NPTEL

NPTEL ONLINE COURSE

Discrete Mathematics

Let Us Count

Combinations - Part 3

Prof. S.R.S Iyengar

Department of Computer Science

IIT Ropar

Before solving a lot of problems on combinations, let us see some nice results. nC0 is what is choosing 0 objects from n objects, but in how many ways can we do this? As the formula goes it is n factorial by 0 factorial into n minus 0 factorial which is same as n factorial and we can cancel the n factorial in the denominator and the numerator and we get 1 by 0 factorial and we know that 0 factorial is 1 hence nC0 is 1. So there is precisely one way in which you can choose 0 objects from n objects. The statement choosing 0 objects from n objects might be a little very weird but whenever we encounter with nC0 we generally write it as 1. nCn is choosing n objects from n objects. So in how many ways can we do this? With the formula it is n factorial by n factorial into n minus n factorial which is same as n factorial by 0 factorial into n factorial and this is again 1 as we have seen in the previous one. So there is one way in which you can choose all the n objects from the given n objects.

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