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Jordan-Hölder decomposition

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A *Jordan–Hölder decomposition* of a group G is a filtration

$$G = G_1 \supset G_2 \supset \cdots \supset G_n = \{1\}$$

such that G_{i+1} is a normal subgroup of G_i and the quotient G_i/G_{i+1} is a simple group for each i .