics 1	✓			
Main process	Cancel order	✓			
Main process	Put back goods	✓			✓
Main process	Cancel party	✓			
Main process	Refund	✓		✓	
Main process	Plan logistics 2	✓			
Main process	Confirm logistics 2	✓			
Main process	Inspect goods	✓			
Main process	Send fine	✓			✓
Main process	Receive fine	✓		✓	
Main process	Fine timeout	✓			✓
Main process	Paid by lawsuit	✓		✓	

Customer specifications:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Order	✓	✓		
Main process	Receive cash	✓			
Main process	Create bill	✓			
Main process	Send bill	✓			
Main process	Payment timeout	✓			✓
Main process	Payment received	✓			✓
Main process	Cancel order	✓			
Main process	Cancel party	✓			
Main process	Refund	✓		✓	
Main process	Send fine	✓			✓
Main process	Receive Fine	✓		✓	
Main process	Fine timeout	✓			✓
Main process	Paid by lawsuit	✓		✓	

Order price:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Order	✓	✓		
Main process	Receive cash	✓			
Main process	Create bill	✓			
Main process	Send bill	✓			
Main process	Payment received	✓			
Main process	Payment timeout	✓			✓
Main process	Refund	✓		✓	
Main process	Send fine	✓			✓
Main process	Receive fine	✓		✓	
Main process	Fine timeout	✓			✓
Main process	Paid by lawsuit	✓		✓	

Ordering list:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Order goods	✓	✓		
Main process	Receive goods	✓		✓	

Order pick list:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Pick order	✓	✓		
Main process	Order goods	✓			
Main process	Receive goods	✓			
Main process	Inspect order	✓			
Main process	AND-join	✓		✓	

Logistics plan:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Plan logistics 1	✓	✓		
Main process	Confirm logistics 1	✓			
Main process	Pay logistics 1	✓			
Main process	Deliver goods	✓		✓	
Main process	Plan logistics 2	✓	✓		
Main process	Confirm logistics 2	✓			
Main process	Pay logistics 2	✓			
Main process	Pick up goods	✓		✓	

Chauffeur id:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Plan logistics 1	✓	✓		
Main process	Confirm logistics 1	✓			
Main process	Pay logistics 1	✓			
Main process	Deliver goods	✓		✓	
Main process	Plan logistics 2	✓	✓		
Main process	Confirm logistics 2	✓			
Main process	Pay logistics 2	✓			
Main process	Pick up goods	✓		✓	

Jurisdictional rules:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Send fine	✓	✓		
Main process	Receiver fine	✓			
Main process	Fine timeout	✓			
Main process	Paid by lawsuit	✓		✓	

Warehouse employee id:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Inspect order	✓	✓	✓	
Main process	Inspect goods	✓	✓	✓	

Cancelation form:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Cancel order	✓	✓		
Main process	Put back goods	✓		✓	
Main process	Cancel party	✓	✓		
Main process	Refund	✓		✓	

3 Protos models

3.1 Workflow process WarehouseWarehouse

3.1.1 Process perspective

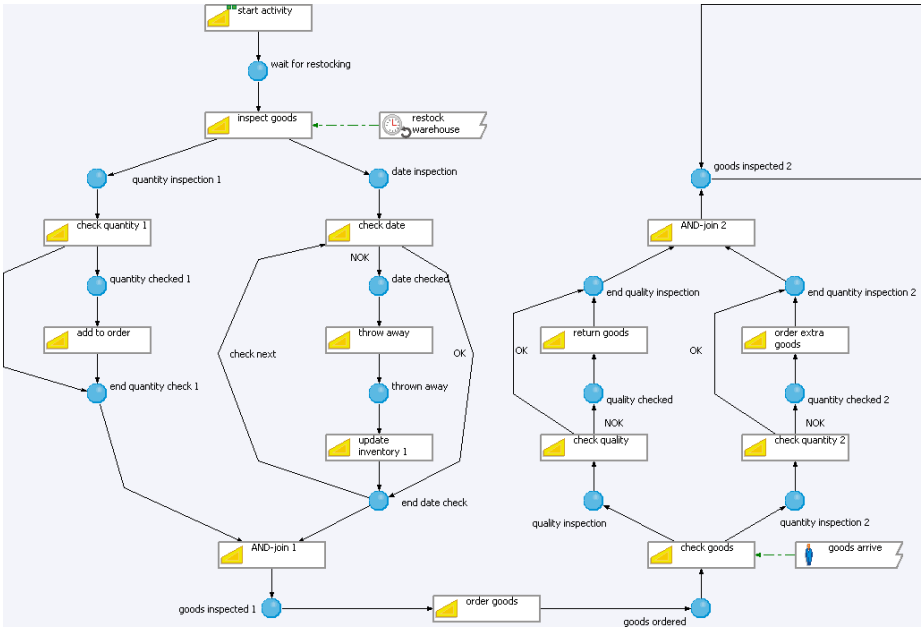


Figure 5: Workflow process WarehouseWarehouse (Left Half)

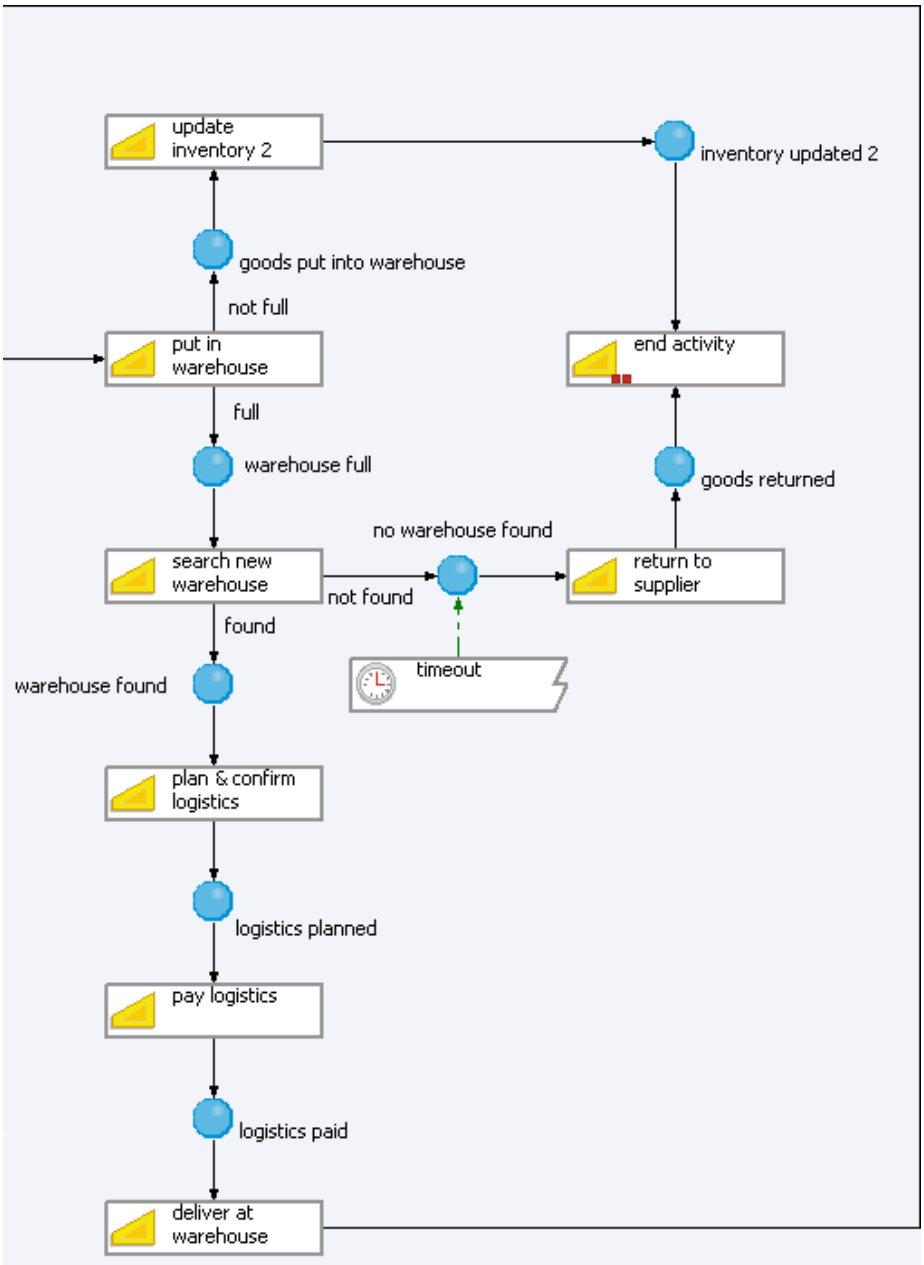


Figure 6: Workflow process WarehouseWarehouse (Right Half)

3.1.2 Resource perspective

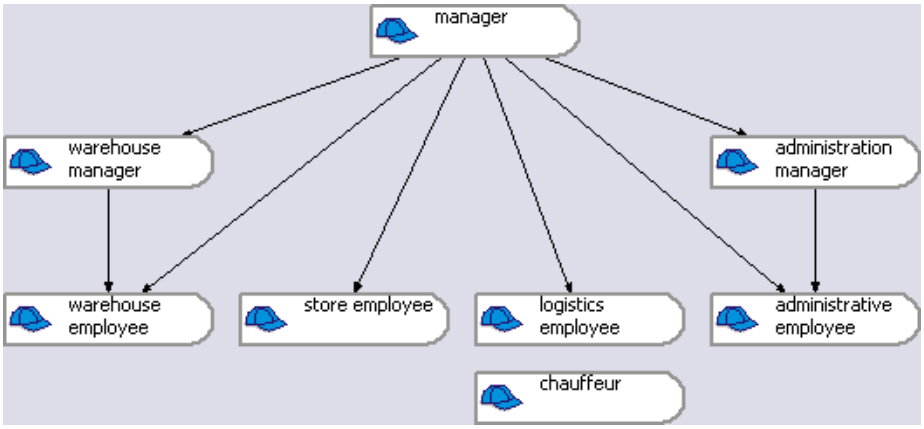


Figure 7: Resource Perspective WarehouseWarehouse

Role	**Manager**
Number of Persons	1
Cost	0

Role	**Warehouse Manager**
Number of Persons	2
Cost	0

Role	**Administration Manager**
Number of Persons	3
Cost	0

Role	**Warehouse Employee**
Number of Persons	10
Cost	0

Role	**Store Employee**
Number of Persons	10
Cost	0

Role	**Logistics Employee**
Number of Persons	3
Cost	0

Role	**Chauffeur**
Number of Persons	2
Cost	0

Role	**Administration Employee**
Number of Persons	5
Cost	0

Team	**Warehouse**

Team	**Store**

Team	Administration

Team	Logistics

3.1.3 Explanation

I. A warehouse employee starts his day with either checking the quantity or the date of a product. After this a Warehouse manager orders the missing goods. Once the items are received a Warehouse manager accepts the order and a Warehouse employee needs to check both the quantity aswell as the quality of the received goods. A warehouse employee finally checks wether there is actually room in the Warehouse. If so then the goods are placed and inventory updated. If not a new warehouse will be found and sent there.

3.1.4 Task description

Name	Executor	Description
Inspect goods	Warehouse employee	The employee inspects the goods inside the warehouse for both freshness date and quantity.
Check date	Warehouse employee	The employee checks the freshness date of a particular item.
Throw away	Warehouse employee	The employee discards of the item if it expired it's date.
Update inventory	Warehouse manager	The manager updates the inventory after an item is discarded.
Check quantity	Warehouse employee	The employee checks the quantity of a particular item.
Add to order	Warehouse employee	The employee adds the out of stock item to the ordering list.
AND-join	System	
Order goods	Warehouse manager	The manager orders the goods that are on the ordering list.
Check goods	Warehouse employee	The employee checks the goods after an order arrives if it's complete.
Check quality	Warehouse employee	The employee checks the quality of the incoming goods.
Return goods	Warehouse employee	The employee returns the goods which were lacking quality.
Check quantity	Warehouse employee	The employee checks if the quantity of the goods is correct.
Order extra goods	Warehouse manager	The manager re-orders the missing items.
AND-Join	System	
Put in warehouse	Warehouse employee	The employee puts the incoming goods inside the warehouse.
Update inventory	Warehouse manager	The manager updates the inventory after the new items arrived.
Search new warehouse	Manager	The manager searches for a suitable new warehouse.
Plan & confirm logistics	Logistics employee	The manager plans and confirms the logistics for the reshipment of the goods.
Pay logistics	Logistics employee	The manager pays the logistics for the reshipment of the goods.
Deliver at warehouse	Chauffeur	The chauffeur delivers the goods to the new warehouse.

3.1.5 Data perspective

Inspect Date List:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Inspect goods	✓	✓		
Main process	Check date	✓			
Main process	Throw away	✓			✓
Main process	Update inventory 1	✓			
Main process	And-join	✓			

Throw Away Documents:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Inspect goods	✓	✓		
Main process	Check date	✓			✓
Main process	Throw away	✓			
Main process	And-join	✓		✓	

Inspect Quantity List:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Inspect goods	✓	✓		
Main process	Check quantity	✓			✓
Main process	Add to order	✓			
Main process	And-join	✓		✓	

Ordering list:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Inspect goods	✓	✓		
Main process	Check quantity	✓			
Main process	Add to order	✓			✓
Main process	And-join	✓			
Main process	Order goods	✓			
Main process	Check goods	✓			
Main process	Check quality				
Main process	Return goods				
Main process	Check quantity	✓			
Main process	Order extra goods	✓			
Main process	And-join	✓		✓	

Complaint form:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Check goods	✓	✓		
Main process	Check quality	✓			✓
Main process	Return goods	✓			
Main process	And-join	✓		✓	

Item list:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	And-join	✓	✓		
Main process	Put in warehouse	✓			✓
Main process	Update inventory 2	✓		✓	
Main process	Search new warehouse	✓			
Main process	Return to supplier	✓			
Main process	Plan & confirm logistics	✓			
Main process	Pay logistics				
Main process	Deliver goods	✓			

Item checklist:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Put in warehouse	✓	✓		
Main process	Update inventory 2	✓		✓	

Warehouses list:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Search new warehouse	✓	✓		
Main process	Return to supplier	✓		✓	
Main process	Plan & confirm logistics	✓			
Main process	Deliver goods	✓		✓	

Logistics documents:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Return to supplier	✓			
Main process	Plan & confirm logistics	✓	✓		
Main process	Pay logistics	✓			
Main process	Deliver goods	✓		✓	

Supplier documents:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Add to order	✓			
Main process	Order goods	✓			
Main process	Check goods	✓			
Main process	Check quality				
Main process	Return goods	✓			
Main process	Check quantity				
Main process	Order extra goods	✓			
Main process	Return to supplier	✓			

Warehouse inventory:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Inspect goods	✓			
Main process	Update inventory 1	✓			✓
Main process	Put in warehouse	✓			
Main process	Update inventory 2	✓			✓
Main process	Return to supplier	✓			✓
Main process	Search new warehouse	✓			
Main process	Deliver goods	✓			

Financial register:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Order goods	✓			
Main process	Order extra goods	✓			
Main process	Return to supplier	✓			
Main process	Search new warehouse	✓			
Main process	Plan & confirm logistics	✓			
Main process	Pay logistics	✓			✓

Employee ID:

Subprocess	Object	Mandatory	Created	Deleted	Changed
Main process	Check date	✓			
Main process	Check quantity	✓			
Main process	Check quality	✓			
Main process	Check quantity	✓			

4 Simulation Results

4.1 Workflow process PartyParty

Roles					
	Utilization Rate				
	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
Warehouse Employee	0.99	0.97	1.02	0.94	1.04
Warehouse Manager	0.48	0.39	0.57	0.32	0.63
Store Employee	0.99	0.97	1.01	0.96	1.03
Administrative Employee	0.99	0.97	1.01	0.96	1.02
Administrative Manager	0.88	0.77	0.99	0.69	1.08
Chauffeur	0.58	0.42	0.74	0.29	0.87
Logistics Manager	0.99	0.98	1.01	0.97	1.02
Manager	0.11	0.08	0.14	0.05	0.17
System	0.07	0.07	0.08	0.06	0.09

Activities										
	Queue Time					Work Time				
	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
Start Pocess	0	0	0	0	0	0	0	0	0	0
AND-Split 2	0	0	0	0	0	0	0	0	0	0
Receive Goods	46.87	30.25	63.5	17.35	76.4	5.18	4.91	5.44	4.7	5.65
Create Bill	11.36	5.61	17.1	1.15	21.56	5.07	4.8	5.34	4.59	5.55
Inspect Order	7.04	5	9.08	3.41	10.67	5.1	4.95	5.24	4.84	5.36
Pick Order	193.69	116.45	270.94	56.51	330.88	40.36	40.09	40.62	39.89	40.83
Order	52.58	20.41	84.76	-4.56	109.72	5.04	4.92	5.16	4.82	5.25
Payment Timeout	0	0	0	0	0	5.06	4.92	5.21	4.8	5.33
Send Bill	27.22	18.78	35.66	12.23	42.21	4.89	4.68	5.11	4.51	5.27
Plan Logistics 1	112.02	64.54	159.51	27.69	196.36	5.02	4.86	5.18	4.73	5.3
Payment Received	0	0	0	0	0	1.12	-0.27	2.52	-1.36	3.6
Receive Cash	11.51	5.67	17.35	1.13	21.89	5.01	4.88	5.14	4.78	5.24
Confirm Logistics 1	3.86	2.98	4.74	2.3	5.43	5	4.77	5.23	4.59	5.41
Pay Logistics	18.47	9.18	27.76	1.97	34.97	4.66	4.27	5.05	3.96	5.35
And-Join 2	0	0	0	0	0	0	0	0	0	0
And-Join 1	0	0	0	0	0	0	0	0	0	0
Deliver Goods	0	0	0	0	0	40.09	39.38	40.79	38.83	41.34
Plan & Confirm Logistics	4.4	2.55	6.24	1.11	7.68	4.41	3.44	5.38	2.69	6.13
Pay Logistics 2	9.96	3.59	16.33	-1.36	21.28	4.66	3.69	5.63	2.94	6.39
Pick Up Goods	1.9	-0.02	3.82	-1.51	5.3	36.63	29.17	44.1	23.38	49.89
Inspect Goods	1	0.19	1.82	-0.45	2.46	4.17	3.19	5.16	2.42	5.92
Order Goods	0.79	0.36	1.23	0.02	1.57	5.07	4.86	5.27	4.7	5.43
Send Fine	12.42	5.72	19.12	0.53	24.32	3.25	1.86	4.63	0.78	5.71
Fine Time Out	3.99	0.89	7.1	-1.53	9.51	3.41	1.68	5.14	0.34	6.48
Cancel Party	0.09	-0.07	0.25	-0.2	0.38	0	0	0	0	0
Cancel Order	0	0	0	0	0	4.07	2.48	5.67	1.24	6.91
Cancel Order 2	0.29	-0.24	0.83	-0.66	1.25	3.43	2.28	4.59	1.38	5.49
AND-Split 1	0	0	0	0	0	0	0	0	0	0
Receive Fine	6.15	0.75	11.54	-3.44	15.73	3.1	1.53	4.68	0.3	5.9
Paid By Lawsuit	3.63	-1.5	8.76	-5.48	12.74	2.19	0.5	3.88	-0.81	5.19
Refund	12.2	6.35	18.05	1.81	22.59	3.69	2.35	5.03	1.31	6.08
Put Back Goods	3.66	1.95	5.36	0.63	6.69	35.76	28.45	43.07	22.78	48.74
End Process	0	0	0	0	0	0	0	0	0	0

Status										
	Wait Time					Wait+Queue Time				
	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
Start	0	0	0	0	0	52.58	20.41	84.76	-4.56	109.72
Process Payment	0	0	0	0	0	11.48	5.68	17.28	1.18	21.77
Complete	0	0	0	0	0	7.04	5	9.08	3.41	10.67
Process Goods	0	0	0	0	0	193.69	116.45	270.94	56.51	330.88
Process Logistics	0	0	0	0	0	112.02	64.54	159.51	27.69	196.36
Bill Created	0	0	0	0	0	27.22	18.78	35.66	12.23	42.21
Bill Send	0	0	0	0	0	0	0	0	0	0
Logistics Planned	18.55	7.78	29.32	-0.58	37.68	22	10.66	33.33	1.87	42.13
Not Complete	0	0	0	0	0	0.79	0.36	1.23	0.02	1.57
Paid	160.72	97.96	223.49	49.26	272.19	163.18	100.36	226.01	51.61	274.75
Logistics Confirmed	0	0	0	0	0	18.47	9.18	27.76	1.97	34.97
Goods Ready	0	0	0	0	0	0	0	0	0	0
Logistics Ready	252.5	163.98	341.01	95.29	409.7	252.5	163.98	341.01	95.29	409.7
Order Ready	0	0	0	0	0	0.07	-0.06	0.21	-0.17	0.31
Ready for Party	0	0	0	0	0	0.04	-0.03	0.11	-0.09	0.17
Order Done	0	0	0	0	0	0	0	0	0	0
Party!!	0	0	0	0	0	4.4	2.55	6.24	1.11	7.68
Logistics Planned & Confirmed	0	0	0	0	0	9.96	3.59	16.33	-1.36	21.28
Logistics Paid	0	0	0	0	0	1.9	-0.02	3.82	-1.51	5.3
Goods Back	0	0	0	0	0	1	0.19	1.82	-0.45	2.46
Not Paid	179.53	88.31	270.74	17.53	341.52	179.6	88.43	270.78	17.68	341.52
Goods Not Ok	0	0	0	0	0	12.42	5.72	19.12	0.53	24.32
Fine Send	0	0	0	0	0	6.51	2.11	10.92	-1.3	14.33
Fine Never Paid	0	0	0	0	0	3.63	-1.5	8.76	-5.48	12.74
Party Cancelled	0	0	0	0	0	12.2	6.35	18.05	1.81	22.59
Order Cancelled	0	0	0	0	0	3.66	1.95	5.36	0.63	6.69
End	0	0	0	0	0	0	0	0	0	0
Process Order	0	0	0	0	0	0	0	0	0	0
Goods Ordered	0	0	0	0	0	46.87	30.25	63.5	17.35	76.4

Total									
Lead Time					Work Time				
Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
352.44	233.93	470.95	141.98	562.9	152.62	132.4	172.84	116.71	188.53

Cost				
Mean	**Lower 90%**	**Upper 90%**	**Lower 99%**	**Upper 99%**
31.38	27.61	35.16	24.68	38.09

Comments:

I. Employee's are generally cheapest to hire, but because there is generally many more of them available, they need to be utilized as highly as possible.

