Readme

Group4

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1   Model Parameters and Variables

$D(t)$: The actual demand at time t.
$F_r(t)$: The expected demand at time t.
$I_r(t)$: Retailer's inventory level at time t.
$R_r(t)$: Retailer's receipt amount at time t.
$S_r(t)$:Retailer's delivery amount at time t.
$O_r(t)$: Retailer's order amount at time t.
$S_d(t)$: Distribution center's delivery amount to retailers at time t.
$I_d(t)$: Distribution center's inventory level at time t.
$R_d(t)$: Distribution center's receipt amount at time t.
$W_d(t)$: Distribution center's in-transit inventory at time t.
$O_d(t)$: Distribution center's order amount at time t.
$I_r^0(t)$: Retailer's expected inventory levels at time t.
$I_d^0(t)$: Distribution center's expected inventory levels at time t.
$I^0(t)$: Warehouse-distribution center system's expected inventory levels at time t.
$S_w(t)$: Warehouse's delivery amount to distribution center at time t.
$I_w(t)$: Warehouse's inventory level at time t.
$R_w(t)$: Warehouse's receipt amount at time t.
$I(t)$: Warehouse-distribution center system's inventory level at time t.
$O(t)$: Warehouse-distribution center system's order amount at time t.
$Y(t)$: Supplier's work-in-process inventory at time t.
$0(t)$: Supplier's expected in-process inventory at time t.
α_S : The adjustment coefficient of inventory.
α_{SL} : The adjustment coefficient of work-in-process inventory or stock on the way.
T_P : Transport lead time.
T_C : Production lead time.
G_r : Safety inventory coefficient of retailer.
G_d : Safety inventory coefficient of distribution center.
G_w : Safety inventory coefficient of warehouse.