winmath
Career Infused Capstone Projects

Refer to the last page of the Final Report document for Pilot data information for all four pilots — Carlos, Steven, Daniel and Sofia.

Name:

Run for your Flight

For each pilot, you will answer a series of questions to determine the need for a standby pilot. Your supervisor will review your answers to determine if you will keep your job or possibly receive a promotion. Be certain to fully explain or show how you found your answers. Your job depends on it!

Use your calculations from the group work to determine which pilots will need a standby pilot. If a pilot has less than a 75% chance of arriving in time to depart with the next scheduled flight, you as the Airline Schedule Coordinator will call a standby pilot. A standby pilot is also called if the pilot has less than a 65% accumulated chance of arriving on time for the next scheduled flight.

You should have paper available to record the results of certain calculations that will be needed later in the report. The directions will tell you which calculations will be used later in the report. Remember to show or explain your work.

Question 1

Leg 1: What is the likelihood that Carlos will depart San Francisco in time to fly to Denver? (Be sure to show or explain your calculations.)

a. What is the likelihood that flight 1569 from San Francisco to Los Angeles will be delayed?

b. If flight 1569 is delayed, what is the likelihood the delay will be more than 1 hour?

c. What is the likelihood that flight 1569 will be delayed AND the delay will be more than 1 hour?

d. What is the likelihood that Carlos will arrive in Los Angeles in time for his flight to Denver? (Write your answer below and record the result on paper for later use.)

Question 2

Leg 2: What is the likelihood that Carlos will depart Los Angeles in time to fly back to Los Angeles?

a. What is the likelihood that flight 855 from Los Angeles to Denver will be delayed?

b. If flight 855 is delayed, what is the likelihood that the delay will be more than 30 minutes?

c. What is the likelihood that flight 855 will be delayed AND the delay will be more than 30 minutes?

d. What is the likelihood that Carlos will arrive in Denver in time to fly back to Los Angeles? (Write your answer below and record the result on paper for later use.)

Question 3

Leg 3: What is the likelihood that Carlos will depart Denver in time to fly to San Francisco? (Write your answer below and record the result on paper for later use.)

Question 4

a. Complete the table below with the result of your computations for Carlos. Round your answers to the nearest tenth.

Flight #	Origination City	Departure Time	Destination City	Arrival Time	Flight Length	Likelihood of On-Time Departure	Accumulated Likelihood
1569	San Francisco	7:15am	Los Angeles	8:45am	1.5 hrs		
855	Los Angeles	9:45am	Denver	12:45pm	2 hrs		
2135	Denver	1:15pm	Los Angeles	2:45pm	2.5 hrs		
1423	Los Angeles	3:45pm	San Francisco	5:00pm	1.25 hrs		

b. If a pilot has less than a 75% chance of arriving in time for the next flight, a standby pilot must be ready to fly. Will a delayed arrival or departure for Carlos reach a point at which a standby pilot must be scheduled? If so, for which flight do you need a standby pilot?

c. A standby pilot is called when the accumulated (compound) probability of arriving in time drops below 65%. Will the accumulated chance of a delayed arrival or departure for Carlos reach a point at which a standby pilot must be scheduled? If so, for which flight do you need a standby pilot?

Question 5

Leg 1: What is the likelihood that Steven will depart Denver in time to fly to Las Vegas? (Be sure to show or explain your calculations.)

a. What is the likelihood that flight 2237 from Denver to Seattle will be delayed?

b. If flight 2237 is delayed, what is the likelihood that the delay will be more than 75 minutes (1 hour 15 minutes)?

c. What is the likelihood that flight 2237 will be delayed AND the delay will be more than 75 minutes?

d. What is the likelihood that Steven will arrive in Seattle in time for his flight to Las Vegas? (Write your answer below and record the result on paper for later use.)

Question 6

Leg 2: What is the likelihood that Steven will depart Seattle in time to fly to Denver? (Be sure to show or explain your calculations.)

a. What is the likelihood that flight 1367 from Seattle to Las Vegas will be delayed?

b. If flight 1367 is delayed, what is the likelihood that the delay will be more than 45 minutes?

c. What is the likelihood that flight 1367 will be delayed AND the delay will be more than 45 minutes?

d. What is the likelihood that Steven will arrive in Las Vegas in time for his flight to Denver? (Write your answer below and record the result on paper for later use.)

Question 7

a. Complete the table below with the results of your computations for Steven. Round your answers to the nearest tenth.

Flight #	Origination City	Departure Time	Destination City	Arrival Time	Flight Length	Likelihood of On-Time Departure	Accumulated Liklihood
2237	Denver	8:30am	Seattle	10:15am	2.75 hrs		
1367	Seattle	11:30am	Las Vegas	2:00pm	2.5 hrs		
956	Las Vegas	2:45pm	Denver	5:30pm	1.75 hrs		

b. If a pilot has less than a 75% chance of arriving in time for the next flight, a standby pilot must be ready to fly. Will a delayed arrival or departure for Steven reach a point at which a standby pilot must be scheduled?

c. A standby pilot is called when the accumulated (compound) probability of arriving in time drops below 65%. Will the accumulated chance of a delayed arrival or departure for Steven reach a point at which a standby pilot must be scheduled? If so, for which flight do you need a standby pilot?