II. To pick an order, a lot of tasks are involved, hence the large time to complete it.

III. The low utilization of the manager is easly explained by the fact that there's only few tasks he has to do. But you have a minimum amount of managers, so lowering this number is not an option.

5 Simulation Results

5.1 Workflow process WarehouseWarehouse

Roles					
	Utilization Rate				
	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
warehouse employee	0.97	0.9	1.03	0.86	1.07
manager	0.93	0.77	1.08	0.65	1.2
administrative employee	0	0	0	0	0
warehouse manager	0.98	0.95	1.01	0.93	1.03
store employee	0	0	0	0	0
administration manager	0	0	0	0	0
chauffeur	0.25	0.19	0.32	0.14	0.36
logistics employee	0.31	0.23	0.4	0.17	0.46
system	0	0	0	0	0

Activities										
	Queue Time					Work Time				
	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
check quantity 1	5.18	3.19	7.18	1.64	8.73	20.03	19.92	20.14	19.84	20.22
inspect goods	24.81	14.16	35.47	5.89	43.74	14.96	14.85	15.07	14.76	15.15
update inventory 1	8.71	6.82	10.6	5.35	12.07	1	1	1	1	1
AND-join 1	0	0	0	0	0	0	0	0	0	0
add to order	0	0	0	0	0	0	0	0	0	0
order goods	56.4	38.87	73.92	25.27	87.52	1.9	1.72	2.08	1.58	2.22
check goods	24.12	10.68	37.56	0.25	48	3.81	3.65	3.96	3.53	4.08
start activity	0	0	0	0	0	0	0	0	0	0
check quality	4.37	2.78	5.96	1.55	7.2	2	1.86	2.14	1.76	2.25
return goods	2.15	1.39	2.91	0.8	3.5	2.18	2.01	2.35	1.87	2.49
order extra goods	5.5	3.3	7.69	1.59	9.4	1.96	1.84	2.09	1.75	2.18
check quantity 2	3.24	2.36	4.12	1.67	4.81	1.91	1.78	2.04	1.67	2.15
AND-join 2	0	0	0	0	0	0	0	0	0	0
put in warehouse	2.43	1.69	3.17	1.12	3.74	40.02	39.76	40.27	39.56	40.47
update inventory 2	21.42	10.1	32.75	1.3	41.54	1	1	1	1	1
end activity	0	0	0	0	0	0	0	0	0	0
search new warehouse	250.21	141.52	358.9	57.18	443.24	20.03	19.44	20.62	18.99	21.08
return to supplier	0	0	0	0	0	36.54	29.04	44.05	23.22	49.87
plan & confirm logistics	0	0	0	0	0	18.17	14.46	21.88	11.59	24.76
pay logistics	0	0	0	0	0	3.6	2.87	4.33	2.3	4.9
deliver at warehouse	0	0	0	0	0	17.89	14.23	21.54	11.39	24.38
check date	76.16	49.66	102.65	29.1	123.21	1.94	1.86	2.03	1.79	2.09
throw away	10.52	5.55	15.49	1.69	19.35	4.03	3.88	4.18	3.76	4.3

Status										
	Wait Time					Wait+Queue Time				
	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%	Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
end date check	0.11	-0.03	0.26	-0.14	0.37	0.34	-0.13	0.8	-0.48	1.16
end quantity check 1	76.12	47.96	104.27	26.12	126.12	76.12	47.96	104.27	26.12	126.12
quantity checked 1	0	0	0	0	0	0	0	0	0	0
goods inspected 1	0	0	0	0	0	56.4	38.87	73.92	25.27	87.52
goods ordered	0	0	0	0	0	24.12	10.68	37.56	0.25	48
quality inspection	0	0	0	0	0	4.37	2.78	5.96	1.55	7.2
quantity inspection 2	0	0	0	0	0	3.24	2.36	4.12	1.67	4.81
quality checked	0	0	0	0	0	2.15	1.39	2.91	0.8	3.5
end quality inspection	3.28	1.99	4.57	0.98	5.58	3.28	1.99	4.57	0.98	5.58
end quantity inspection 2	2.5	1.41	3.6	0.56	4.45	2.5	1.41	3.6	0.56	4.45
quantity checked 2	0	0	0	0	0	5.5	3.3	7.69	1.59	9.4
wait for restocking	0	0	0	0	0	24.81	14.16	35.47	5.89	43.74
goods inspected 2	0	0	0	0	0	2.43	1.69	3.17	1.12	3.74
goods put into warehouse	0	0	0	0	0	21.42	10.1	32.75	1.3	41.54
inventory updated 2	0	0	0	0	0	0	0	0	0	0
warehouse full	0	0	0	0	0	250.21	141.52	358.9	57.18	443.24
no warehouse found	0	0	0	0	0	0	0	0	0	0
quantity inspection 1	0	0	0	0	0	5.18	3.19	7.18	1.64	8.73
goods returned	0	0	0	0	0	0	0	0	0	0
warehouse found	0	0	0	0	0	0	0	0	0	0
logistics planned	0	0	0	0	0	0	0	0	0	0
logistics paid	0	0	0	0	0	0	0	0	0	0
date inspection	0	0	0	0	0	86.9	57.18	116.63	34.11	139.7
date checked	0	0	0	0	0	10.52	5.55	15.49	1.69	19.35
thrown away	0	0	0	0	0	8.71	6.82	10.6	5.35	12.07

Total										
Lead Time						Work Time				
Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%		Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
0	0	0	0	0		0	0	0	0	0

Cost				
Mean	Lower 90%	Upper 90%	Lower 99%	Upper 99%
0	0	0	0	0

Comments:

I. Administration- employees, managers and Store employee's aren't used in this process, hence the utilization of 0.

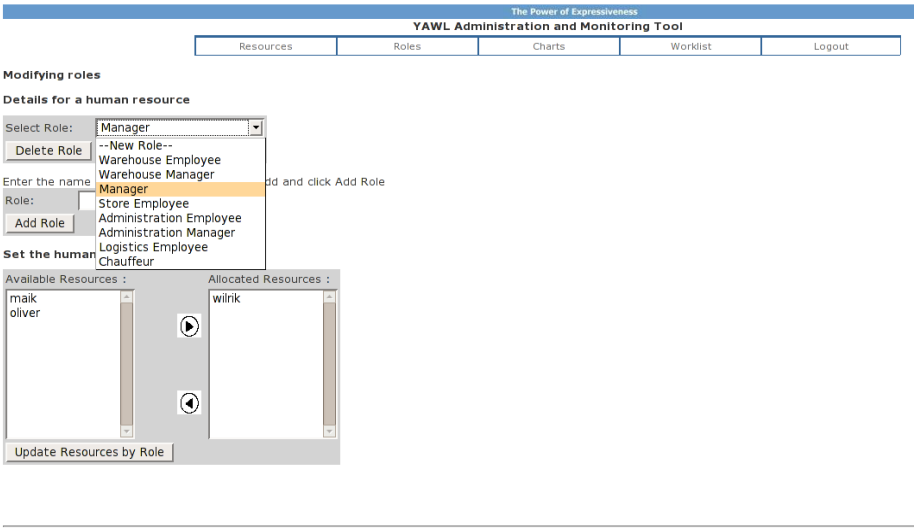
II. Warehouse employee's and manager's are optimally utilized hence the high utilization rate.

III. Searching a new warehouse can take a long time, because it's a manual time consuming process, hence the large time for it.

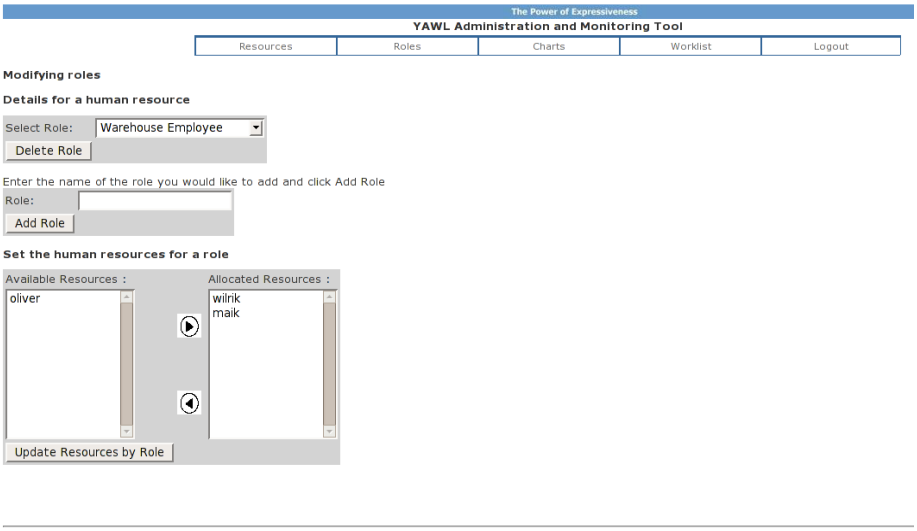
IV. There are too many chauffeurs available which explains the low utilization rate for 'chauffeur.

6 YAWL Models

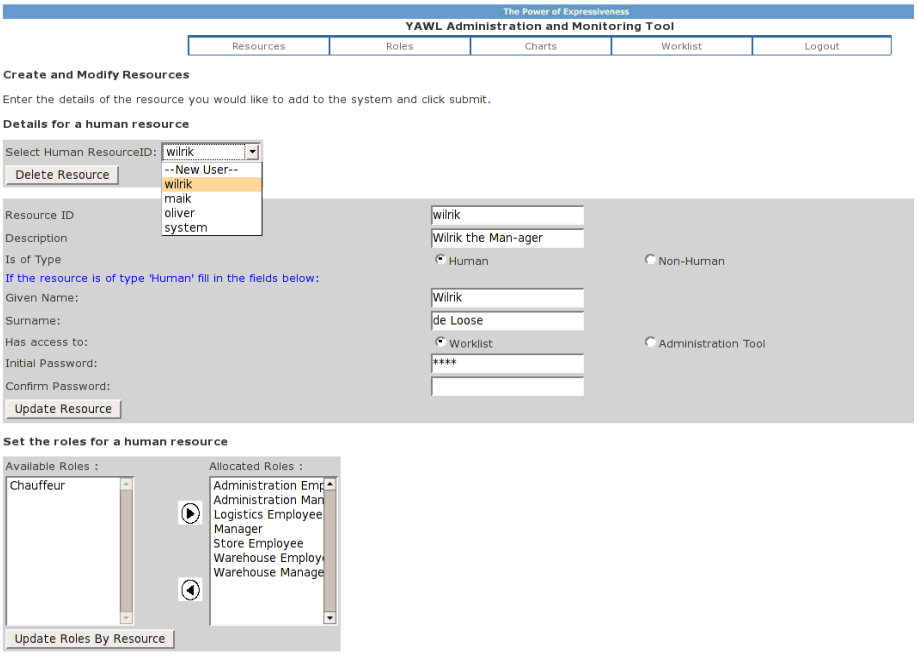
6.1 Organizational Model



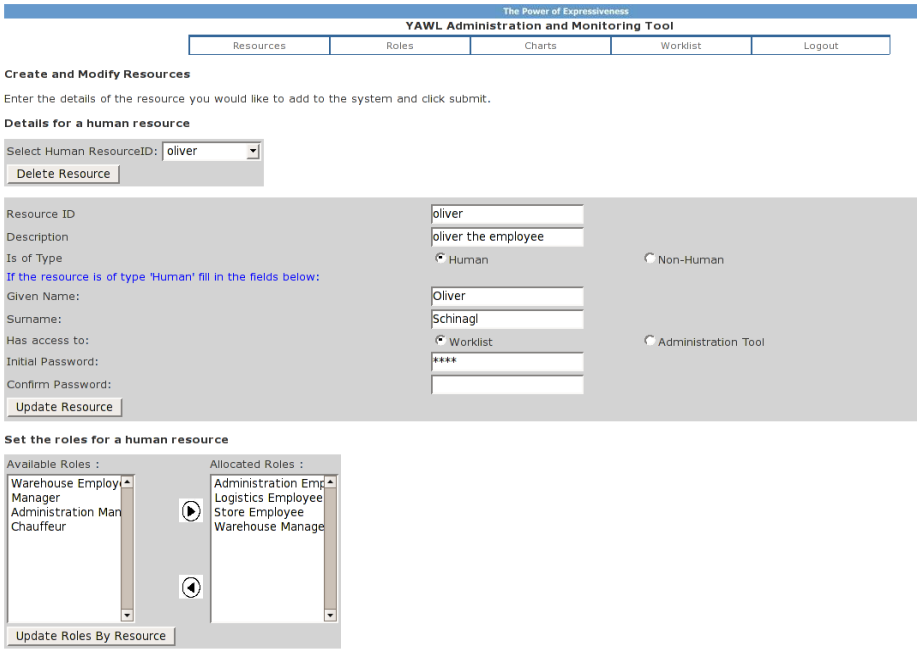
An overview of all available roles.



Both the Manager (wilrik) and a employee (maik) are Warehouse Employee's

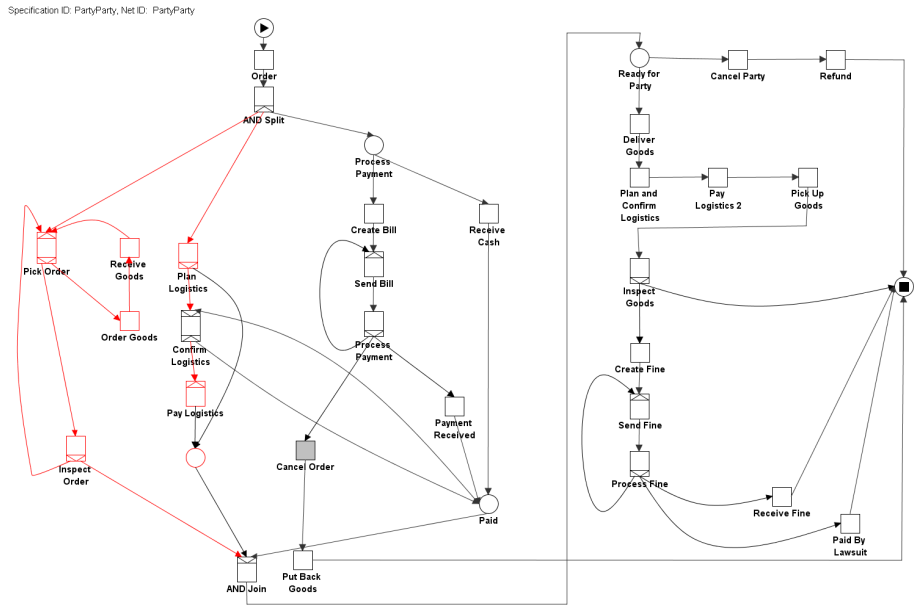


An overview of all available resources.



Emoployee 'Oliver' is an empolyee for the administraton, logistics and store departments, but a Manager for the Warehouse.

