**Task 3**



Let be random variables with Bernoulli distribution, such that if -th toss is a “Head” and otherwise.

So for .

Then we can say that is a sum of for in .

As are independent variables that have same Bernoulli distribution we can say that their sum has Binomial distribution.

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of binomially distributed variable is symmetric about its estimated value , so we can say, that .

As such we get

* According to Chebyshev’s inequality

Hence