Prof. S. R. S. Iyengar
**Department of Computer Science**
IIT Ropar
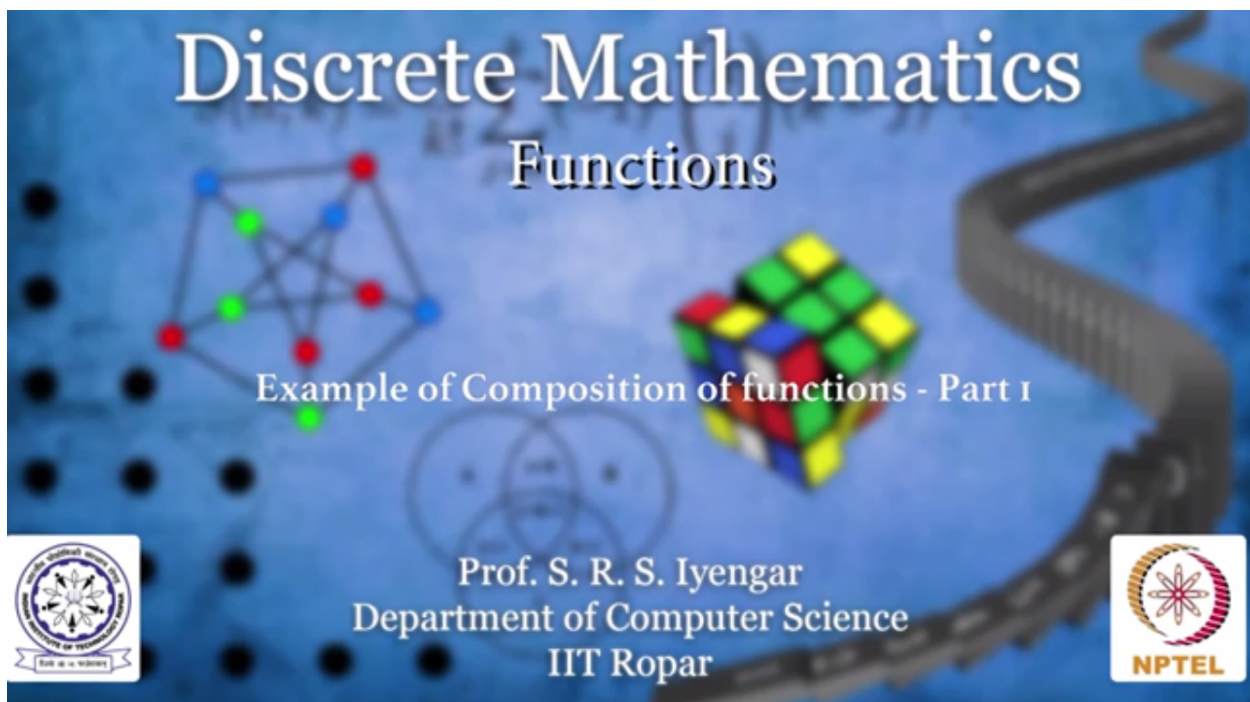
Imagine there is this airlines, which gives a very weird kind of an offer for couples only. They say if the couple's collective age, husband's age plus the wife's age is greater than or equal to 50, then they get 50% discount in their airfare.

But a point to note their collective age should be greater than or equal to 50. It doesn't matter whose age is what. Some total should be greater than or equal to 50.

So what do we do here? We first consider the sum of the age of the husband and age of the wife. Let's say that's a function f, which takes as input husband's age and wife's age and gives you as an output husband plus white. I'm trying to make things very simple to you.
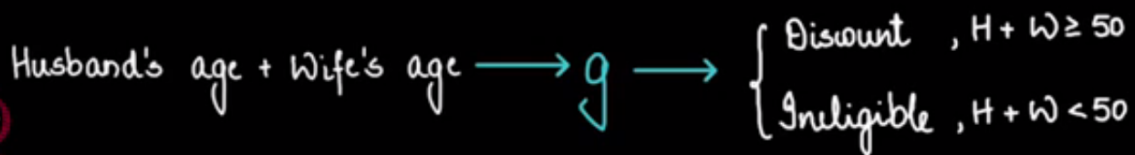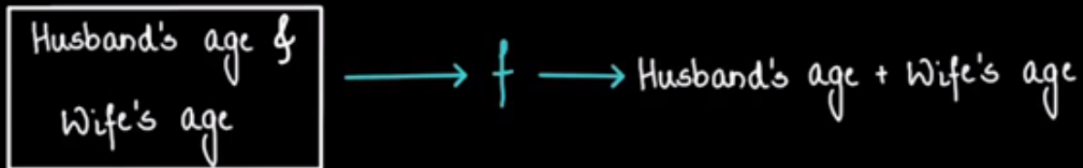
Airlines — Offer for couples only

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If Husband's age + Wife's age ≥ 50,

then they get 50% discount.

| Husband's age & Wife's age | $\longrightarrow f \longrightarrow$ Husband's age + Wife's age |
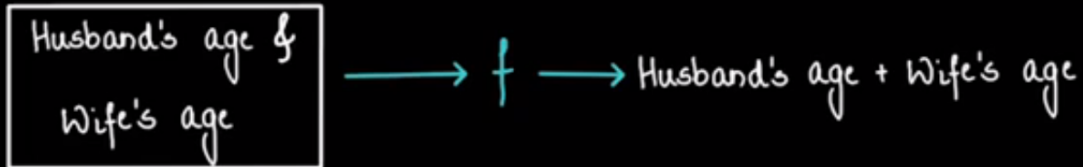
I can give you a very complicated example of application in let's say computer science, but I want to try making things very simple to you. You can, of course, think of a very complicated example here and then the answer that you get is fed into another function g, which checks if H + W which is the input to g is greater than or equal to 50 or not. If it is greater than or equal to 50, it says yes, eligible for the discount. If it's less than 50, it says no, ineligible for the discount.

Airlines — Offer for couples only

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If Husband's age + Wife's age ≥ 50,

then they get 50% discount.

| Husband's age & Wife's age | $\longrightarrow f \longrightarrow$ Husband's age + Wife's age |

Husband's age + Wife's age $\longrightarrow g \longrightarrow \begin{cases} \text{Discount} & , H + W \geq 50 \\ \text{Ineligible} & , H + W < 50 \end{cases}$

You see what's happening. There is an input for the – for this function f and the output of this function f is an input for another function.

Now here is an example of function composition. Now as you could see, function composition need not necessarily be between two functions g and f. It can be – it can be defined with many functions: f, g, h, i so on or maybe even f1, f2, f3, f4, f5 and so on. Right? The idea, the take home message from this video clip is that you must have a knack for a function, a function's output being an input for another function and that is what we mean by composition of two functions.

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