6.2 Workflow process PartyParty



6.2.1 Datatypes

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">

  <xs:complexType name="Order_specifications">
    <xs:sequence>
<xs:element name="ID" type="xs:long"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="Customer_specifications">
    <xs:sequence>
<xs:element name="ID" type="xs:long"/>
<xs:element name="Name" type="xs:string"/>
<xs:element name="Address" type="xs:string"/>
<xs:element name="Code" type="xs:string"/>
<xs:element name="City" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="Order_Pick_List">
    <xs:sequence>
<xs:element name="ID" type="xs:long"/>
<xs:element name="OrderID" type="xs:long"/>
<xs:element name="OrderComplete" type="OrderCompleteType"/>
<xs:element name="OrderInspection" type="OrderInspectionType"/>
    </xs:sequence>
  </xs:complexType>
```

```
  <xs:complexType name="Inspect_Goods_List">
    <xs:sequence>
<xs:element name="ID" type="xs:long"/>
<xs:element name="OrderID" type="xs:long"/>
<xs:element name="GoodsInspection" type="GoodsInspectionType"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="Fine">
    <xs:sequence>
<xs:element name="ID" type="xs:long"/>
<xs:element name="OrderID" type="xs:long"/>
<xs:element name="TimesSent" type="xs:long"/>
<xs:element name="FinePayed" type="xs:boolean"/>
<xs:element name="FineAmount" type="xs:decimal"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="Bill">
    <xs:sequence>
<xs:element name="ID" type="xs:long"/>
<xs:element name="TimesSent" type="xs:long"/>
<xs:element name="BillPayed" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="Logistics_plan">
    <xs:sequence>
<xs:element name="ID" type="xs:long"/>
<xs:element name="OrderID" type="xs:long"/>
<xs:element name="Transport" type="TransportType"/>
    </xs:sequence>
  </xs:complexType>

  <xs:simpleType name="OrderCompleteType">
<xs:restriction base="xs:string">
<xs:enumeration value="Order Complete"/>
<xs:enumeration value="Order not Complete"/>
</xs:restriction>
   </xs:simpleType>

  <xs:simpleType name="OrderInspectionType">
<xs:restriction base="xs:string">
<xs:enumeration value="Order Accepted"/>
<xs:enumeration value="Order Disapproved"/>
</xs:restriction>
   </xs:simpleType>

  <xs:simpleType name="GoodsInspectionType">
```

```
<xs:restriction base="xs:string">
<xs:enumeration value="Goods in good shape"/>
<xs:enumeration value="Goods Damaged"/>
</xs:restriction>
   </xs:simpleType>

  <xs:simpleType name="TransportType">
<xs:restriction base="xs:string">
<xs:enumeration value="Hire Truck"/>
<xs:enumeration value="Take own Van"/>
</xs:restriction>
   </xs:simpleType>
</xs:schema>
```

6.2.2 Design Constructs

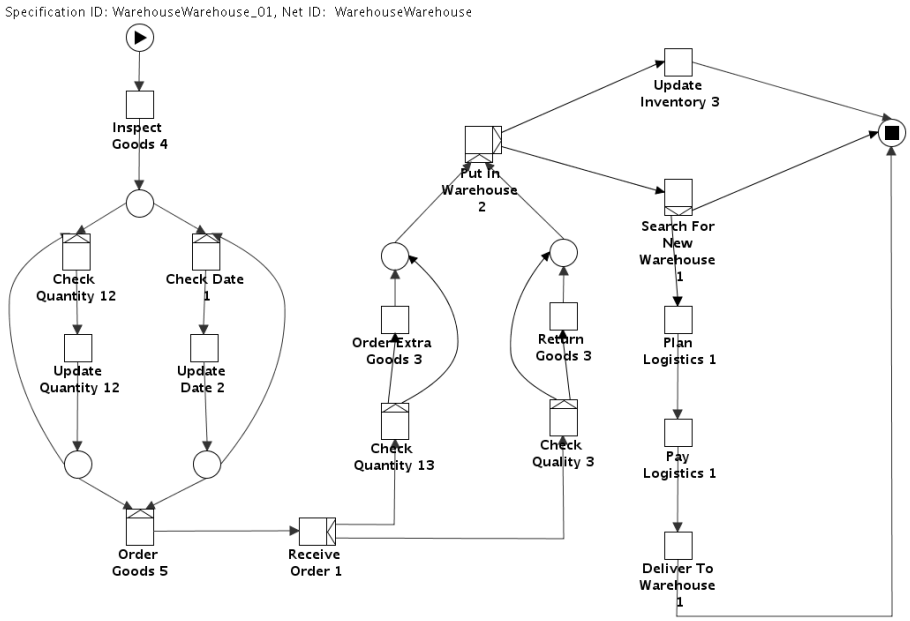
- Confirm logistics can only be executed after the order is paid.

  The order will be cancelled when the bill isn't paid after being sent three times.

- After if the fine is sent more that one time, the amount will be increased with 5%.

- The company will get paid by lawsuit when the fine isn't paid and sent three times.

6.3 Workflow process WarehouseWarehouse



6.3.1 Datatypes

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
<xs:complexType name="WarehouseInspect">
<xs:sequence>
<xs:element name="WarehouseEmployeeID" type="xs:long" />
<xs:element name="InspectionDate" type="xs:date" />
<xs:element name="WarehouseID" type="xs:long" />
</xs:sequence>
</xs:complexType>
<xs:complexType name="item">
<xs:sequence>
<xs:element name="ProductID" type="xs:long" />
<xs:element name="ProductName" type="xs:string" />
<xs:element name="MaxQuantity" type="xs:long" />
<xs:element name="MinQuantity" type="xs:long" />
<xs:element name="CurQuantity" type="xs:long" />
<xs:element name="PurchasePrice" type="xs:double" />
<xs:element name="RentalPrice" type="xs:double" />
</xs:sequence>
</xs:complexType>
<xs:complexType name="productList">
<xs:sequence>
<xs:element maxOccurs="12" minOccurs="10" name="Item" type="item" />
</xs:sequence>
</xs:complexType>
<xs:complexType name="InspectQuantityList">
```

```
<xs:sequence>
<xs:element maxOccurs="1" minOccurs="1" name="ProductList" type="productList" />
</xs:sequence>
</xs:complexType>
<xs:simpleType name="GoodsQualityCheckType">
<xs:restriction base="xs:string">
<xs:enumeration value="Goods in good shape." />
<xs:enumeration value="Goods not so good shape." />
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="GoodsQuantityCheckType">
<xs:restriction base="xs:string">
<xs:enumeration value="Quantity in good shape." />
<xs:enumeration value="Quantity not so good shape." />
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="SpaceCheckType">
<xs:restriction base="xs:string">
<xs:enumeration value="Space no Good." />
<xs:enumeration value="Space Good." />
</xs:restriction>
</xs:simpleType>
</xs:schema>
```

6.3.2 Design Constructs

- Products have several properties, these properties together form an item. Items are part of a productlist. Several Product Lists are possible.

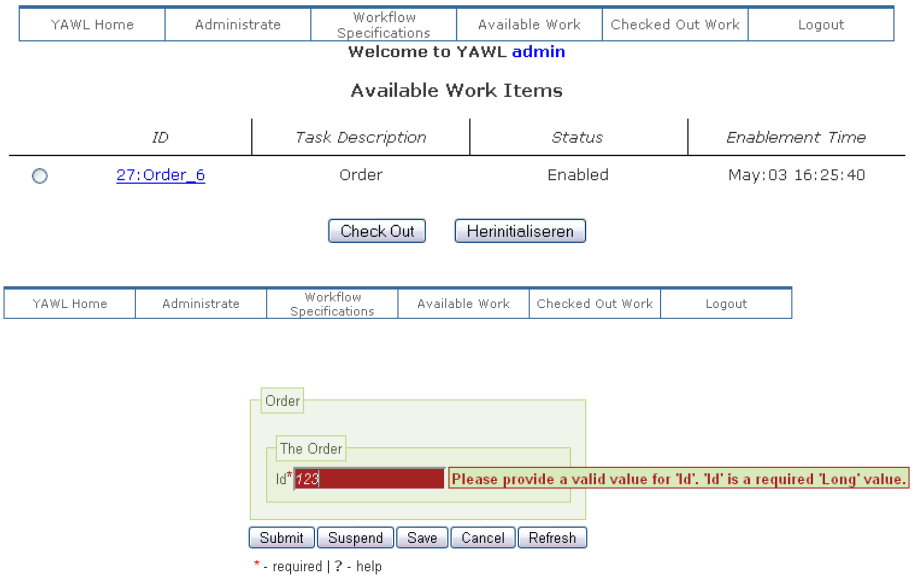
7 Scenarios

7.1 Workflow process PartyParty

7.1.1 Scenario 1

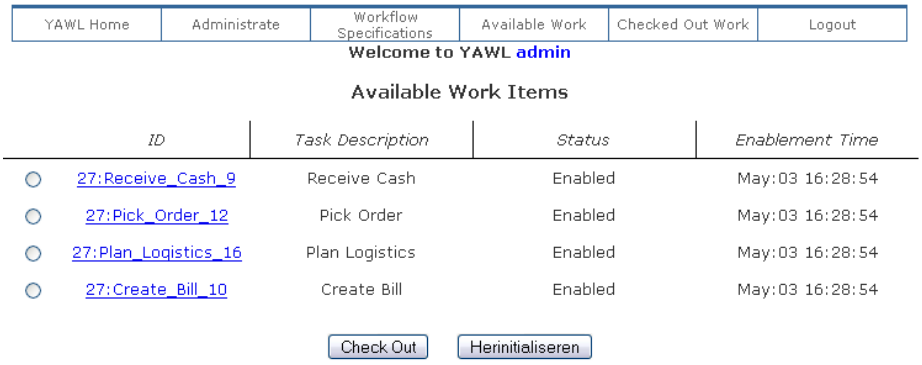
The costumer orders a party. He pays with cash. The company can deliver the goods with their own van. It seems that the order is picked good, but by the inspection it turns out that theres something missing. By the re-picking turns out that the company must order some extra goods. By the returning of the goods it turns out that there are goods damaged, and the costumer refuses to pay the fine.

Step 1:

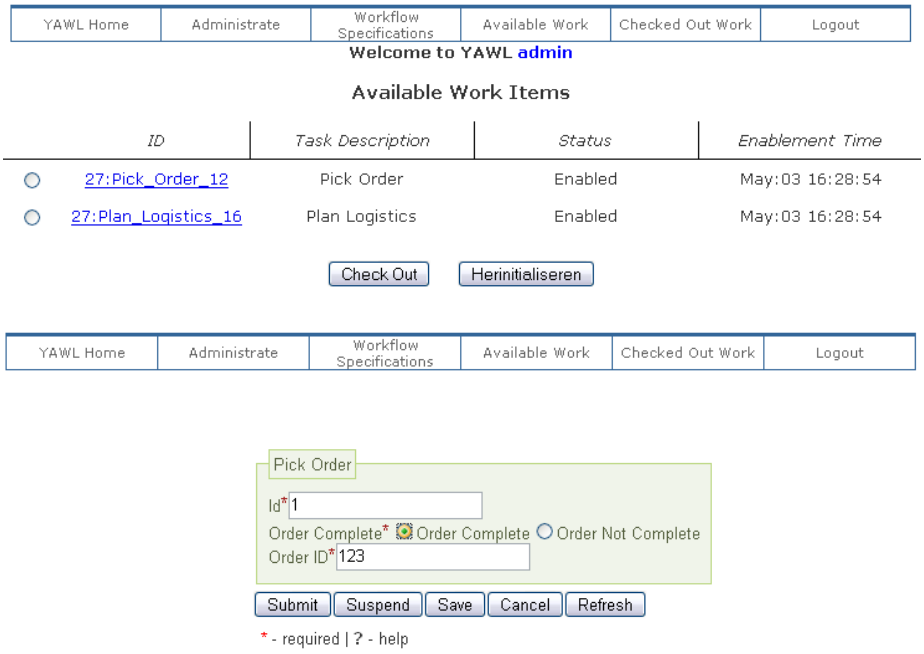


Step 2:

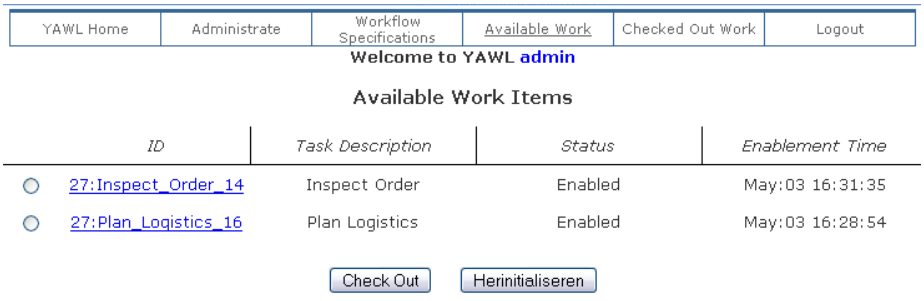
Step 3: Receive Cash

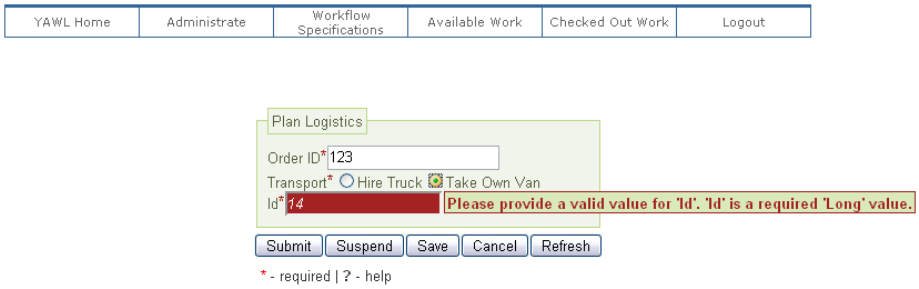

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
27:Receive_Cash_9
Receive Cash
Enabled
May:03 16:28:54
27:Pick_Order_12
Pick Order
Enabled
May:03 16:28:54
27:Plan_Logistics_16
Plan Logistics
Enabled
May:03 16:28:54
27:Create_Bill_10
Create Bill
Enabled
May:03 16:28:54
Check Out
Herinitialiseren

Step 4:

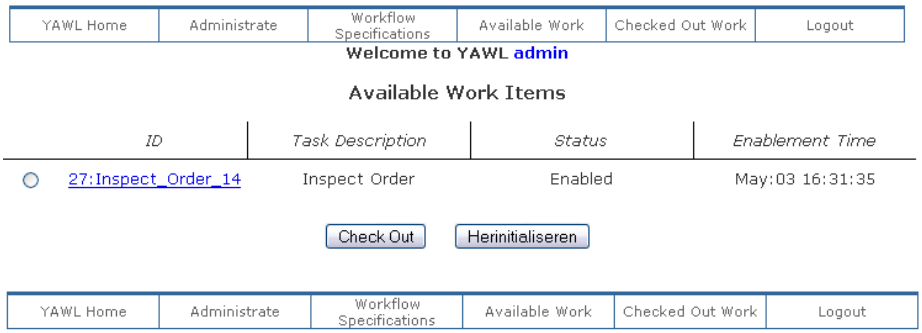

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
27:Pick_Order_12
Pick Order
Enabled
May:03 16:28:54
27:Plan_Logistics_16
Plan Logistics
Enabled
May:03 16:28:54
Check Out
Herinitialiseren
YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Pick Order
Id* 1
Order Complete* Order Complete Order Not Complete
Order ID* 123
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

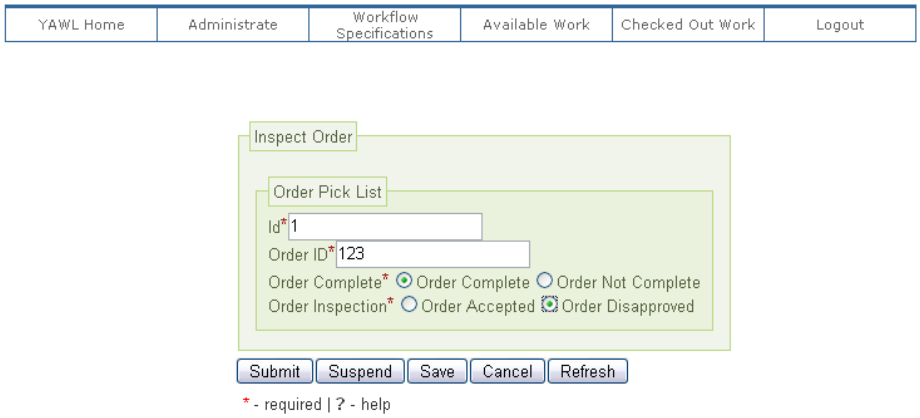
Step 5:


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
27:Inspect_Order_14
Inspect Order
Enabled
May:03 16:31:35
27:Plan_Logistics_16
Plan Logistics
Enabled
May:03 16:28:54
Check Out
Herinitialiseren


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Plan Logistics
Order ID* 123
Transport* Hire Truck Take Own Van
Id* 14
Please provide a valid value for 'Id'. 'Id' is a required 'Long' value.
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

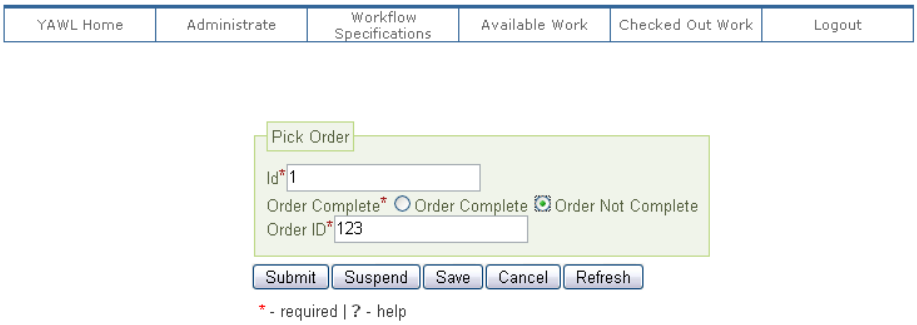
Step 6:


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
27:Inspect_Order_14
Inspect Order
Enabled
May:03 16:31:35
Check Out
Herinitialiseren


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Inspect Order
Order Pick List
Id* 1
Order ID* 123
Order Complete* Order Complete Order Not Complete
Order Inspection* Order Accepted Order Disapproved
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

Step 7:

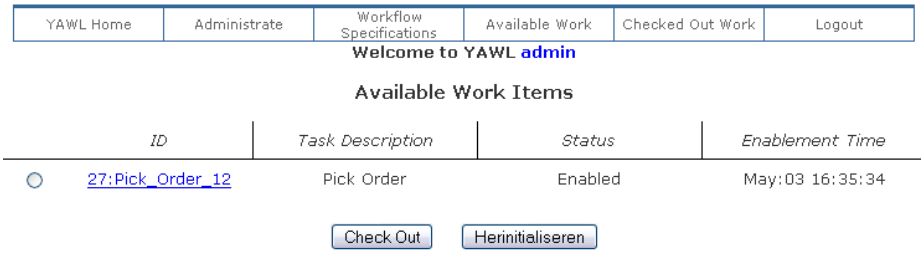

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
27:Pick_Order_12
Pick Order
Enabled
May:03 16:33:20
Check Out
Herinitialiseren

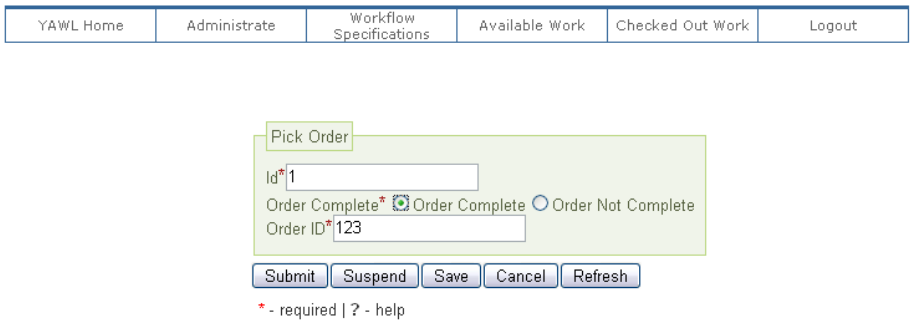


Step 8:

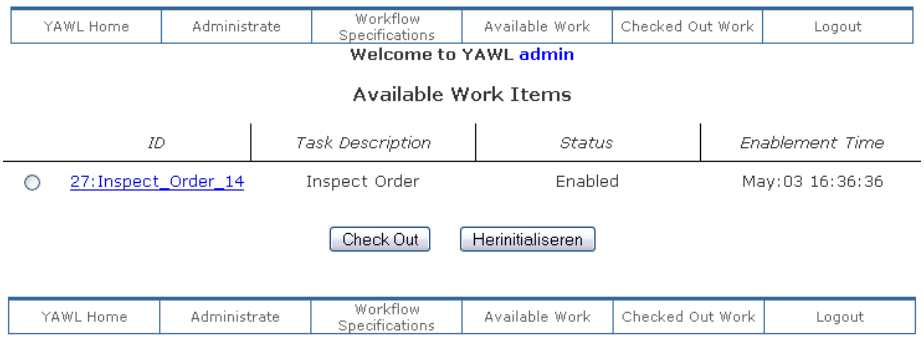
Step 9:

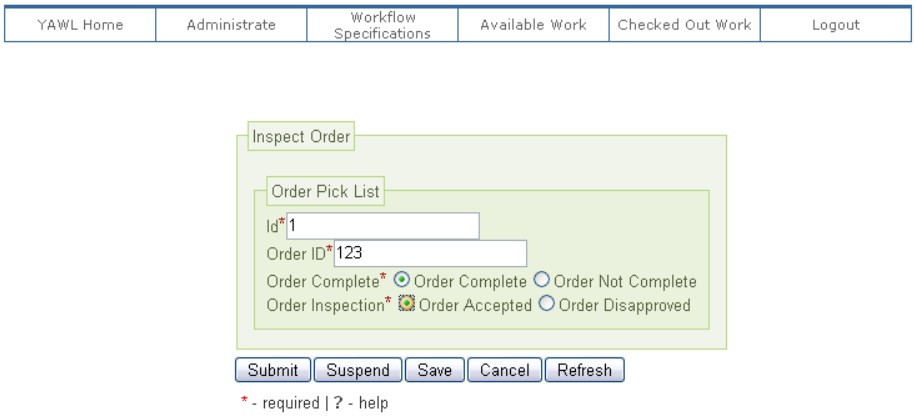
Step 10:





