This is the implementation of Basket default Swap (BDS) estimation using three methods: Monte Carlo (MC), Importance Sampling (IS) and Conditional Probability (CP). The result shows that IS and CP has more efficiency and lower variance than MC in terms of the BDS having long maturity or high credit-ratings in the basket. Also CP has an guaranteed variance reduction. The given example is a 7 Assets, 7th (last-to) default with 1000 simulation each maturity.

Reference paper: https://www0.gsb.columbia.edu/faculty/pglasserman/Other/FPBDS.pdf

Keyword: Monte Carlo, Importance Sampling, Markov chain, Joshi and Kainth modified Algorithm, Gaussian coupla, variance reduction.