Question 8

Leg 1: What is the likelihood that Daniel will depart Denver in time to fly to San Francisco? (Write your answer below and record the result on paper for later use.)

Question 9

Leg 2: What is the likelihood that Daniel will depart Phoenix in time to fly back to Phoenix? (Write your answer below and record the result on paper for later use.)

Question 10

Leg 3: What is the likelihood that Daniel will depart San Francisco in time to fly to Denver? (Write your answer below and record the result on paper for later use.)

Question 11

a. Fill in the table below with the results of your computations for Daniel. Round your answers to the nearest tenth.

Flight #	Origination City	Departure Time	Destination City	Arrival Time	Flight Length	Likelihood of On-Time Departure	Accumulated Likelihood
845	Denver	6:00am	Phoenix	7:45am	1.75 hrs		
670	Phoenix	9:00am	San Francisco	10:00am	2 hrs		
2751	San Francisco	10:30am	Phoenix	1:30pm	2 hrs		
3134	Phoenix	12:15pm	Denver	4:00pm	1.75 hrs		

b. If a pilot has less than a 75% chance of arriving in time for the next flight, a standby pilot must be ready to fly. Will a delayed arrival or departure for Daniel reach a point at which a standby pilot must be scheduled?

c. A standby pilot is called when the accumulated (compound) probability of arriving in time drops below 65%. Will the accumulated chance of a delayed arrival or departure for Daniel reach a point at which a standby pilot must be scheduled? If so, for which flight do you need a standby pilot?

Question 12

Leg 1: What is the likelihood that Sofia will depart Seattle in time to fly Phoenix? (Write your answer below and record the result on paper for later use.)

Question 13

Leg 2: What is the likelihood that Sofia will depart Denver in time to fly to Las Vegas? (Write your answer below and record the result on paper for later use.)

Question 14

Leg 3: What is the likelihood that Sofia will depart Phoenix in time to fly to Seattle? (Write your answer below and record the result on paper for later use.)

Question 15

a. Fill in the table below with the results of your computations for Sofia. Round your answers to the nearest tenth.

Flight #	Origination City	Departure Time	Destination City	Arrival Time	Flight Length	Likelihood of On-Time Departure	Accumulated Likelihood
845	Seattle	5:15am	Denver	8:45am	2.5 hrs		
670	Denver	10:15am	Phoenix	12:00pm	1.75 hrs		
2751	Phoenix	1:00pm	Las Vegas	1:00pm	1 hour		
2134	Las Vegas	2:30pm	Seattle	5:30pm	2.5 hrs		

b. If a pilot has less than a 75% chance of arriving in time for the next flight, a standby pilot must be ready to fly. Will a delayed arrival or departure for Sofia reach a point at which a standby pilot must be scheduled?

c. A standby pilot is called when the accumulated (compound) probability of arriving in time drops below 65%. Will the accumulated chance of a delayed arrival or departure for Sophia reach a point at which a standby pilot must be scheduled? If so, for which flight do you need a standby pilot?

RUN FOR YOUR FLIGHT

Pilot Data

Carlos

Flight Number	Origination City	Departure Time	Destination City	Arrival Time	Flight Length
1569	San Francisco	7:15 a.m.	Los Angeles	8:45 a.m.	1.5 hours
855	Los Angeles	9:45 a.m.	Denver	12:45 p.m.	2 hours
2135	Denver	1:15 p.m.	Los Angeles	2:45 p.m.	2.5 hours
1423	Los Angeles	3:45 p.m.	San Francisco	5:00 p.m.	1.25 hours

Steven

Flight Number	Origination City	Departure Time	Destination City	Arrival Time	Flight Length
2237	Denver	8:30 a.m.	Seattle	10:15 a.m.	2.75 hours
1367	Seattle	11:30 a.m.	Las Vegas	2:00 p.m.	2.5 hours
956	Las Vegas	2:45 p.m.	Denver	5:30 p.m.	1.75 hours

Daniel

Flight Number	Origination City	Departure Time	Destination City	Arrival Time	Flight Length
845	Denver	6:00 a.m.	Phoenix	7:45 a.m.	1.75 hours
670	Phoenix	9:00 a.m.	San Francisco	10:00 a.m.	2 hours
2751	San Francisco	10:30 a.m.	Phoenix	1:30 p.m.	2 hours
3134	Phoenix	2:15 p.m.	Denver	4:00 p.m.	1.75 hours

Sofia

Flight Number	Origination City	Departure Time	Destination City	Arrival Time	Flight Length
845	Seattle	5:15 a.m.	Denver	8:45 a.m.	2.5 hours
670	Denver	10:15 a.m.	Phoenix	12:00 p.m.	1.75 hours
2751	Phoenix	1:00 p.m.	Las Vegas	1:00 p.m.	1 hour
2134	Las Vegas	2:30 p.m.	Seattle	5:30 p.m.	2.5 hours