**Discrete:**

1. Binomial - See Section 4.5 as to when you may use it.
2. **Poisson** - See Section 4.6 as to when you may use it.
3. Hypergeometric - See Section 4.7 as to when you may use it.

**Continuous:**

1. Uniform - See Section 5.1 as to when you may use it.
2. Normal - See Section 5.2
3. Exponential - See Section 5.4 as to when you may use it.

Your task for this discussion is as follows:

1. As a manager of an organization, what probability distribution from this week would you use if you wanted to estimate your **annual** employee turnover?
2. Explain why you would use it.
3. Identify the statistical formulas **specifically** and what additional **data** you would need to determine your estimate(s).
4. Explain why your probability distribution applies.

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As a manager of an organization, I would make use of a Poisson distribution to estimate annual employee turnover. Any attrition should be independent of subsequent attrition. I should expect a stable turnover rate not impacted by employees leaving the company. A Poisson distribution is appropriate for estimating the probability of these independent events over a fixed period of time (Holmes et al., 2018). For this I would need to collect yearly attrition rates from our employee administration software and calculate the annual mean.

The Poisson formula is as follows: *P(x) = (μx)(e-μ) / x!* The expected average is μ, e is the natural logarithm, x is the unit of time (1 year), and P(x) the probability.

References

Holmes, A., Illowsky, B., & Dean, S. (2018). *Introductory Business Statistics* (1st ed.). OpenStax.