1. Pick one discrete and one continuous distribution we have covered, and try and find an interesting application of it. If you can find one from within AI research or practice that would be great!

Solution

(i) Discrete distribution

->Poisson distribution

This distribution can be used in business cases for instance in evaluating insurance coverage in a business, where it can be used to determine the maximum and minimum percentages of claims to be filed within a certain period of time

(ii) Continuous distribution

->Exponential distribution

This distribution finds its use case in business operations where it can be used to calculate the length of time for which a certain product can last as well as its reliability

2. Then, find one discrete and one continuous distribution which we haven't covered, and briefly describe it to your fellow students, again with an interesting application if you can find one.

Solution

(i) Discrete distribution

->Multinomial distribution

This distribution can be used in financial sectors where is used for estimating probabilities of certain occurrences of certain outcomes, such as estimating the probability of a small-based company outperforming a large-based company with relatively equal returns in a specific period

(ii) Continuous distribution

->Weibull distribution

This distribution is widely used in business sectors to evaluate the reliability of certain products as well as modelling their failures and success times

It can also be used in forecasting technical and weather changes for future references