Step 11:

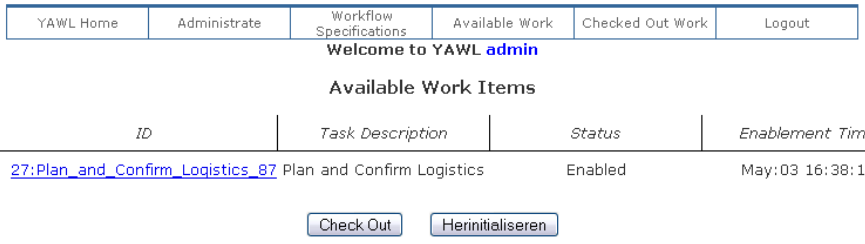




Step 12:

Step 13 Deliver Goods:

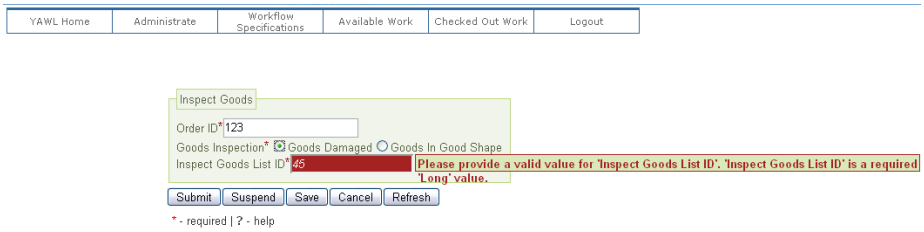
Step 14:



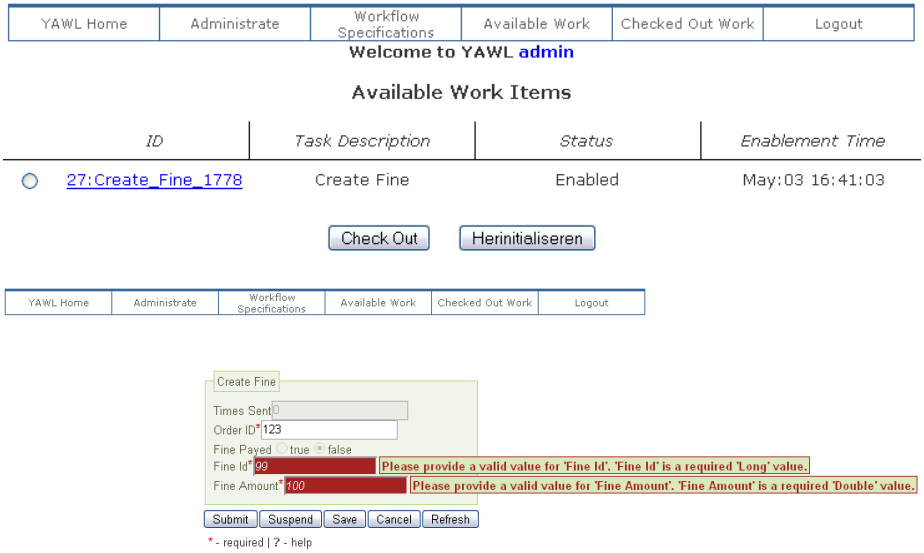
Step 15:

Step 16:

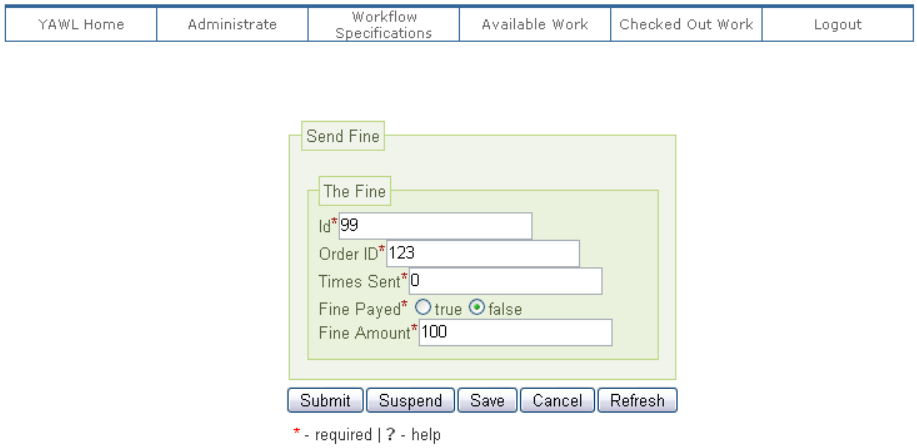
Step 17:



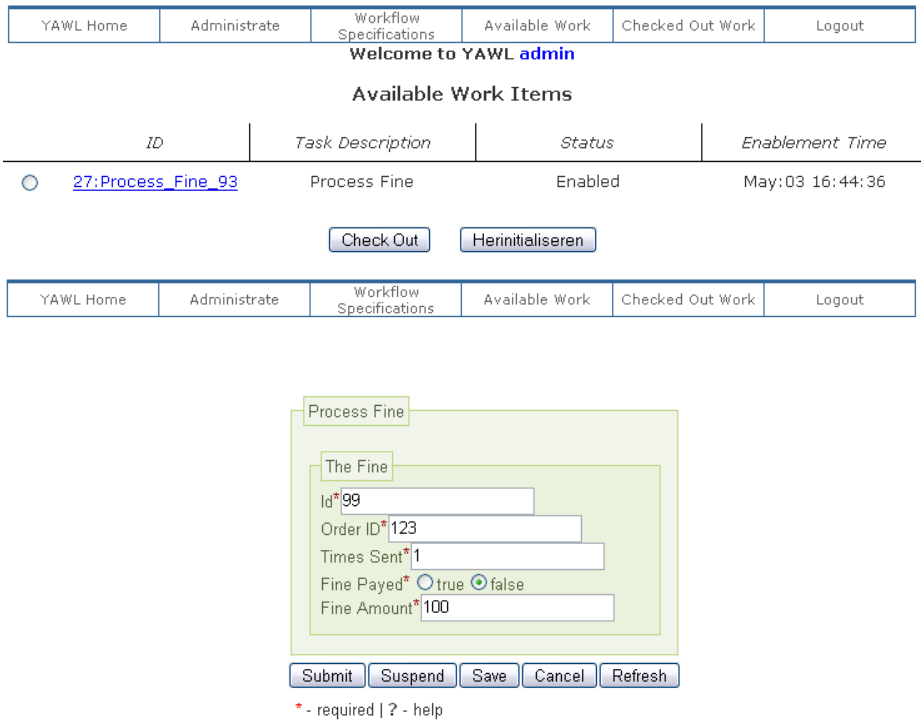
Step 18:



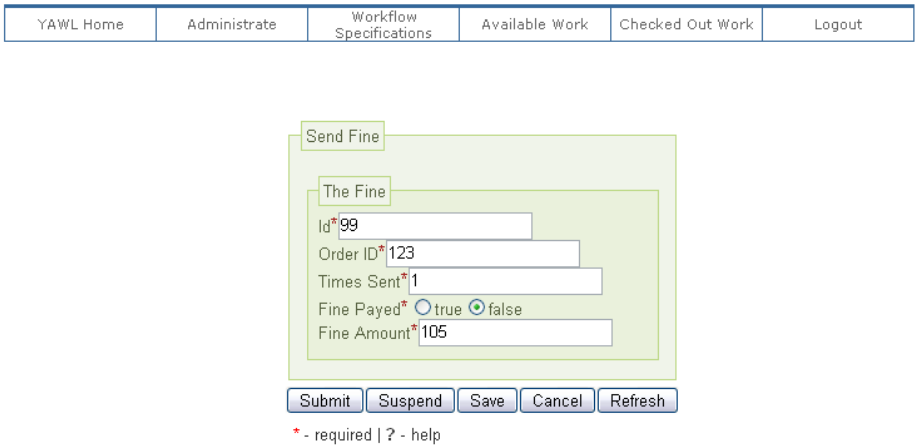
Step 19: After sending the fine, the Times Sent will be automatically increased.



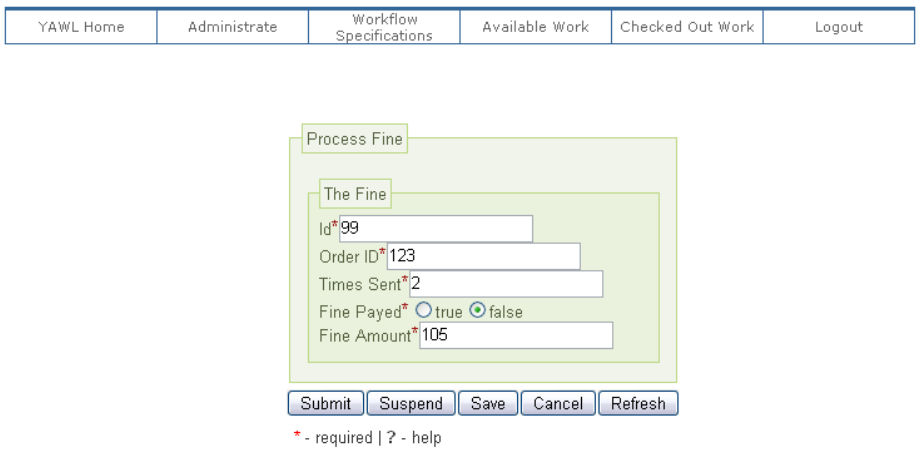
Step 20: Here can be seen that the Times Sent is increased. If the Fine isnt payed, this process will increase the amount automatically with 5%.



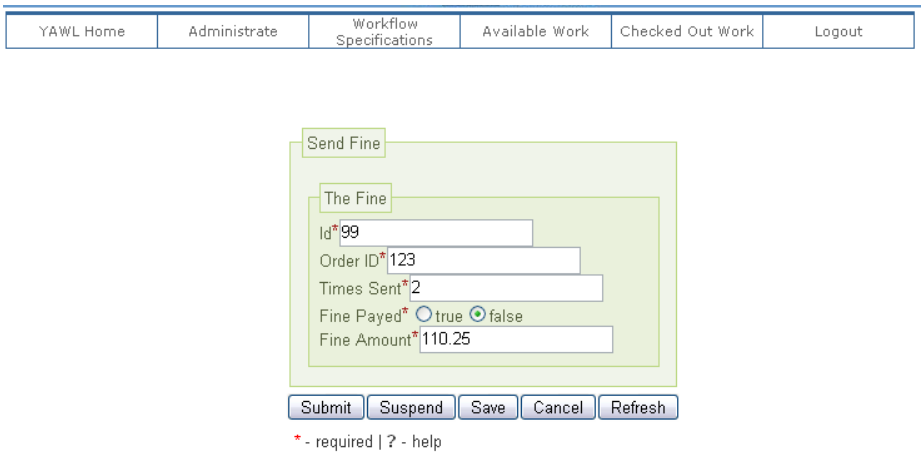
Step 21: Here can be seen that the amount is 5% increased



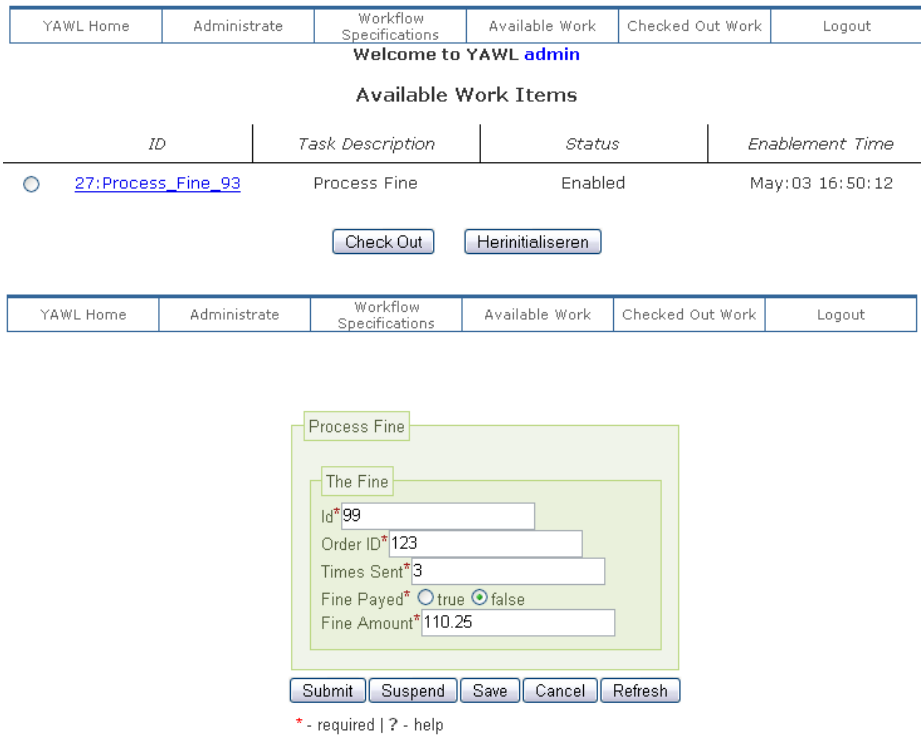
Step 22:



Step 23:



Step 24:



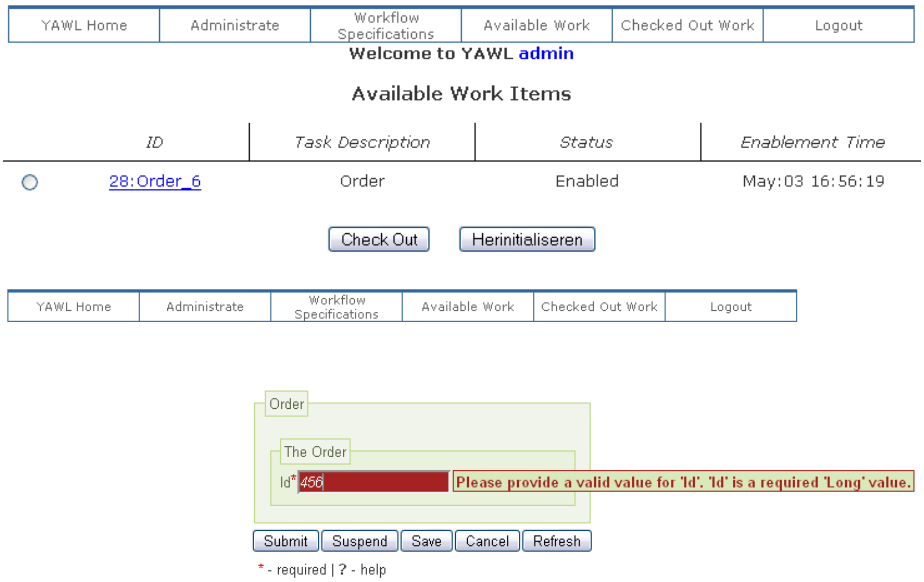
Step 25: The fine is sent three times and isnt paid, so the company will be get paid by lawsuit.

Step 26: The Workflow has ended.

7.1.2 Scenario 2

The costumer orders a party. He pays with a bill. The company can't deliver the goods with their own van, so they must hire a truck. After making the order, the party will be cancelled.

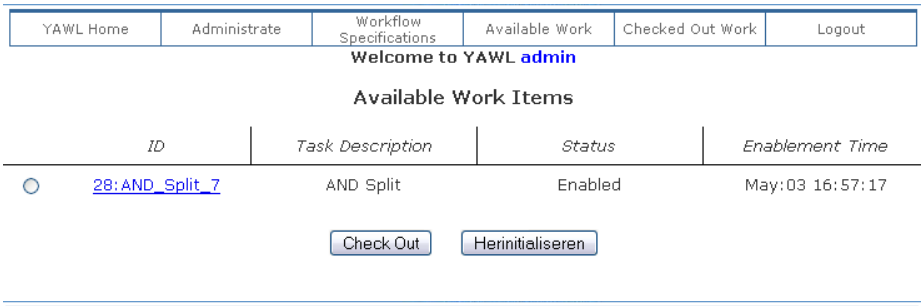
Step 1:

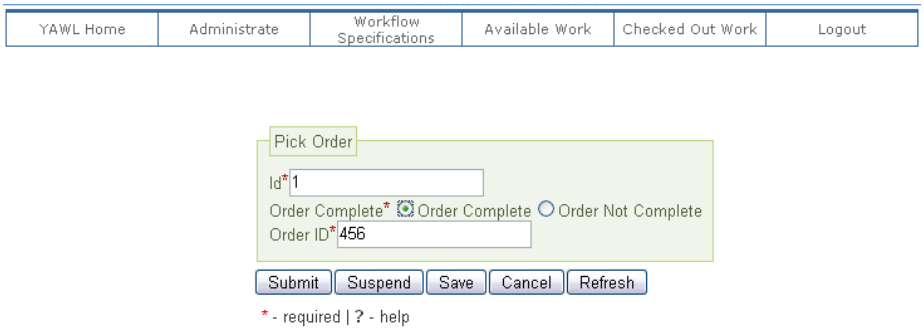


Step 2:

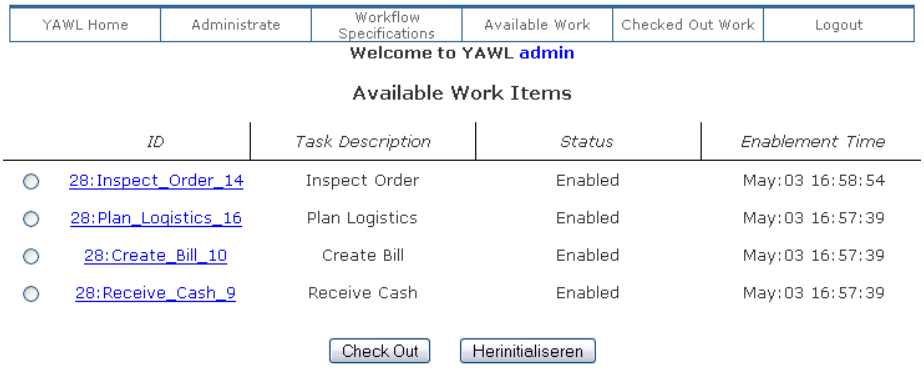

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
28:AND_Split_7
AND Split
Enabled
May:03 16:57:17
Check Out
Herinitialiseren

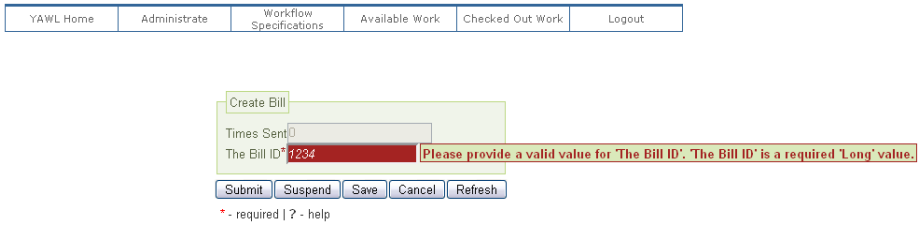
Step 3:


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
28:AND_Split_7
AND Split
Enabled
May:03 16:57:17
Check Out
Herinitialiseren


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Pick Order
Id* 1
Order Complete* Order Complete Order Not Complete
Order ID* 456
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

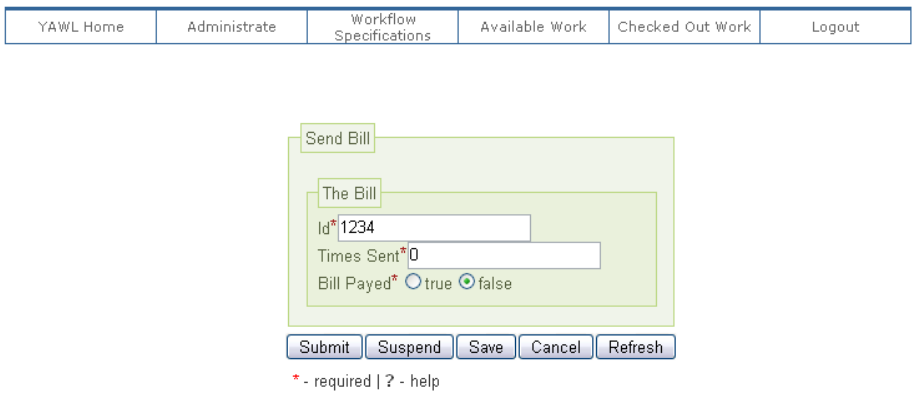
Step 4:


