

# ID SYSTEM FOR PROJECT FROST

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The algorithm for the id system of project frost is just some mathematical operations. First of all, we need get the length of the username and assign it to the variable  $x$ .

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$$\begin{aligned} &1) \\ &f : \mathbb{R} \rightarrow \mathbb{R}; \\ &g : \mathbb{R} \rightarrow \mathbb{R}; \\ &z := \text{len}(\text{username}); n = 1; i = 100000; \end{aligned}$$

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$$\begin{aligned} &2) \\ &f(x) = \begin{cases} \prod_n^x n & \text{if } x \leq 8 \\ \sum_n^x n & \text{if } x > 8 \end{cases} \end{aligned}$$

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$$\begin{aligned} &3) \\ &g(x) = f(z) + i \end{aligned}$$

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So that is what we are doing in the Id system. First we are taking the username from the user and calculating its length. After we calculate the length of the username, we are creating a piecewise function contains two conditions. Our critical point is 8. If length of the username is less or equal to 8, then we product all the numbers from 1 to length of the username. If length of the username is greater than 8, then we sum all the number from 1 to length of the username. And at the end, we have a function called  $g(x)$ . What it does is actually quite simple. It calls the function  $f(x)$  with the length of the username, and it returns the sum of the  $f$  function and basenumber.