how much do I need to adjust the maximum production capacities to fix this? Diagnosing Action: Add model.slack_pc["max", :] and solve a problem to minimize sum(model.slack_pc["max", i] for i in model.units) Diagnosing Answer: You must increase the maximum production capacities at the 1st facility by at least 50 units if you want to make the model feasible.

Diagnosing Query: I'm having trouble obtaining a solution from the model. By

Retrieval Query: What do you believe are the best aircraft assignments for the ORD-SAN route? Retrieval Action: Retrieve the values of binary variables model.x[:, "ORD-SAN"]

Retrieval Answer: The model suggests assigning aircraft #4 and #7 to this route. Sensitivity Query: Winter is coming. How will our total

Sensitivity Action: Find the values of model.dual[model.orders_constr] Sensitivity Answer: The profit turns out to be sensitive to fluctuations in customer orders, with any unit decrease leading to an \$86.3 loss

profit be affected by the seasonal fluctuation in customer orders?

What-if Query: Can our plant still meet demand if the national regulation now cuts the limit of carbon dioxide emissions by 10%?

What-if Action: Modify model.emission["CO2"].value *= 0.9 and resolve the problem What-if Answer: You can still meet all the demands despite the stricter

CO2 emission limit, though the total profit has been lowered to \$297.874.

Why-not Query: Why is it not recommended to at least

build a steam boiler or a furnace to supply sufficient heat?

Why-not Action: Add constraint model.v["boiler"]

+ model.y["furnace"] >= 1 and resolve the problem Why-not Answer: If so, building a steam boiler will push the opti-

mal cost up to \$1.329M, which is much higher than the previous \$0.673M