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
28:Inspect_Order_14
Inspect Order
Enabled
May:03 16:58:54
28:Plan_Logistics_16
Plan Logistics
Enabled
May:03 16:57:39
28:Create_Bill_10
Create Bill
Enabled
May:03 16:57:39
28:Receive_Cash_9
Receive Cash
Enabled
May:03 16:57:39
Check Out
Herinitialiseren


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Create Bill
Times Sent 0
The Bill ID* 1234
Please provide a valid value for 'The Bill ID'. 'The Bill ID' is a required 'Long' value.
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

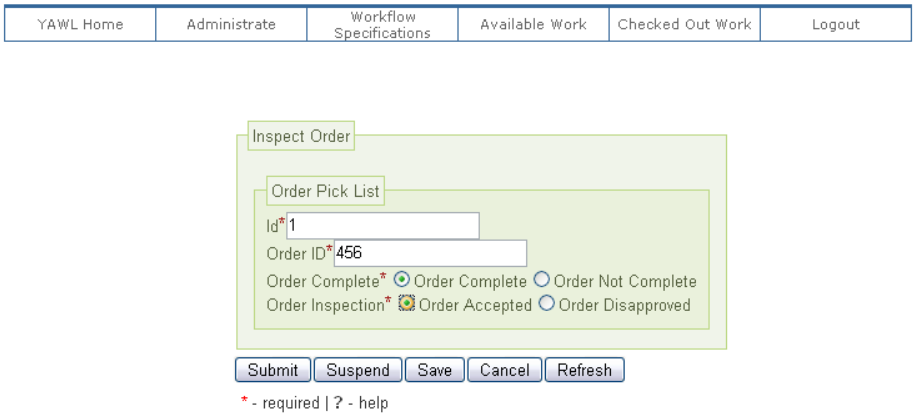
Step 5:


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
28:Inspect_Order_14
Inspect Order
Enabled
May:03 16:58:54
28:Plan_Logistics_16
Plan Logistics
Enabled
May:03 16:57:39
28:Send_Bill_24
Send Bill
Enabled
May:03 16:59:59
Check Out
Herinitialiseren

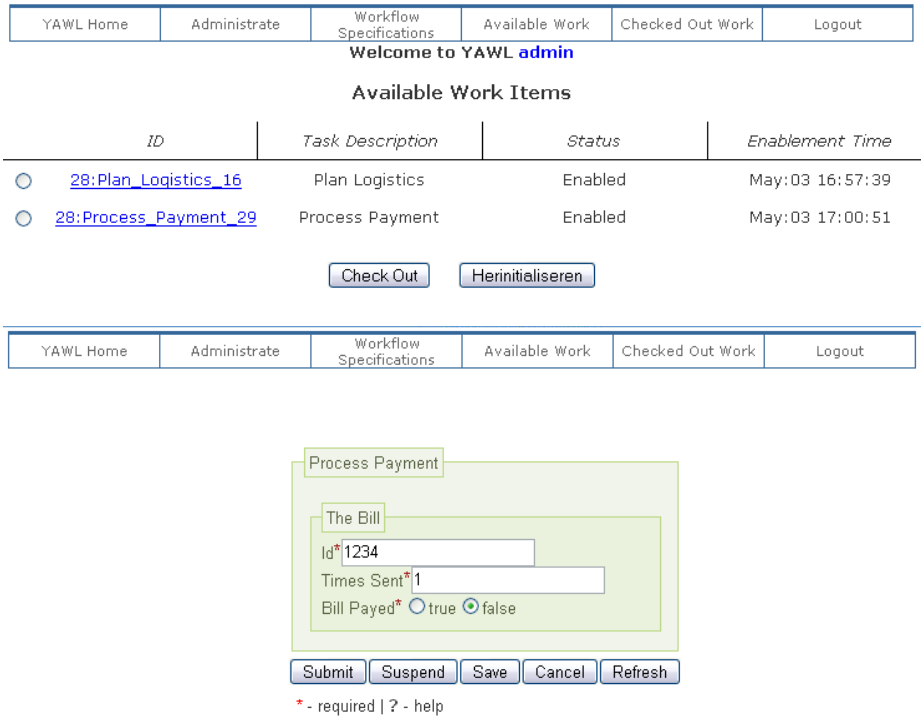

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Send Bill
The Bill
Id* 1234
Times Sent* 0
Bill Payed* true false
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

Step 6:

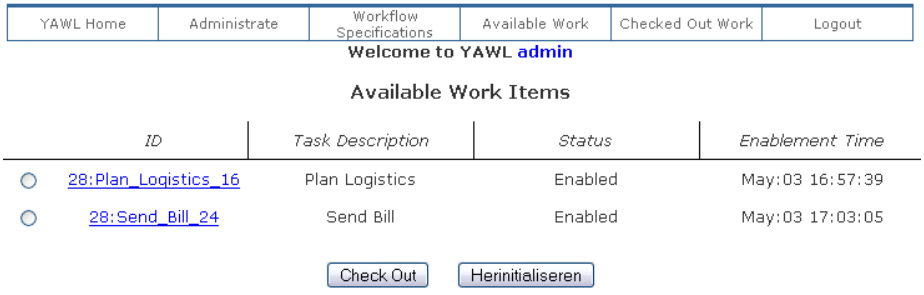

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
28:Inspect_Order_14
Inspect Order
Enabled
May:03 16:58:54
28:Plan_Logistics_16
Plan Logistics
Enabled
May:03 16:57:39
28:Process_Payment_29
Process Payment
Enabled
May:03 17:00:51
Check Out
Herinitialiseren

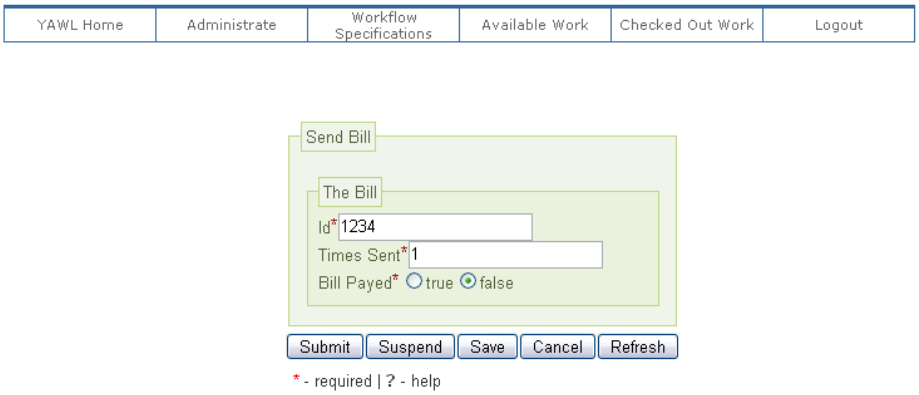


Step 7: Process Payment, the bill isnt yet paid.

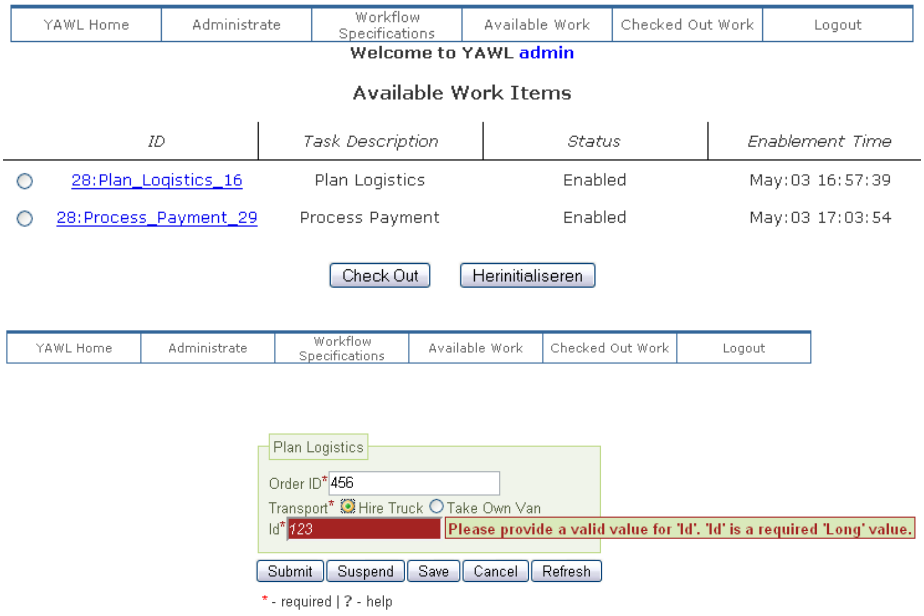


Step 8:

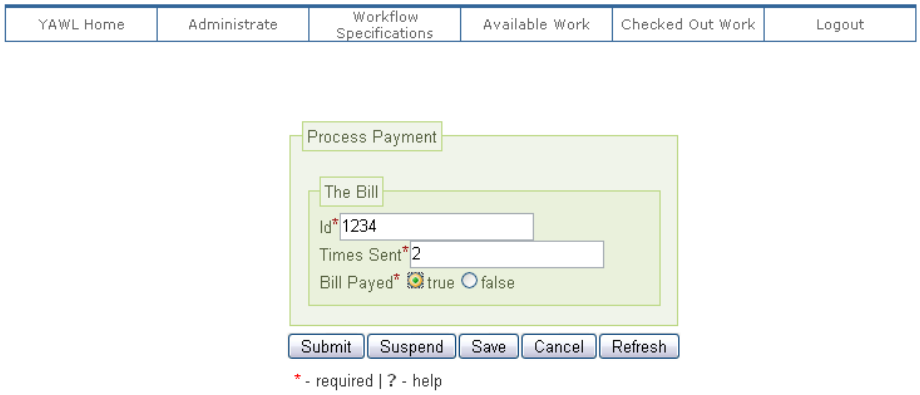




Step 9: Plan logistics: A truck will be hired, after this process the company cant confirm the logistics because the bill isn't paid yet.



Step 10: Process Payment, the bill is payed.



Step 11: The company can receive the payment.

Step 12: Now the company can confirm the logistics.

Step 13:

Step 14:

Step 15:

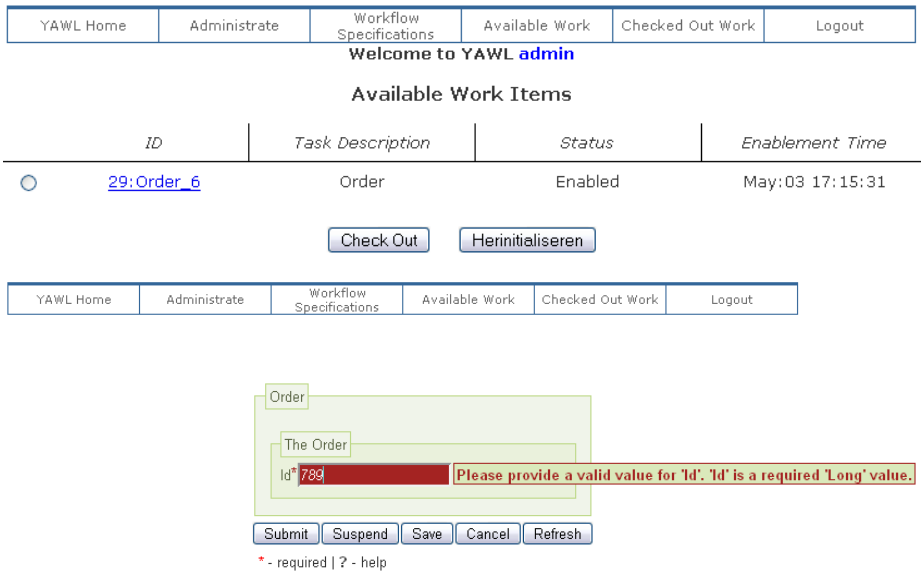
Step 16:

Step 17: The WOrkflow has ended.

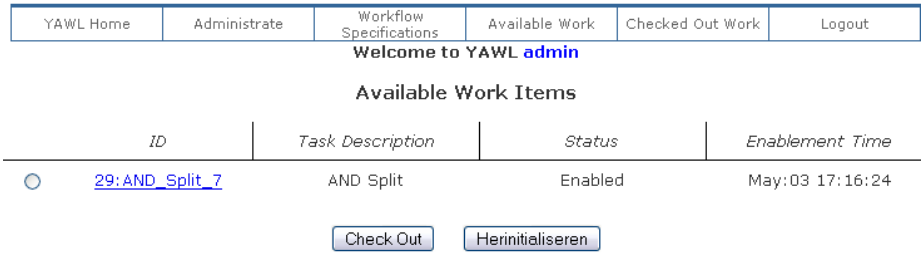
7.1.3 Scenario 3

The costumer orders a party. He wants to pays it with a bill, but he doesnt. After sending the bill three times the order will be cancelled.

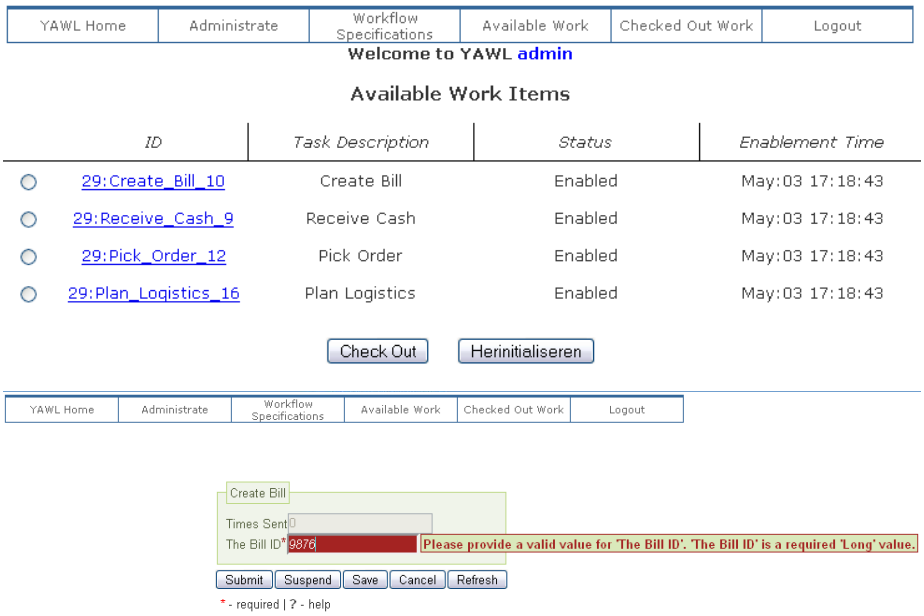
Step 1:


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
29:Order_6
Order
Enabled
May:03 17:15:31
Check Out
Herinitialiseren
YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Order
The Order
Id* 789
Please provide a valid value for 'Id'. 'Id' is a required 'Long' value.
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

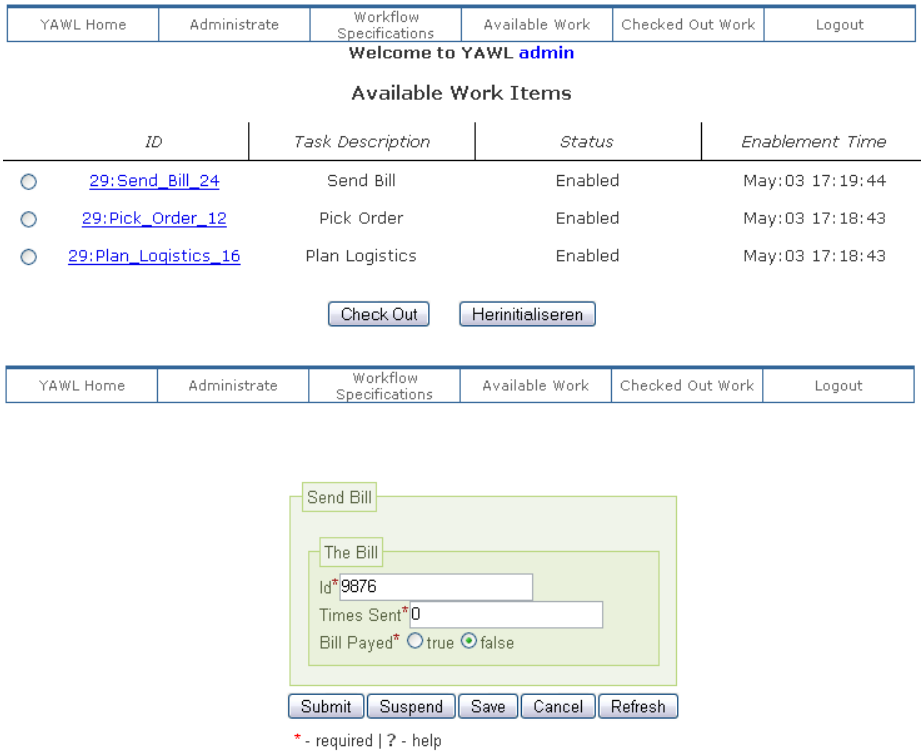
Step 2:


YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
29:AND_Split_7
AND Split
Enabled
May:03 17:16:24
Check Out
Herinitialiseren

Step 3:

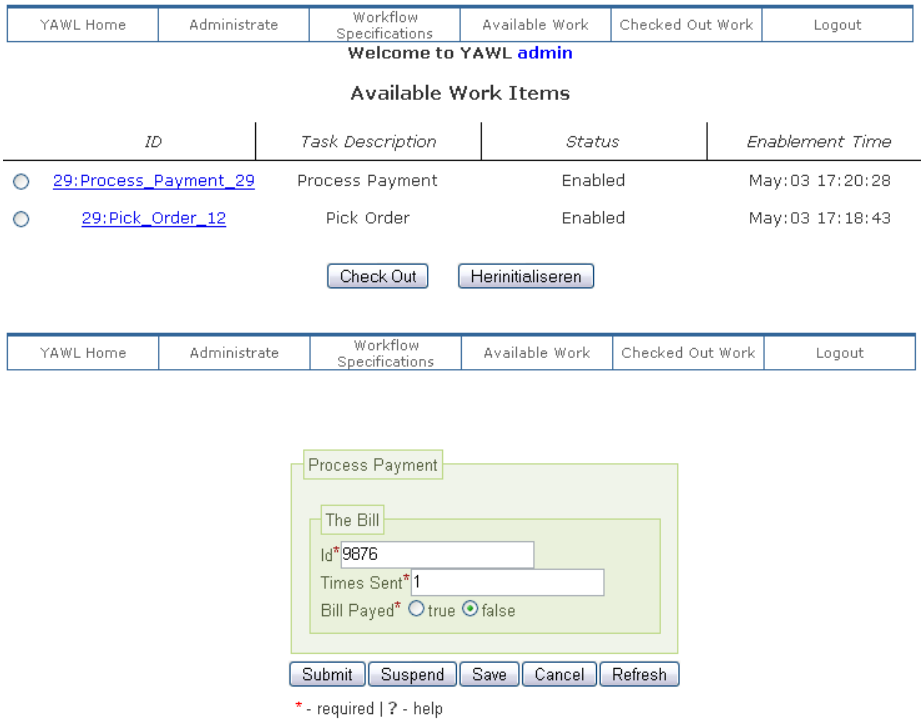

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
29:Create_Bill_10
Create Bill
Enabled
May:03 17:18:43
29:Receive_Cash_9
Receive Cash
Enabled
May:03 17:18:43
29:Pick_Order_12
Pick Order
Enabled
May:03 17:18:43
29:Plan_Logistics_16
Plan Logistics
Enabled
May:03 17:18:43
Check Out
Herinitialiseren
YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Create Bill
Times Sent 0
The Bill ID* 9876
Please provide a valid value for 'The Bill ID'. 'The Bill ID' is a required 'Long' value.
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

Step 4: Send Bill: Times Sent will be automatically increased.

