Poisson Distribution

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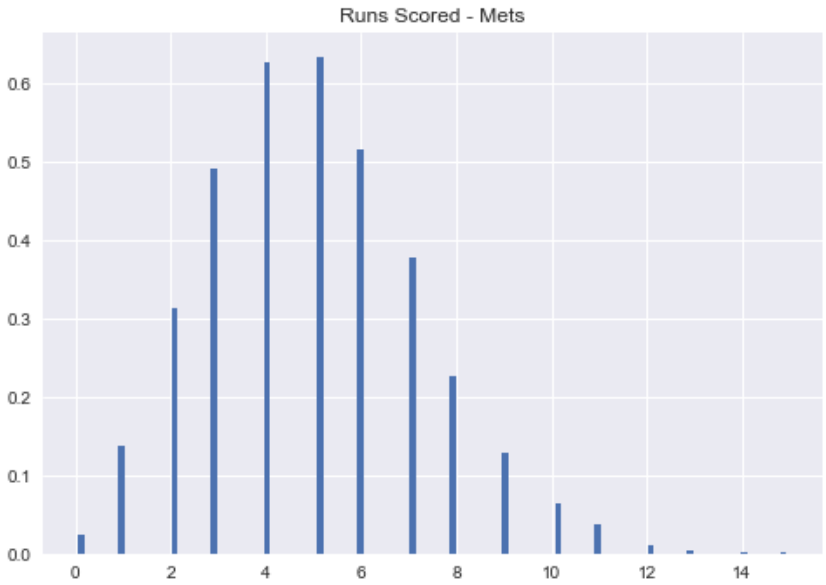
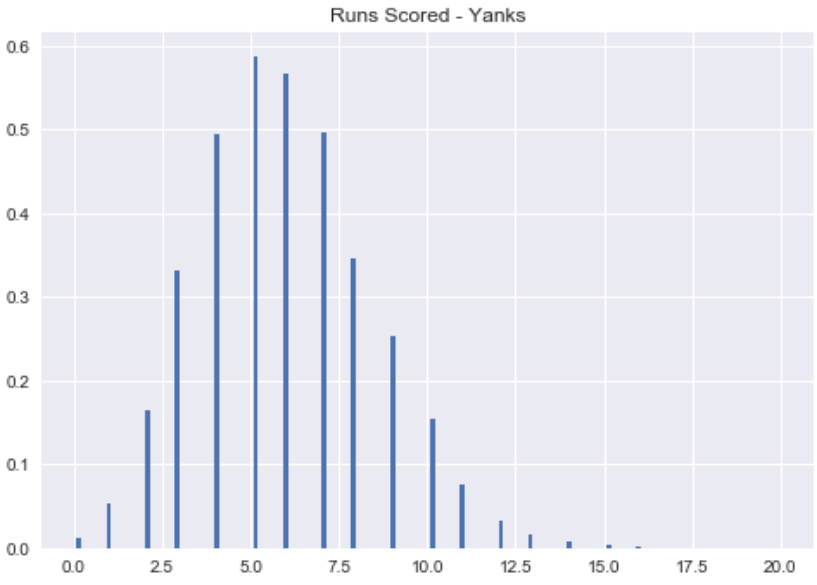
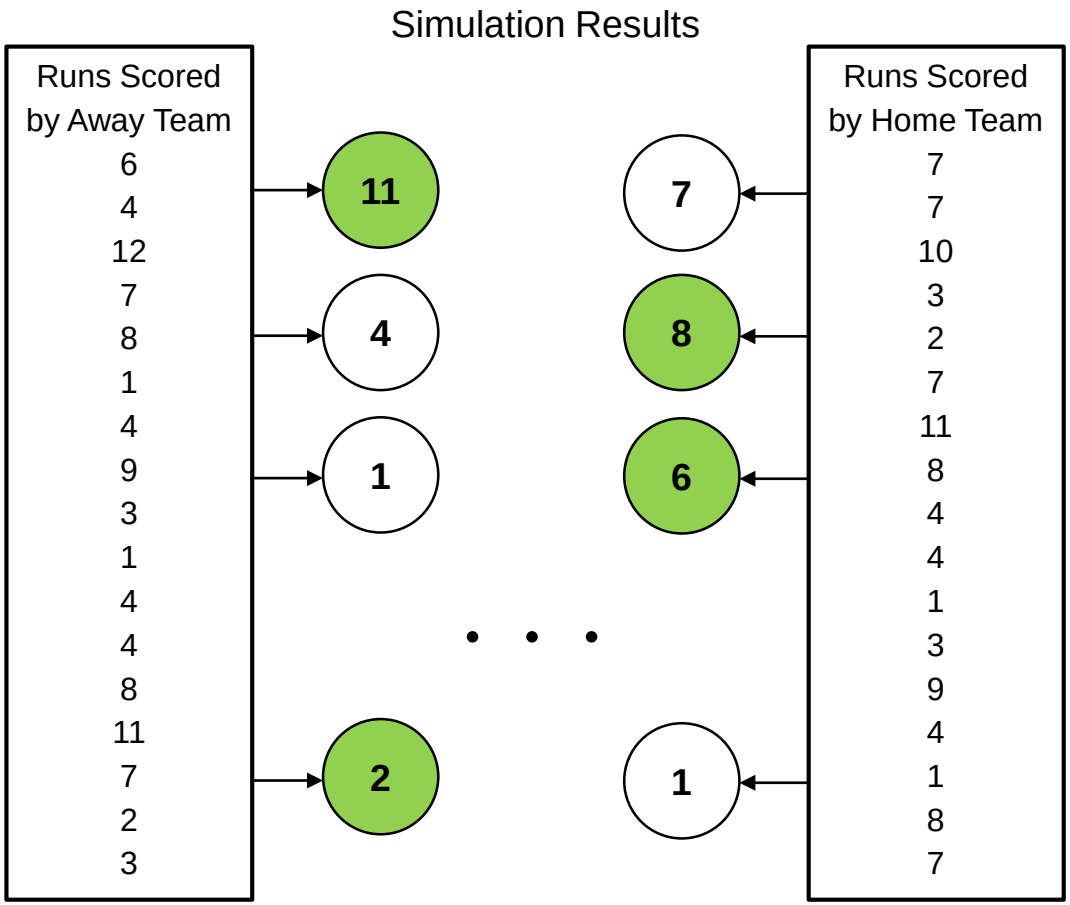
Simulating Runs Scored





