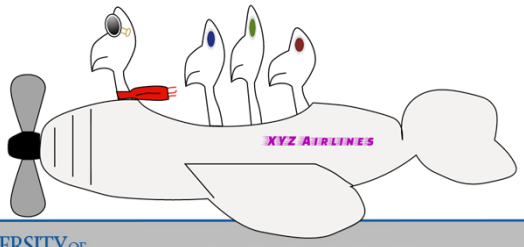
BUAD621: Intro to Generative Stories

(using RV's)

UNIVERSITY OF DELAWARE

Generative Stories With Random Variables

Example
XYZ Airlines operates a 3-seater airplane to show tourists the Great Barrier Reef in Cairns, Australia. The company uses a reservation system, wherein tourists call in advance and make a reservation for aerial viewing the following day. The company is so popular, that all of its seats are booked each day. Based on historical records, 15% of the tourists fail to show up for their reservation.



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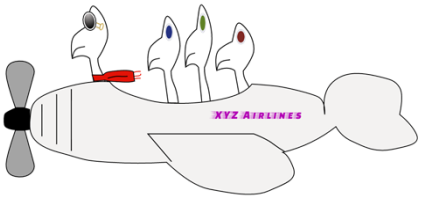
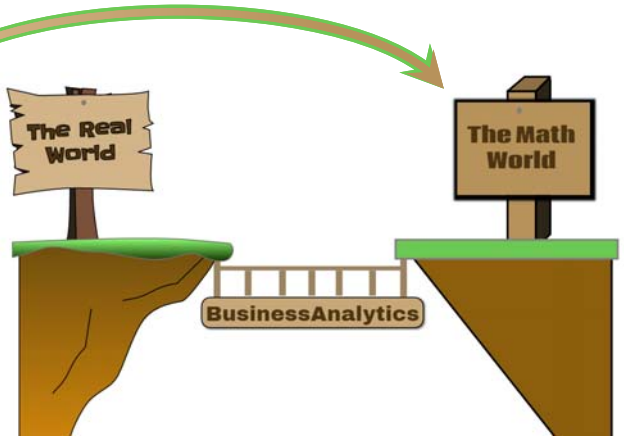
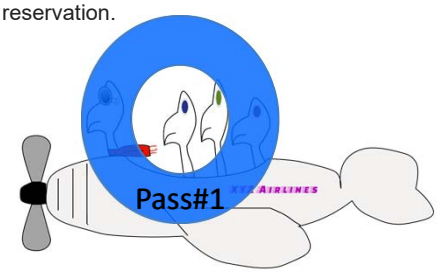




Modelling Passenger #1's Arrival To Airplane

Example
XYZ Airlines operates a 3-seater airplane to show tourists the Great Barrier Reef in Cairns, Australia. The company uses a reservation system, wherein tourists call in advance and make a reservation for aerial viewing the following day. The company is so popular, that all of its seats are booked each day. Based on historical records, 15% of the tourists fail to show up for their reservation.



QUESTION: What is the probability passenger #1 arrives at the airplane?

Modelling Passenger #1's Arrival To Airplane

Example
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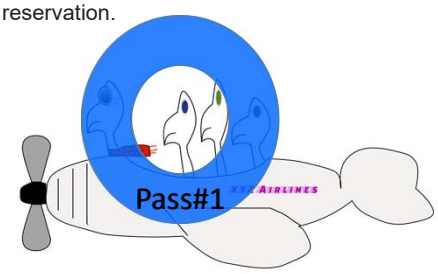

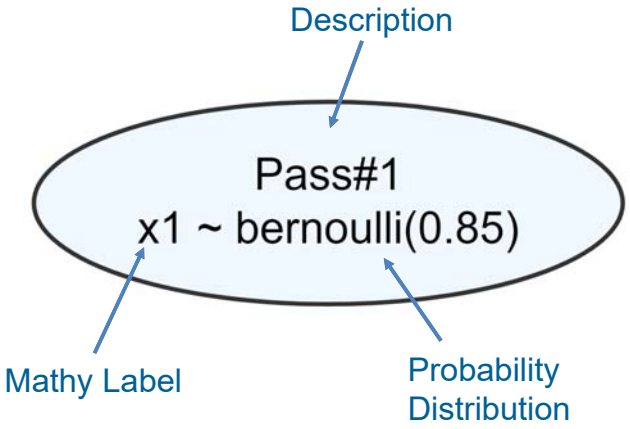

Note: Read the tilde (~) as "is distributed"

Modelling Passenger #1's Arrival To Airplane

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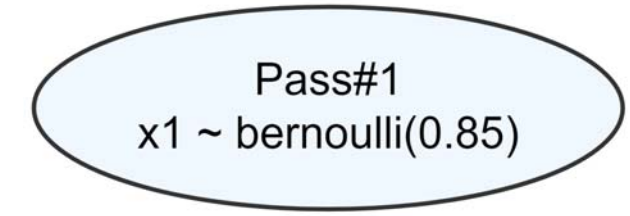

What values of x1 are possible?

What is the probability $x1 = 0$?

What is the probability $x1 = 0.85$?

What is the probability $x1 \leq 1$?

Modelling All Passenger's Arrival

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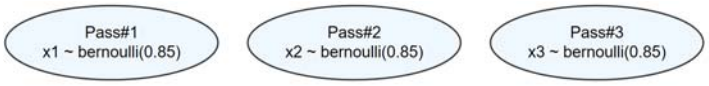

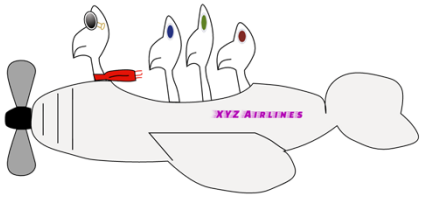

Modelling Total # of Passengers

Example
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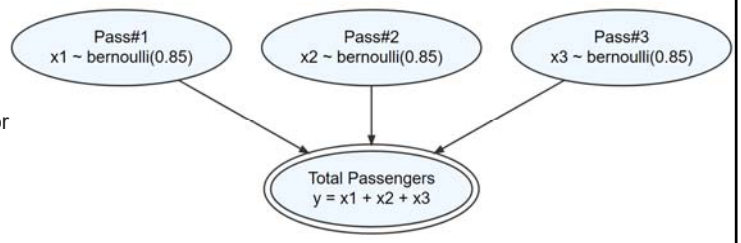
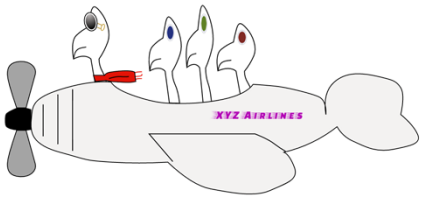
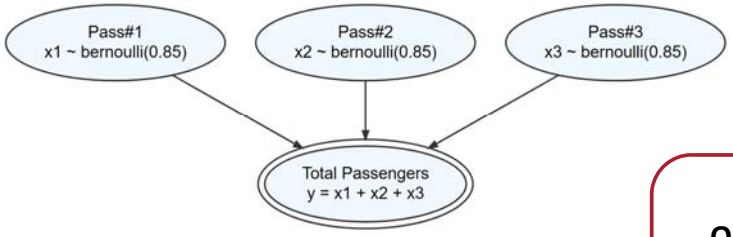




Modelling Total # of Passengers



QUESTION: What is the probability that the airplane is full (i.e. $P(y = 3)$)?

Let's Answer This Using `XYZAirline.R`

Generative Story Estimates