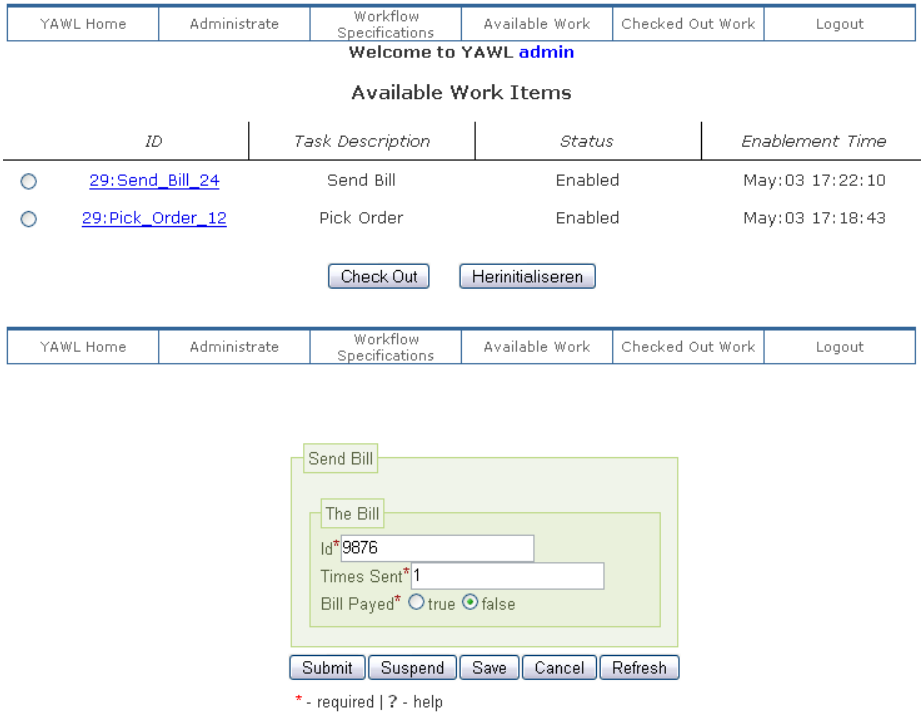


Step 5:

Step 6:

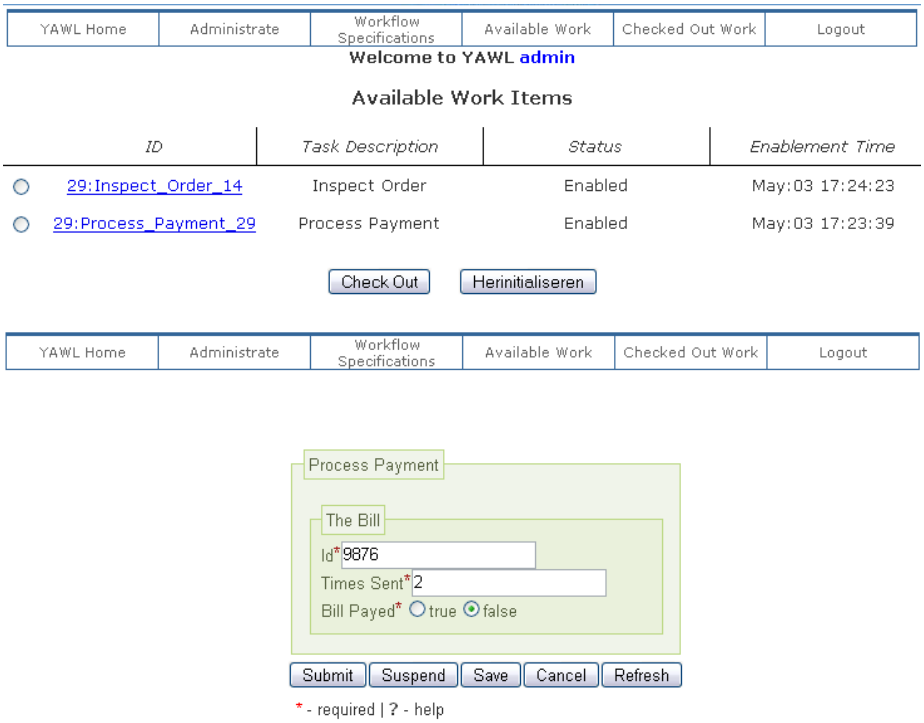

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
29:Process_Payment_29
Process Payment
Enabled
May:03 17:20:28
29:Pick_Order_12
Pick Order
Enabled
May:03 17:18:43
Check Out
Herinitialiseren
YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Process Payment
The Bill
Id* 9876
Times Sent* 1
Bill Payed* true false
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

Step 7:

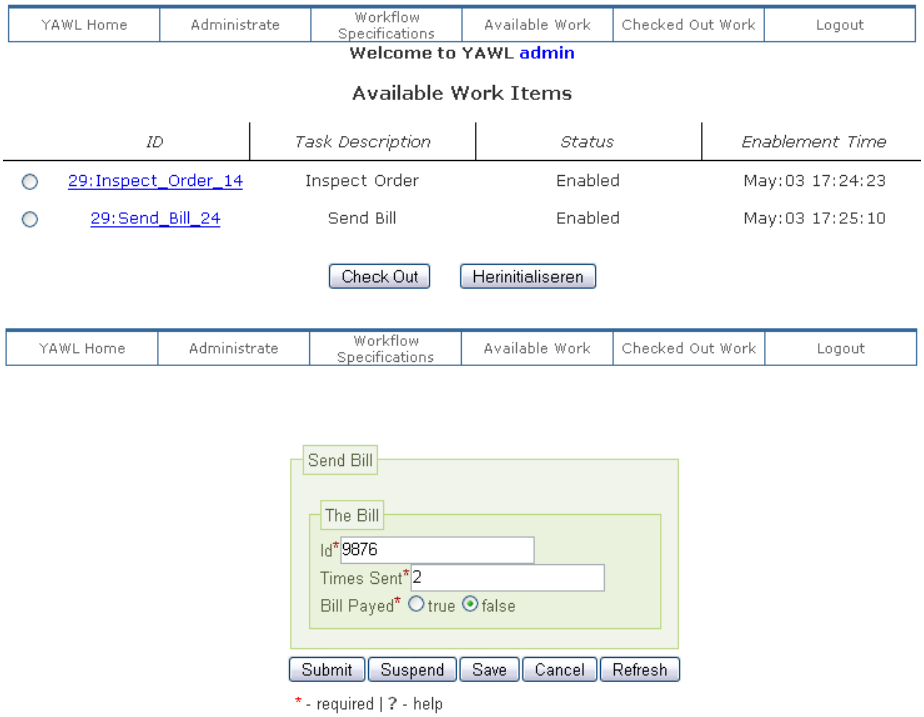

YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Welcome to YAWL admin
Available Work Items
ID
Task Description
Status
Enablement Time
29:Send_Bill_24
Send Bill
Enabled
May:03 17:22:10
29:Pick_Order_12
Pick Order
Enabled
May:03 17:18:43
Check Out
Herinitialiseren
YAWL Home
Administrate
Workflow Specifications
Available Work
Checked Out Work
Logout
Send Bill
The Bill
Id* 9876
Times Sent* 1
Bill Payed* true false
Submit
Suspend
Save
Cancel
Refresh
* - required | ? - help

Step 8:

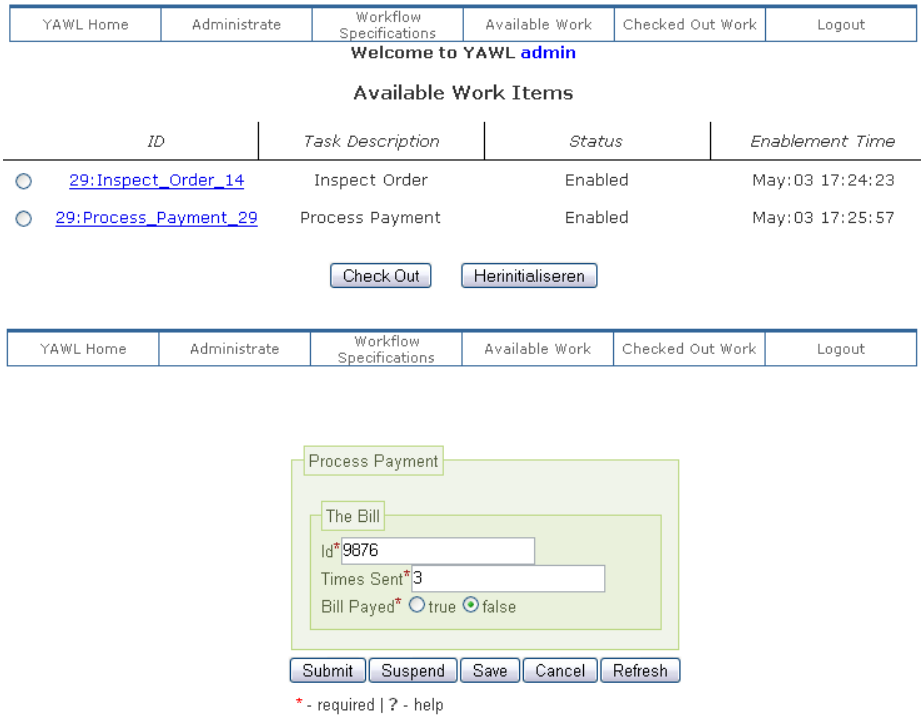
Step 9:



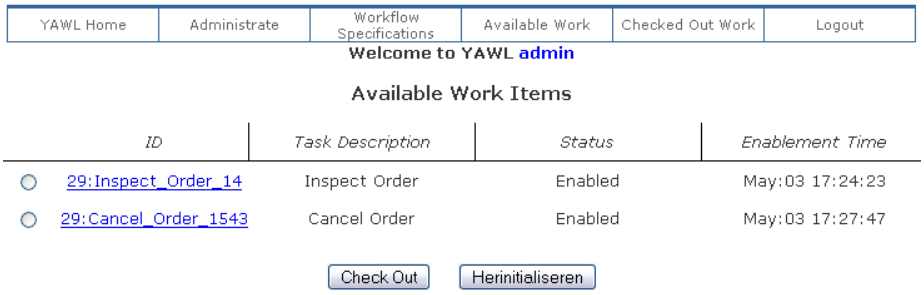
Step 10:



Step 11: The bill isnt paid and sent three times, so after the process payment the order will be cancelled.



Step 12:



Step 13:

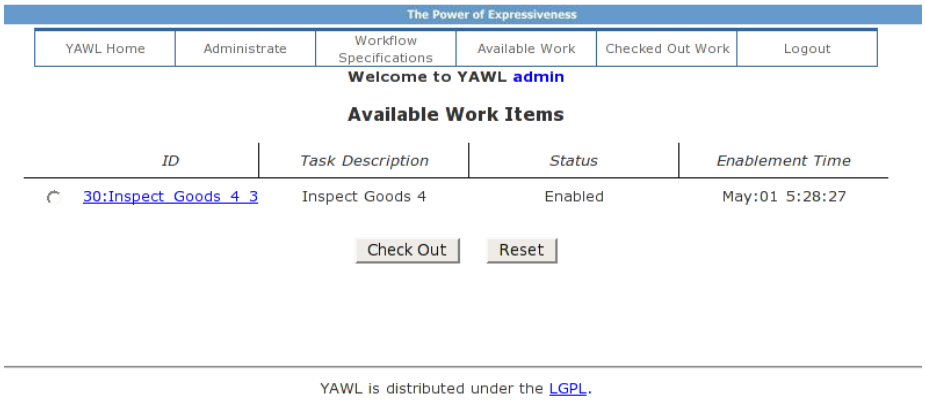
Step 14: The Workflow has ended.

7.2 Workflow process PartyParty

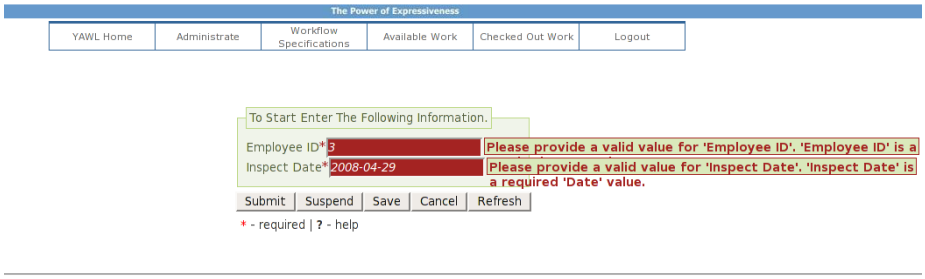
7.2.1 Scenario 1

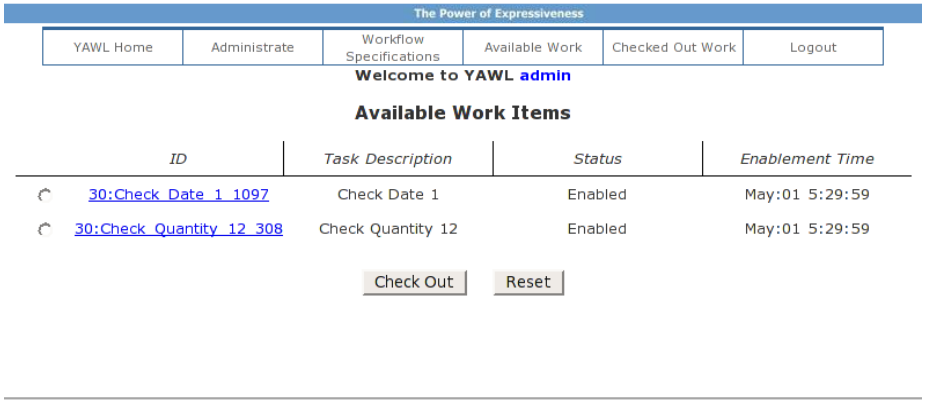
A warehouse employee performs his routine by inspecting the Date of products, discarding expired producs and ordering new goods. He then processes a received order which didn't pass the quality inspection and therefore got sent back. The amount received did match the order however. Since the goods got sent back, there was obviously enough place for the goods.

Step 1:

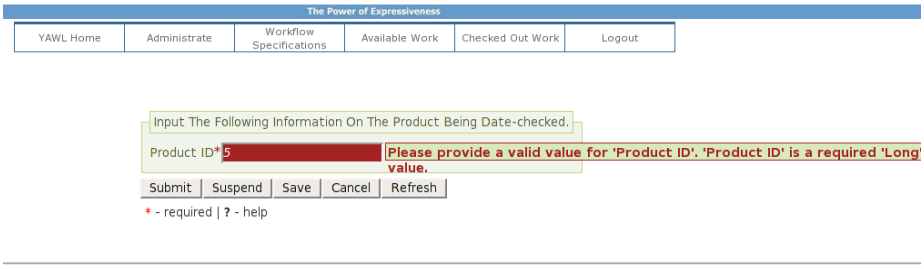


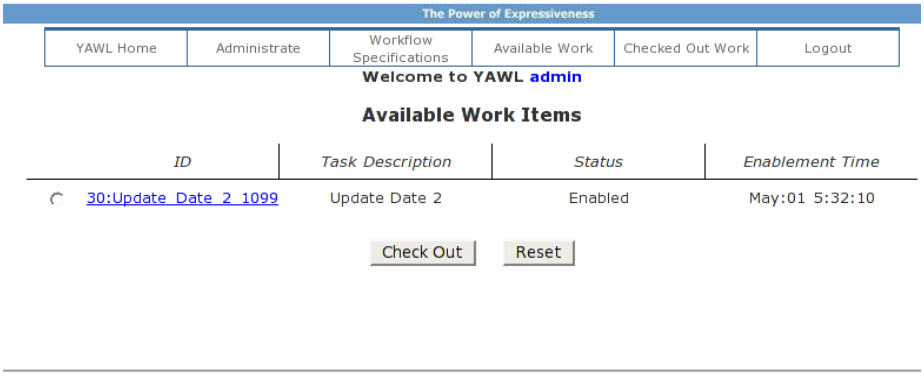
Step 2: Register the Employee's information and the date of Inspection.



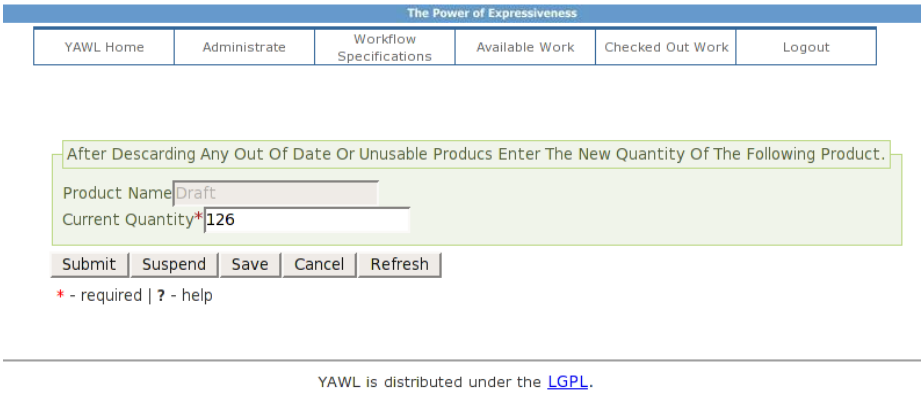


Step 3: Choose a product to process.

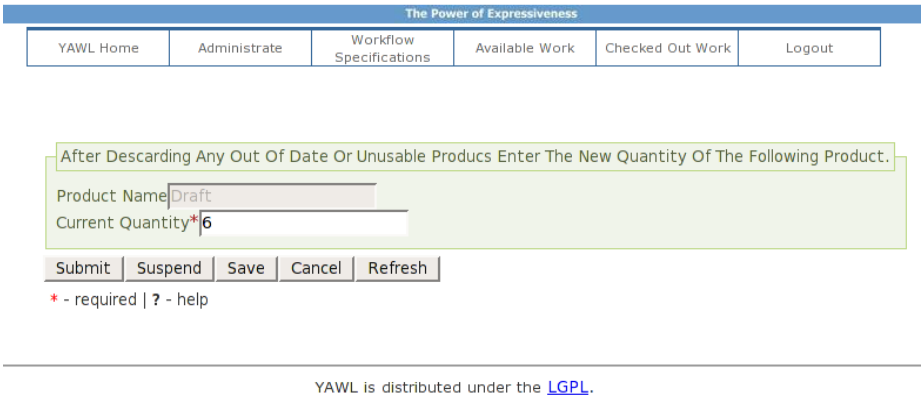




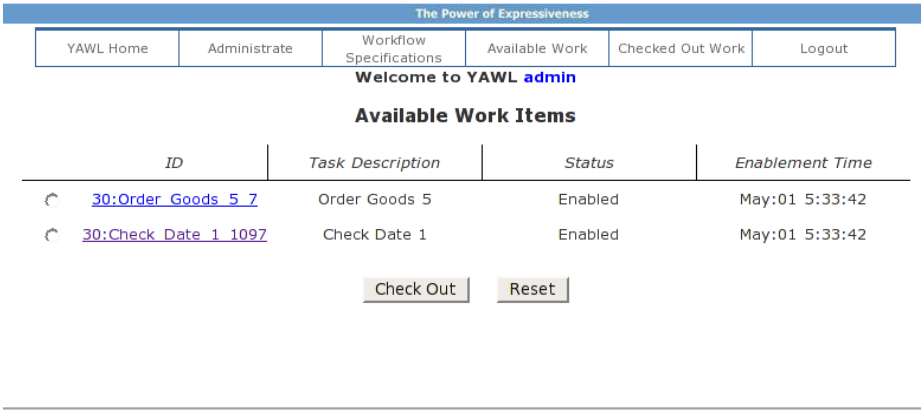
Step 4: Review the items currently in the system.