Sports Simulation

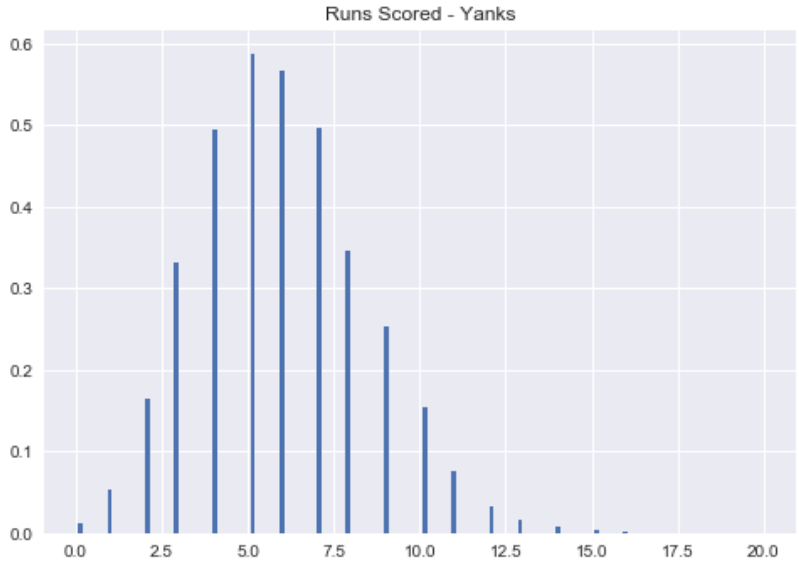


Source: Adapted from Miller (2005).

Poisson Distribution

- Good approximation for count responses

$$P(Y = y) = \frac{e^{-\mu}\mu^{y}}{y!}$$



- Occurrence of events during certain time interval
- Arrival rate problems

Poisson Distribution (cont.)

MetAwayScore =
np.random.poisson(4.97, 10000)

MetAwayDefend =
np.random.poisson(3.45, 10000)

YankHomeScore =
np.random.poisson(5.97, 10000)

YankHomeDefend =
np.random.poisson(4.84, 10000)

plt.hist(MetAwayScore, bins='auto',
rwidth = .5, normed=True)

plt.title("Runs Scored – Mets")
plt.show()