1: Hybrid Gibbs Sampler to estimate Poisson Distribution λ (30%)

For these Poisson distributed random variables (r.v.s) ($n = 500$) with mean parameter λ, unobserved variables are $\lambda, y_1, y_2, \ldots, y_{78}$, in which $y's$ denote the r.v.s which are more than or equal to five.

$$Prior : \pi(\lambda) \propto \frac{1}{\lambda};$$
$$P(X, Y|\lambda) = \prod_{i=1}^{422} \frac{e^{-\lambda}\lambda^{x_i}}{x_i!} \prod_{j=1}^{78} \frac{e^{-\lambda}\lambda^{y_i}}{y_i!} I(y_i \geq 4);$$

2: Bayesian Inference (30%)

3: Hybrid Gibbs Sampler (40%)