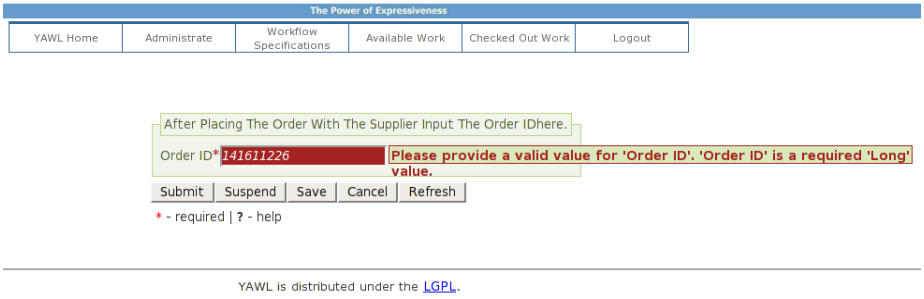
Step 5: And re-adjust the Quanity currently in the warehouse after discarding unusable products.



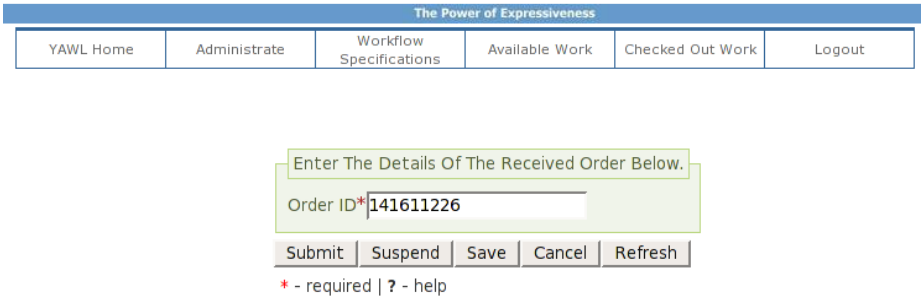
Step 6: When completing the Inspection new goods can be ordered.

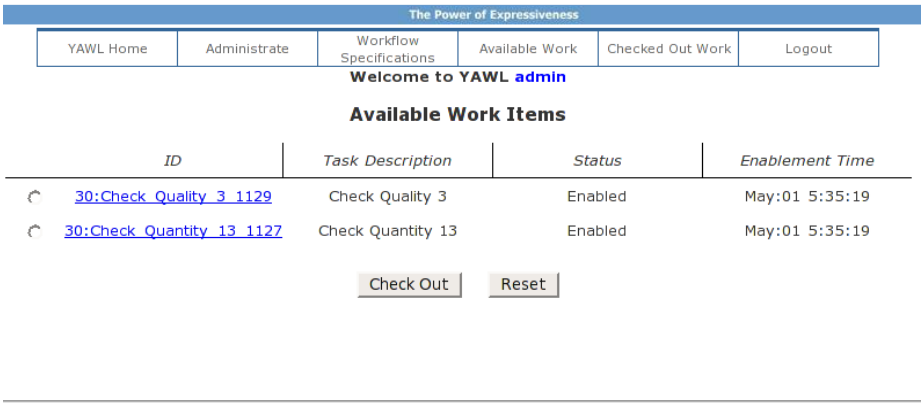


Step 7: After placing the order, record the ID for reference in the system.

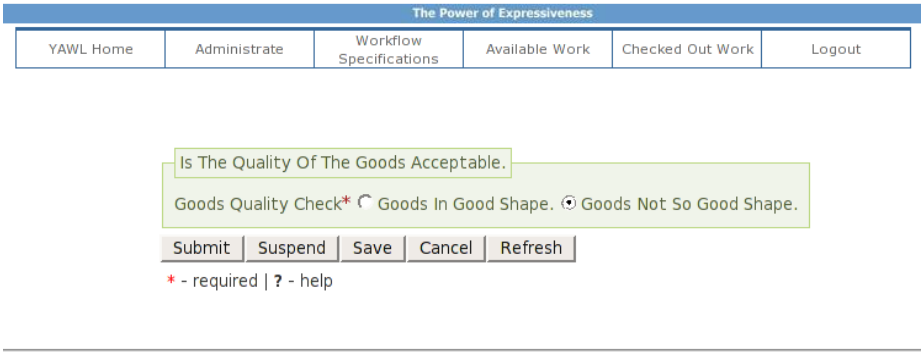


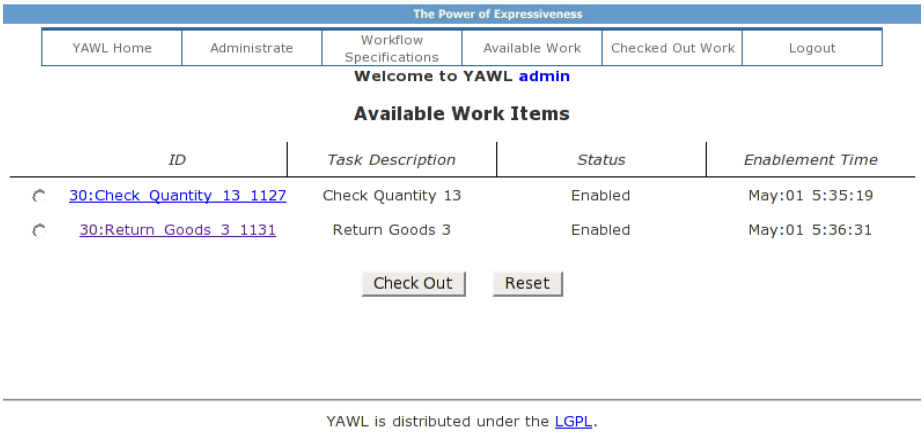
Step 8: Verify the Order ID in the system with the received Order.





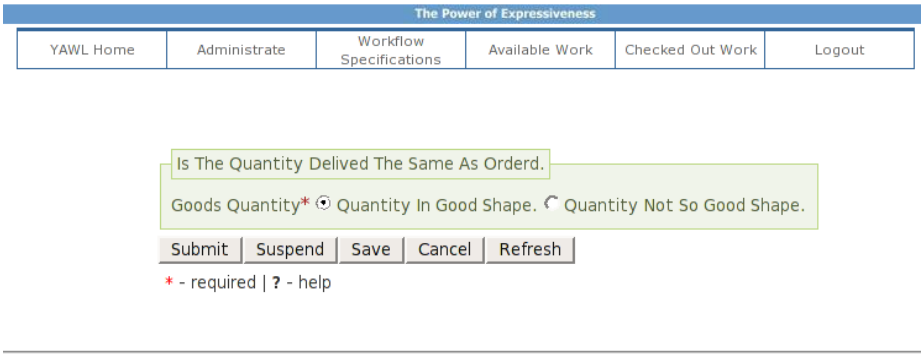
Step 9: The received goods where in an unacceptable shape, they will be returned.

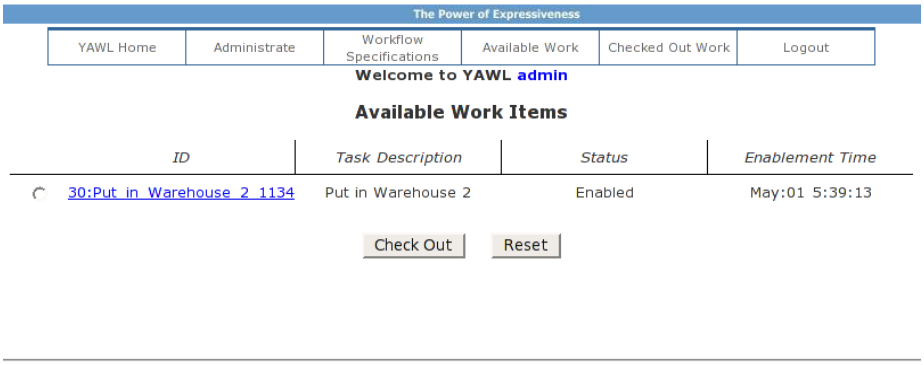




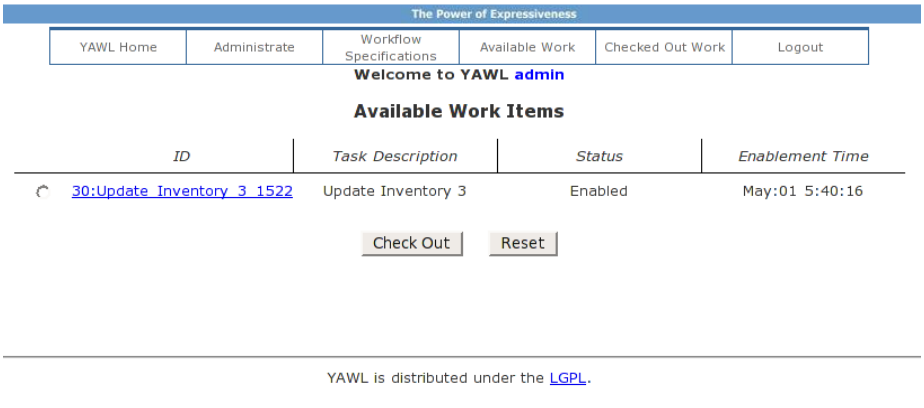
Step 10: Record the Return ID for reference in the system.

Step 11: The quantity is as ordered.

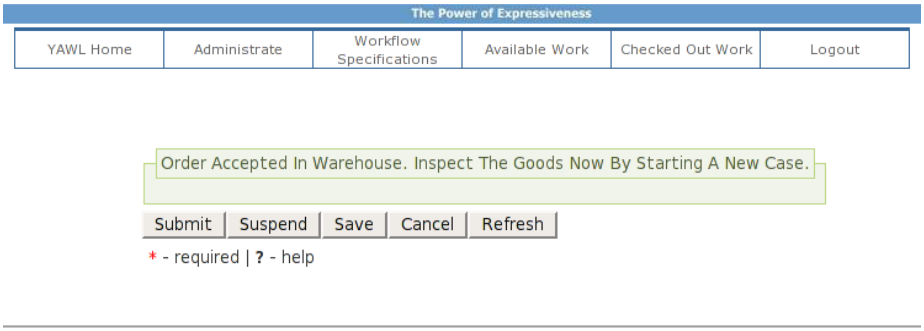




Step 12: There is enough space in the warehouse to receive the goods in.



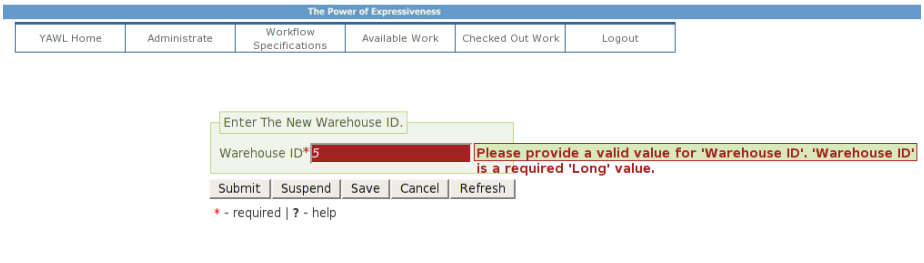
Step 13: Job Completed.

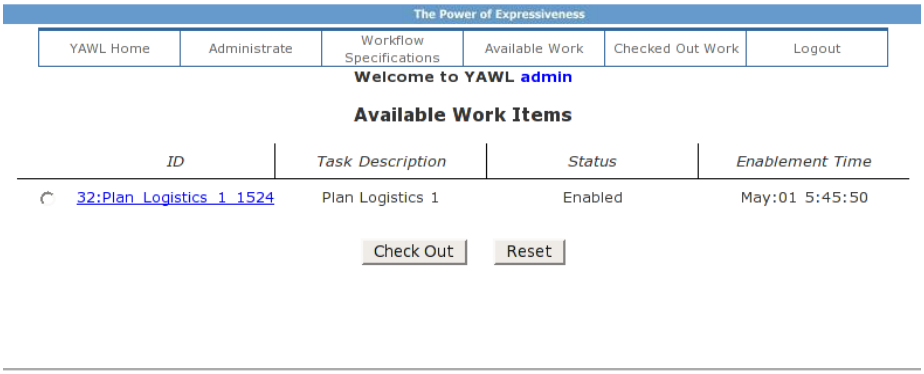


7.2.2 Scenario 2

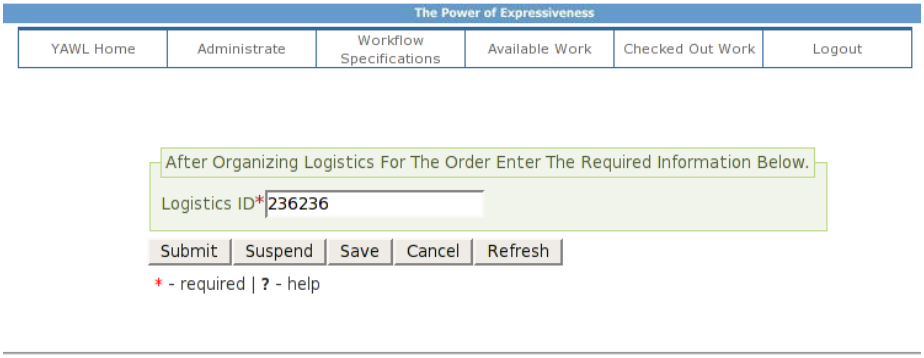
This scenario is variation on the previous one, it's exactly the same except that there was no space in the warehouse, which is where this scenario picks up uppon.
Step 13: There is not enough space in the warehouse for the received goods.

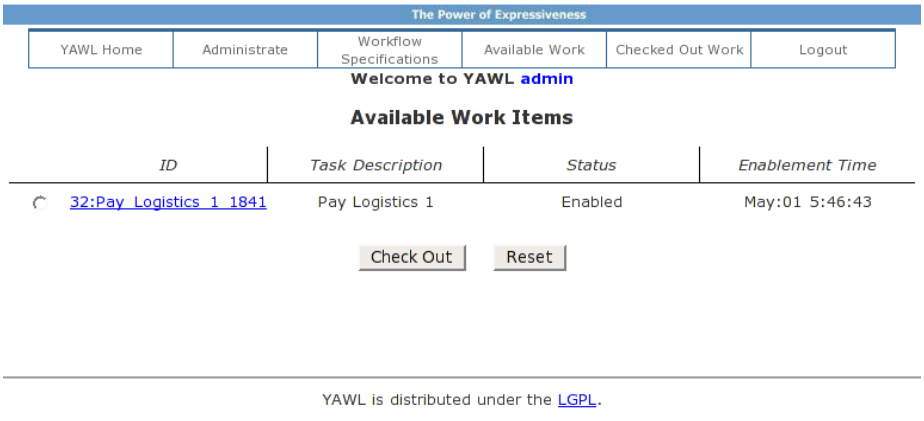
Step 14: Luckly, Warehouse 5 had room for the order.



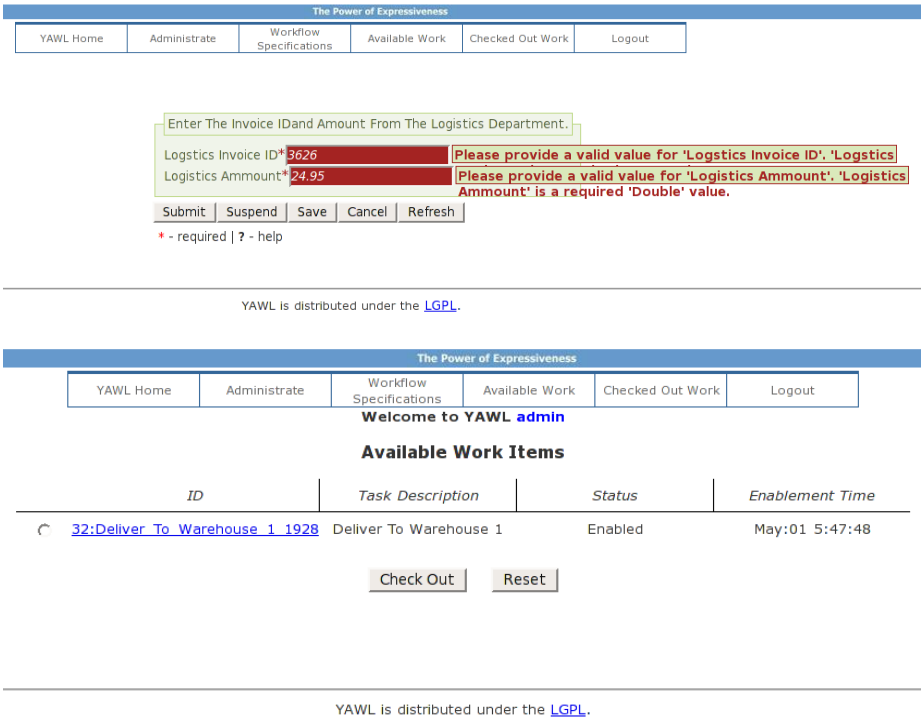


Step 15: After organizing logistics the Logistics ID is recorded for reference.

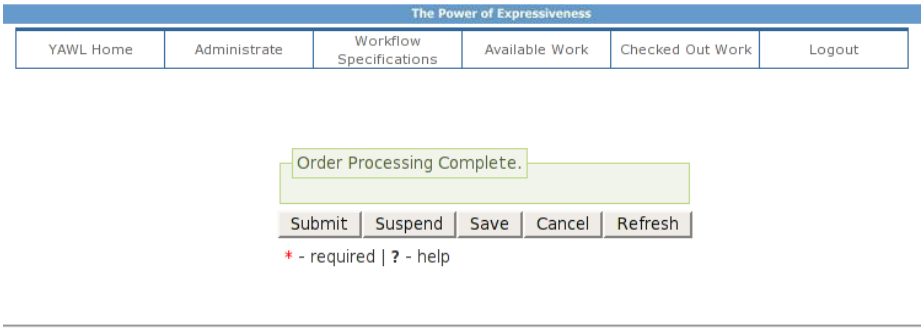




Step 16: Record the logistics Invoice ID and the payed amount for reference.

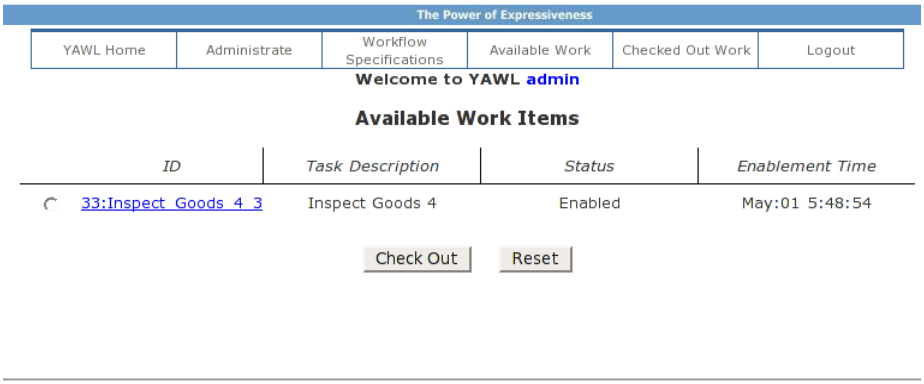


Step 17: Goods successfully deliverd at a different Warehouse.

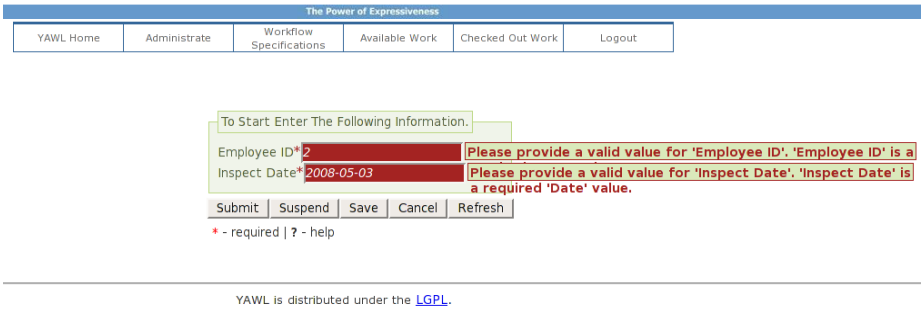


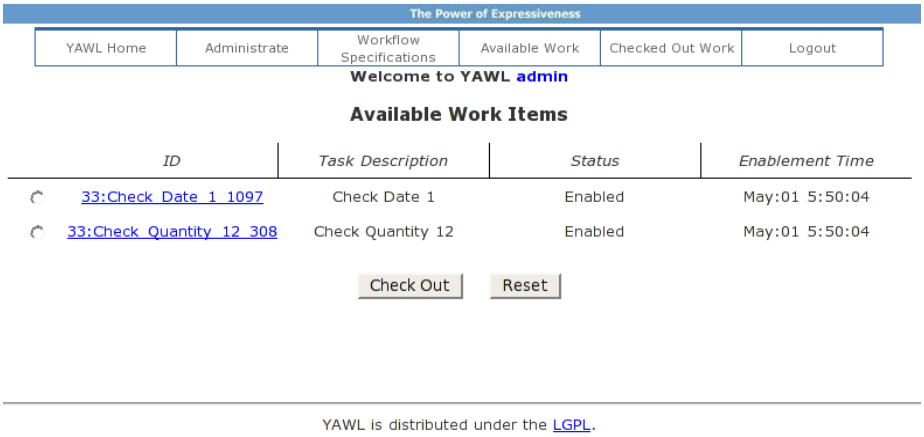
7.2.3 Scenario 3

Step 1: There is not enough space in the warehouse for the received goods.

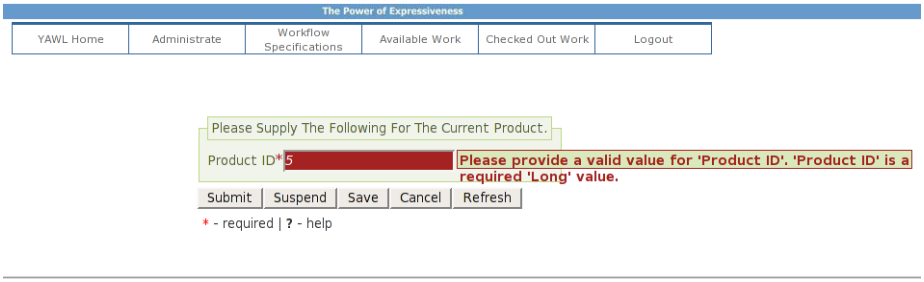


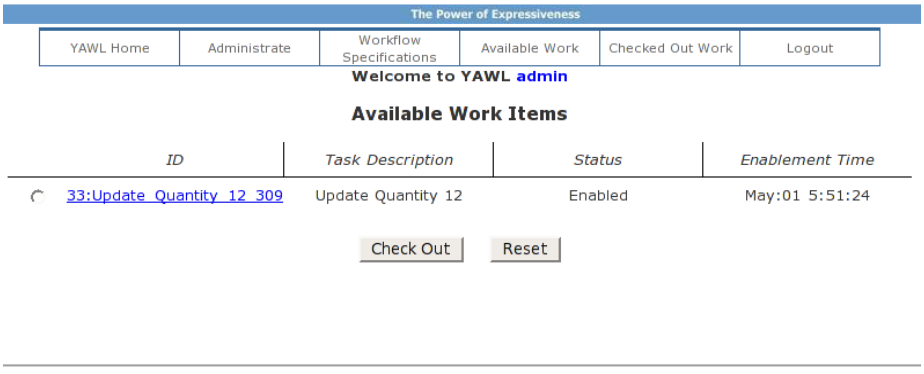
Step 2: Register the Employee's information and the date of Inspection.



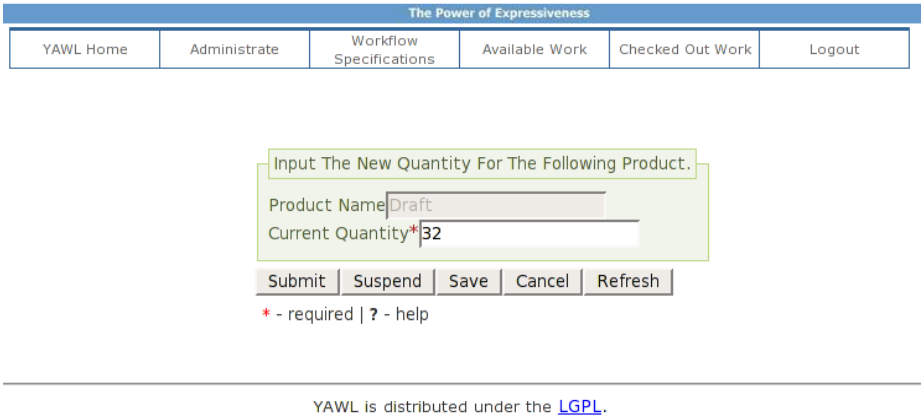


Step 3: Choose a product to process.

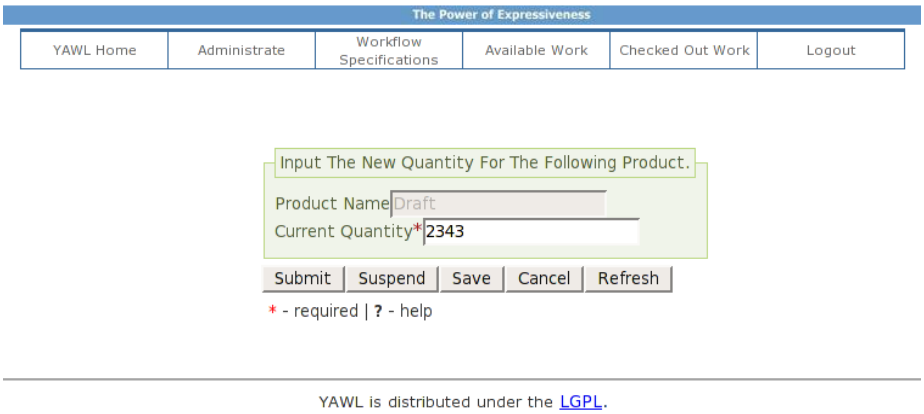


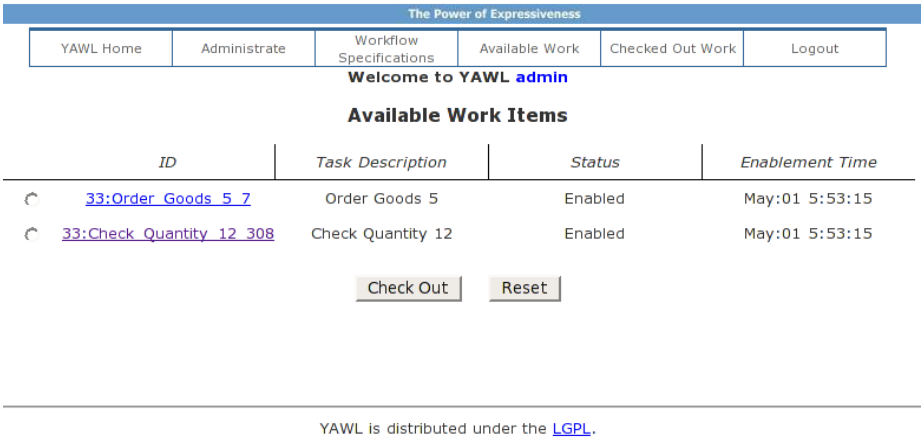


Step 4: Review the old quantity.

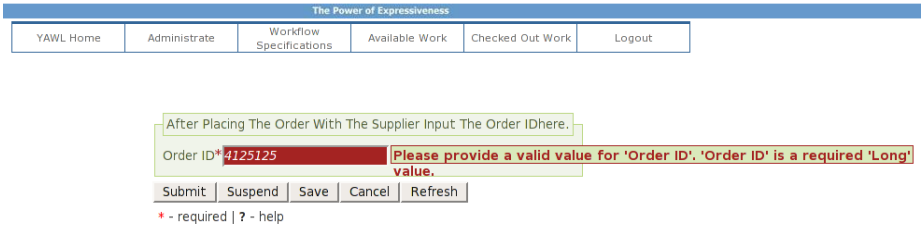


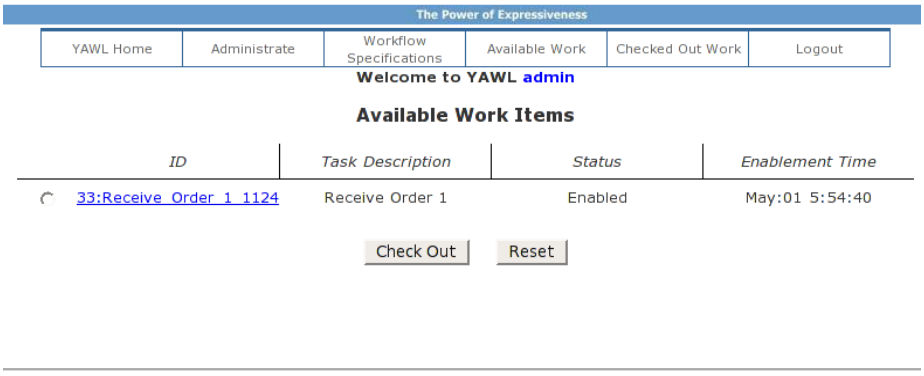
Step 5: And appropaiatly set the new quantity.



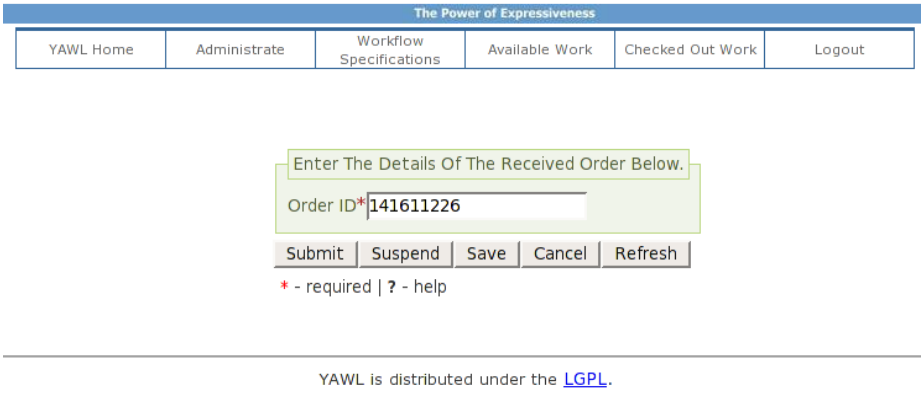


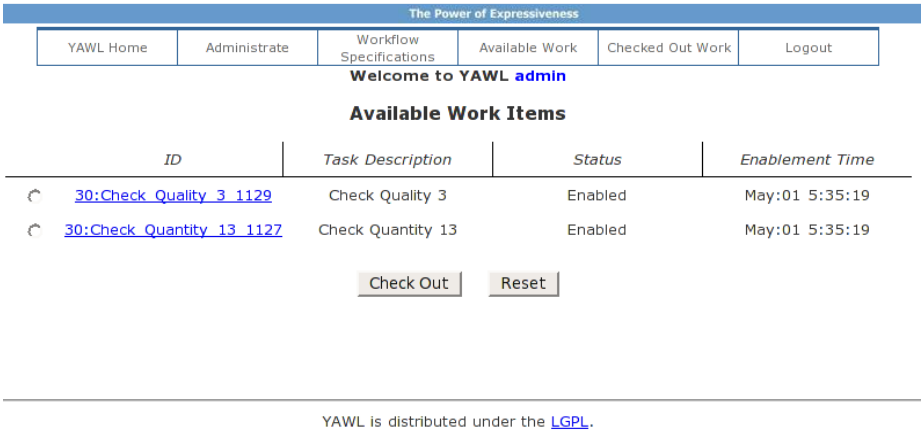
Step 6: When completing the Inspection new goods can be ordered.



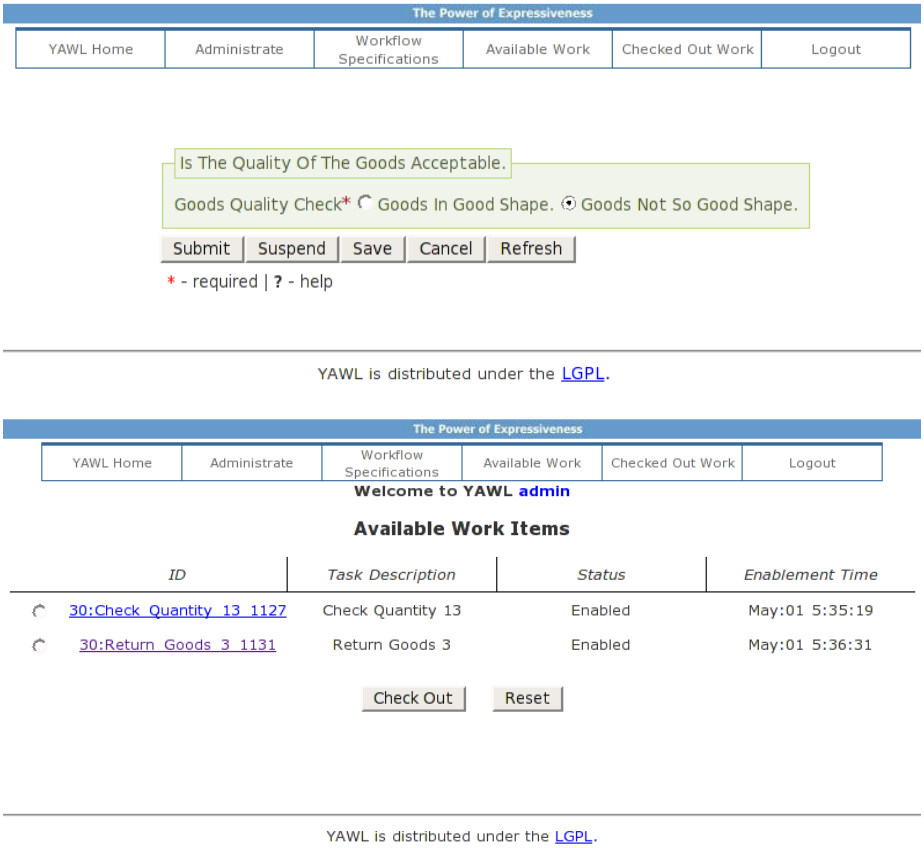


Step 7: Verify the Order ID in the system with the received Order.

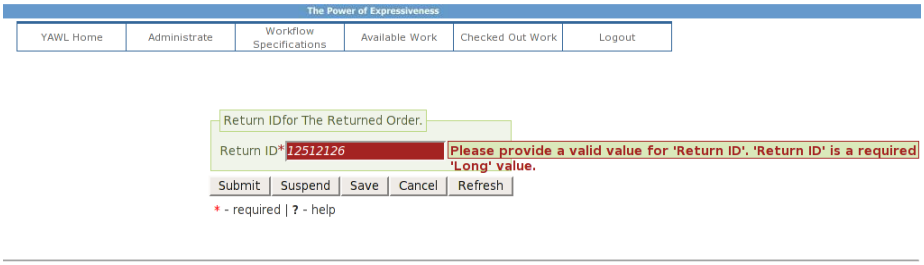


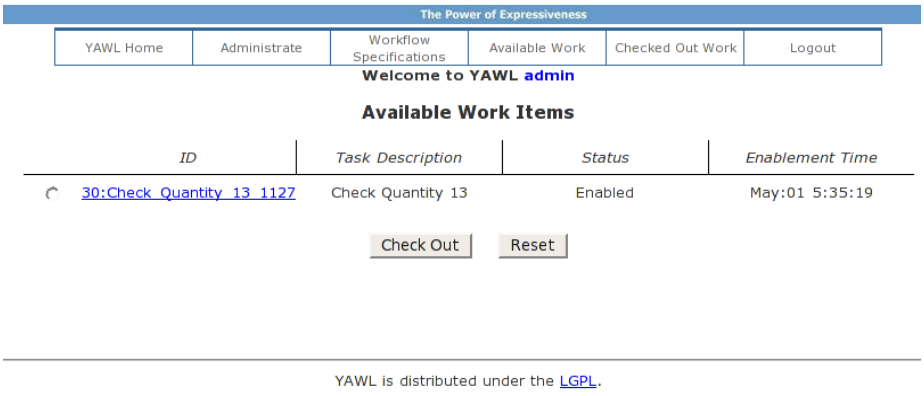


Step 8: The received goods where in an unacceptable shape, they will be returned.

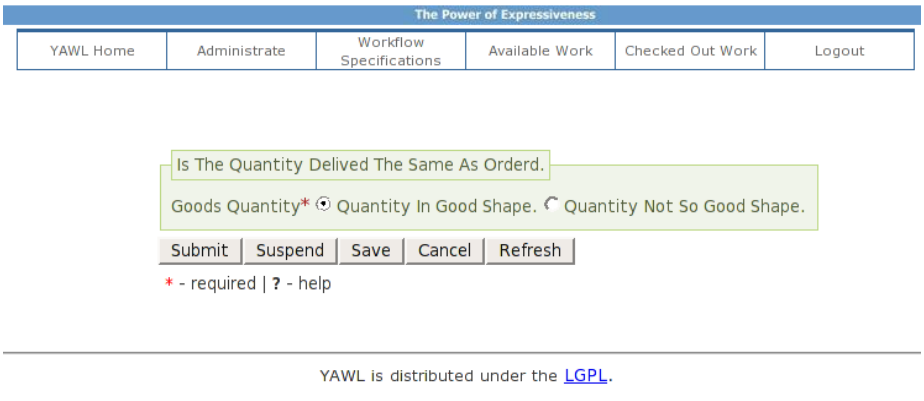


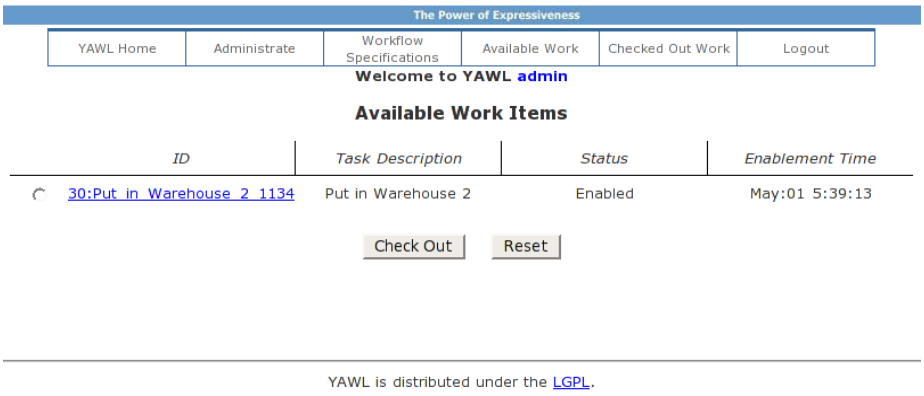
Step 9: Record the Return ID for reference in the system.



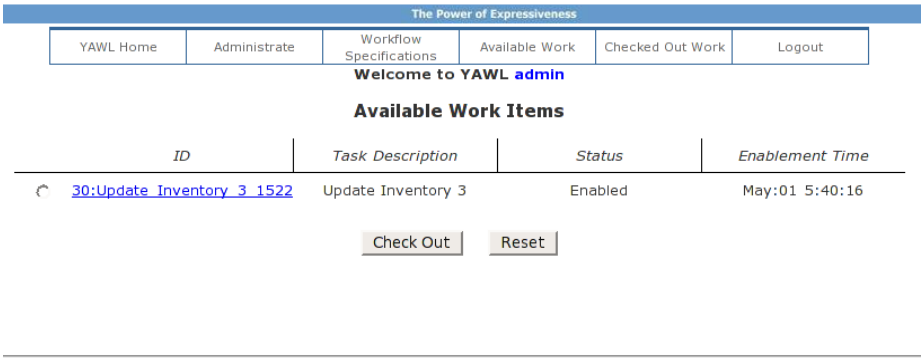


Step 10: The quantity is as ordered.





Step 11: There is enough space in the warehouse to receive the goods in.



Step 12: Job Completed.